ĐẠI HỌC QUỐC GIA
THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC QUỐC TẾ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

CHƯƠNG TRÌNH ĐÀO TẠO KHÓA 2023 –NGÀNH KỸ THUẬT XÂY DỰNG TRÌNH ĐỘ ĐẠI HỌC

(Kèm theo Quyết định số 1182/QĐ-ĐHQT ngày 30 tháng 8 năm 2023 của Hiệu trưởng trường Đại học Quốc tế)

1. Thông tin chung

- Tên ngành đào tạo:
  + Tiếng Việt: **KỸ THUẬT XÂY DỰNG**
  + Tiếng Anh: CIVIL ENGINEERING
- Mã ngành đào tạo: 7580201
- Trình độ đào tạo: Đại học
- Loại hình đào tạo: Chính Quy
- Thời gian đào tạo: 4.5 năm
- Tên văn bằng sau khi tốt nghiệp:
  + Tiếng Việt: Kỹ sư Kỹ thuật Xây dựng
  + Tiếng Anh: Engineer in Civil Engineering
- Nơi đào tạo: Trường Đại học Quốc tế - ĐHQG Tp.HCM

2. Thông tin tuyển sinh và kế hoạch đào tạo

a. Đối tượng tuyển sinh

Đối tượng tuyển sinh căn cứ theo quy chế tuyển sinh đại học của Bộ Giáo dục và Đào tạo và Đề án tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Đề án tuyển sinh của trường Đại học Quốc tế.

b. Hình thức tuyển sinh

Trường Đại học Quốc tế thực hiện tuyển sinh theo Quy chế tuyển sinh Đại học ban hành hàng năm bởi Bộ Giáo dục và Đào tạo, căn cứ theo Đề án tuyển sinh hàng năm của Đại học Quốc gia TP.HCM và Đề án tuyển sinh của trường Đại học Quốc tế.

c. Tổ hợp môn xét tuyển: A00, A01, D07

d. Dự kiến chỉ tiêu tuyển sinh, quy mô đào tạo: 40 sinh viên

3. Mục tiêu đào tạo

a. Mục tiêu chung:

Đào tạo các kỹ sư xây dựng chuyên nghiệp có kiến thức, kỹ năng chuyên môn cao; có đủ phẩm chất chính trị và trách nhiệm xã hội cao để có thể giải quyết các vấn đề phức tạp và mang tính đa ngành trong ngành công nghiệp xây dựng; và có khả năng thích ứng cao với thị trường lao động luôn biến đổi và đòi hỏi ngày càng cao trong nước và quốc tế.

Bảng 1. Sự phù hợp của mục tiêu đào tạo với Tầm nhìn, sứ mạng và Mục tiêu giáo dục của Luật giáo dục đại học.

Mục tiêu đào tạo của CTĐT	**Tầm nhìn**	**Sứ mạng**	**Luật giáo dục đại học**
Đào tạo các kỹ sư xây dựng chuyên nghiệp có kiến thức, kỹ năng chuyên môn cao; có đủ phẩm chất chính trị và trách nhiệm xã hội cao để có thể giải quyết các vấn đề phức tạp và mang tính đa ngành trong ngành công nghiệp xây dựng; và có khả năng thích ứng cao với thị trường lao động luôn biến đổi và đòi hỏi ngày càng cao trong nước và quốc tế.	Trường ĐHQT là trường đại học nghiên cứu thuộc tốp đầu tại châu Á; là cơ sở giáo dục quốc tế, tự chủ, sáng tạo; **là nơi vun đắp và phát triển nguồn nhân lực chất lượng cao cho thị trường lao động trong nước và quốc tế.**	**Trường Đại học Quốc tế** - Là **cơ sở giáo dục quốc tế, mang bản sắc văn hóa Việt Nam.** - Cơ sở giáo dục đại học đi tiên phong trong đổi mới cơ chế quản trị đại học theo mô hình tự chủ và tiên tiến. **- Đào tạo chất lượng cao đa ngành – đa lĩnh vực.** Đạt chuẩn kiểm định chất lượng giáo dục theo tiêu chuẩn quốc tế/khu vực cho tất cả các chương trình đào tạo. - Giảng dạy và nghiên cứu thực hiện bằng tiếng Anh là điểm khác biệt **nâng tầm quốc tế của nhà trường**. **Người học được đào tạo và rèn luyện để trở thành công dân toàn cầu và có trách nhiệm với xã hội, dẫn dắt xã hội trong tương lai**. **- Nghiên cứu cơ bản với hàm lượng tri thức lớn song hành với nghiên cứu ứng dụng, đáp ứng yêu cầu đổi mới sáng tạo và phát triển bền vững của doanh nghiệp, địa phương và xã hội**; **quan tâm, thúc đẩy các hoạt**	Khoản 1, điều 5: **- Đào tạo nhân lực, nâng cao dân trí, bồi dưỡng nhân tài, nghiên cứu khoa học, công nghệ tạo ra tri thức, sản phẩm mới, phục vụ yêu cầu phát triển kinh tế - xã hội, bảo đảm quốc phòng, an ninh vào hội nhập quốc tế;** **- Đào tạo người học có phẩm chất chính trị đạo đức, có kiến thức, kỹ năng thực hành nghề nghiệp, năng lực nghiên cứu vào phát triển ứng dụng khoa học và công nghệ tương xứng trình độ đào tạo, có sức khỏe, khả năng sáng tạo và trách nhiệm nghề nghiệp, thích nghi với môi trường làm việc, có ý thức phục vụ nhân dân.**

Mục tiêu đào tạo của CTĐT	Tầm nhìn	Sứ mạng	Luật giáo dục đại học
		động kết nối và phục vụ cộng đồng. **Khoa Kỹ thuật và Quản lý Xây dựng** - Nghiên cứu theo hướng **học thuật và thực tiễn**; - Đào tạo thế hệ kỹ sư Xây dựng "mới", **có khả năng giải quyết các vấn đề trong thực tiễn kỹ thuật** đồng thời có **kỹ năng giao tiếp tiếng Anh thành thạo** trong công việc và giao tiếp thường nhật; **- Cung cấp các dịch vụ hiện đại cho công nghiệp và xã hội**.	

b. Mục tiêu cụ thể (Program Objectives - POs)

(1) PO1: Sinh viên tốt nghiệp có thể giải quyết các vấn đề phát sinh trong ngành kỹ thuật xây dựng theo phương pháp định lượng và tiếp cận hệ thống;

(2) PO2: Sinh viên tốt nghiệp có động lực học tập lâu dài, có cảm hứng sáng tạo và đổi mới để đóng góp cho lĩnh vực Kỹ thuật Xây dựng;

(3) PO3: Sinh viên tốt nghiệp có khả năng thiết kế và quản lý các dự án xây dựng một cách chuyên nghiệp, tuân thủ các quy chuẩn về đạo đức nghề nghiệp.

4. Chuẩn đầu ra của chương trình đào tạo (Program Learning Outcomes –PLOs)

STT	Chuẩn đầu ra	Trình độ năng lực
1.	**Kiến thức đại cương**	
PLO1	Hiểu và vận dụng kiến thức tự nhiên, toán học mô tả hiện tượng vật lý trong các nghiên cứu định tính và định lượng.	4,0
PLO7	Khả năng giao tiếp chuyên ngành với đồng nghiệp cùng ngành và với cộng động, với các hình thức giao tiếp khác nhau (nói, viết …)	4,0
PLO8	Có kiến thức rộng để hiểu được sự tác động của giải pháp xây dựng đến xã hội và toàn cầu.	4,0

PLO9	Có kiến thức về các vấn đề đương đại của ngành kỹ thuật xây dựng ở qui mô địa phương, quốc gia và quốc tế.	4,0
2.	**Kiến thức chuyên ngành**	
PLO2	Hiểu khái niệm cơ bản của ngành kỹ thuật xây dựng (địa chất công trình, khoa học vật liệu, kết cấu công trình, lý thuyết kết cấu, trắc địa, thiết kế kỹ thuật, cơ học đất, cơ học chất lỏng, và phương pháp tính toán, phân tích dữ liệu cho thiết kế xây dựng công trình).	4,5
PLO3	Khả năng phân tích và chuẩn bị dự dán đầu tư, hiểu tác động kinh tế xã hội và môi trường của các dự án đó.	4,0
PLO5	Khả năng đóng góp chuyên môn khi tham gia làm việc nhóm đa ngành (bao gồm nhiều quốc gia và giới tính), cũng như có kiến thức quản lý và tổ chức để giữ vai trò dẫn dắt.	4,5
3.	**Kỹ năng chuyên ngành**	
PLO2	Hiểu khái niệm cơ bản của ngành kỹ thuật xây dựng (địa chất công trình, khoa học vật liệu, kết cấu công trình, lý thuyết kết cấu, trắc địa, thiết kế kỹ thuật, cơ học đất, cơ học chất lỏng, và phương pháp tính toán, phân tích dữ liệu cho thiết kế xây dựng công trình).	4,5
PLO3	Khả năng phân tích và chuẩn bị dự dán đầu tư, hiểu tác động kinh tế xã hội và môi trường của các dự án đó.	4,5
PLO5	Khả năng đóng góp chuyên môn khi tham gia làm việc nhóm đa ngành (bao gồm nhiều quốc gia và giới tính), cũng như có kiến thức quản lý và tổ chức để giữ vai trò dẫn dắt.	4,5
PLO10	Khả năng sử dụng kỹ thuật, kỹ năng và công cụ hiện đại trong thực hành, bao gồm xác định nhiệm vụ của kỹ sư xây dựng, phân tích, khái quát và xây dựng vấn đề, cùng với khả năng phát triển nguyên lý, kế hoạch và phương pháp chứng minh và dự đoán (ví dụ: phân tích ổn đinh, hiệu năng, bảo vệ tiếng ồn, phòng chống lũ lụt và cung ứng nguồn nước).	5,0
4.	**Kỹ năng chung**	
PLO1	Hiểu và vận dụng kiến thức tự nhiên, toán học mô tả hiện tượng vật lý trong các nghiên cứu định tính và định lượng.	4,5
PLO6	Nhận biết sự cần thiết và khả năng học tập không ngừng nhằm nâng cao hiệu quả công việc khi có sự ra đời của các công nghệ mới, cũng như tham gia phát triển công nghệ bằng cách tham gia công việc nghiên cứu diễn giải và tận dụng dữ liệu thực nghiệm, kết hợp kiến thức và dữ liệu để giải quyết các bài toán kỹ thuật xây dựng đặt trưng.	4,5
PLO7	Khả năng giao tiếp chuyên ngành với đồng nghiệp cùng ngành và với cộng động, với các hình thức giao tiếp khác nhau (nói, viết …)	4,5
PLO10	Khả năng sử dụng kỹ thuật, kỹ năng và công cụ hiện đại trong thực hành, bao gồm xác định nhiệm vụ của kỹ sư xây dựng, phân tích, khái quát và xây dựng vấn đề, cùng với khả năng phát triển nguyên	4,5

	lý, kế hoạch và phương pháp chứng minh và dự đoán (ví dụ: phân tích ổn định, hiệu năng, bảo vệ tiếng ồn, phòng chống lũ lụt và cung ứng nguồn nước).	
PLO11	Khả năng sử dụng tiếng Anh kỹ thuật và giao tiếp thông thường.	
5.	**Thái độ**	
PLO4	Nhận thức về trách nhiệm nghề nghiệp và đạo đức của kỹ sư xây dựng; khả năng đưa ra các quyết định hợp lý dựa trên đạo đức, suy nghĩ chín chắn để tìm ra các giải pháp sáng tạo và hiệu quả cho các vấn đề định tính và định lượng giữa các bộ phận.	4,5
PLO6	Nhận biết sự cần thiết và khả năng học tập không ngừng nhằm nâng cao hiệu quả công việc khi có sự ra đời của các công nghệ mới, cũng như tham gia phát triển công nghệ bằng cách tham gia công việc nghiên cứu diễn giải và tận dụng dữ liệu thực nghiệm, kết hợp kiến thức và dữ liệu để giải quyết các bài toán kỹ thuật xây dựng đặt trưng.	4,5

Các chuẩn đầu ra được đo bằng thang đo Bloom hiệu chỉnh gồm sáu cấp độ: Nhớ (1) - Hiểu (2) – Vận dụng (3) – Phân tích (4) – Đánh giá (5) – Sáng tạo (6). Các chuẩn đầu ra ở mức 4.5 nằm ở vị thế trung gian giữa mức Phân tích và Đánh giá, hàm ý là người học có khả năng phân tích nhưng nhưng chưa đạt tới mức độ toàn diện để làm cơ sở cho hoạt động đánh giá.

5. Ma trận giữa mục tiêu đào tạo và chuẩn đầu ra

Bảng 2. Mối quan hệ giữa CĐR của CTĐT và mục tiêu đào tạo

	PLOs(1)	**POs(2)**		
		PO1	**PO2**	**PO3**
Kiến thức	PLO 1	x		
	PLO 2	x		
	PLO 3		x	x
	PLO 6	x	x	
	PLO 8		x	
	PLO 9		x	
Kỹ năng	PLO 5			x
	PLO 7			x
	PLO 10	x	x	
Tự chủ và trách nhiệm	PLO 4			x
	PLO 11			x

6. Quy trình đào tạo, điều kiện tốt nghiệp

Căn cứ Quyết định số 1342/QĐ-ĐHQG ngày 30 tháng 9 năm 2022 của Giám đốc Đại học Quốc gia Thành phố Hồ Chí Minh về việc ban hành Quy chế đào tạo trình độ đại học.

Căn cứ Quyết định số 719/QĐ-ĐHQT ngày 06 tháng 12 năm 2021 của Hiệu trưởng trường Đại học Quốc tế về việc ban hành Quy chế đào tạo trình độ đại học theo hệ thống tín chỉ tại trường Đại học Quốc tế.

7. Thang điểm (theo thang điểm chính thức của trường)

Trường quy định thang điểm đánh giá kết quả học tập của người học (Quy chế đào tạo trình độ đại học theo hệ thống tín chỉ tại trường Đại học Quốc tế)

Bảng 3: Thang điểm

Xếp loại	**Thang điểm 100**	**Thang điểm 10**	**Thang điểm 4**	**Thang điểm chữ**
Đạt				
Xuất sắc	90≤ ĐTBTL ≤ 100	9,0 ≤ ĐTBTL ≤ 10	4,0	A^+
Giỏi	80≤ ĐTBTL < 90	8,0 ≤ ĐTBTL < 9,0	3,5	A
Khá	70≤ ĐTBTL < 80	7,0≤ ĐTBTL < 8,0	3,0	B^+
Trung bình khá	60≤ ĐTBTL < 70	6,0≤ ĐTBTL < 7,0	2,5	B
Trung bình	50≤ ĐTBTL < 60	5,0≤ ĐTBTL < 6,0	2,0	C
Không đạt				
Yếu	40 ≤ ĐTBTL < 50	4,0≤ ĐTBTL < 5,0	1,5	D^+
Kém	30 ≤ ĐTBTL < 40	3,0≤ ĐTBTL < 4,0	1,0	D
	ĐTBTL < 30	ĐTBTL < 3,0	0,0	F

8. Khối lượng kiến thức toàn khóa

Tổng số tín chỉ: 152 tín chỉ, trong đó phân bổ kiến thức như Bảng 4 (không bao gồm giáo dục thể chất và giáo dục quốc phòng):

Bảng 4. Cấu trúc chương trình đào tạo

TT	Các khối kiến thức(3)	Khối lượng	
		Số tín chỉ	%
I	**Khối kiến thức giáo dục đại cương**	**55**	**36.18**
	Các môn lý luận chính trị	11	7.24
	Khoa học tự nhiên	29	19.08
	Khoa học xã hội và nhân văn, quản trị và kinh tế	7	4.61
	Ngoại ngữ	8	5.26
	Giáo dục thể chất	0	0.0
	Giáo dục quốc phòng	0	0.0
II	**Khối kiến thức cơ sở ngành**	**42**	27.63
III	**Kiến thức chuyên ngành** - Bắt buộc: 27 tín chỉ - Tự chọn: 15 tín chỉ	**42**	27.63
IV	**Kiến thức bổ trợ**	0	0
V	**Thực tập, khóa luận/luận văn tốt nghiệp**	**13**	**8.55**
	Tổng cộng	**152**	**100**

9. Nội dung chương trình đào tạo

Bảng 5. Các môn học thuộc CTĐT

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
I	**Kiến thức giáo dục đại cương**							
I.1	***Lý luận chính trị***							
1	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
2	PE016IU	Kinh tế chính trị Mác-Lênin	Political Economics of Marxism and Leninism	Bắt buộc	2	2	0	

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
3	PE017IU	Chủ nghĩa xã hội khoa học	Scientific Socialism	Bắt buộc	2	2	0	
4	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
5	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
6	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
	Tổng cộng				***11***	***11***	***0***	
I.2	***Toán - Tin học - Khoa học tự nhiên***							
7	MA001IU	Toán 1	Calculus 1	Bắt buộc	4	4	0	
8	MA003IU	Toán 2	Calculus 2	Bắt buộc	4	4	0	
9	MA024IU	Phương trình vi phân	Differential Equations	Bắt buộc	4	4	0	
10	CE215IU	Đại số tuyến tính	Applied Linear Algebra	Bắt buộc	2	2	0	
11	CEI216U	Xác suất thống kê	Probability and Statistics	Bắt buộc	3	3	0	
12	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	
13	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	
14	PH015IU	Vật lý 3	Physics 3	Bắt buộc	3	3	0	
15	PH016IU	Thí nghiệm vật lý 3	Physics 3 Laboratory	Bắt buộc	1	0	1	
16	CH011IU	Hóa học cho kĩ sư	Chemistry for Engineer	Bắt buộc	3	3	0	
17	CH012IU	Thực hành hóa học	Chemistry Laboratory	Bắt buộc	1	0	1	
	Tổng cộng				***29***	***27***	***2***	
I.3	***Khoa học xã hội - Nhân văn - Nghệ thuật, Quản trị và Kinh tế***							

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
18	PE022IU	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking	Bắt buộc	3	3	0	
19	CE100IU	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	Bắt buộc	1	0	1	
	Tổng cộng				***7***	***7***	***0***	
I.4	***Ngoại ngữ***							
20	EN007IU	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1	Bắt buộc	2	2	0	
21	EN008IU	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1	Bắt buộc	2	2	0	
22	EN011IU	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2	Bắt buộc	2	2	0	
23	EN012IU	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2	Bắt buộc	2	2	0	
	Tổng cộng				***8***	***8***	***0***	
I.5	***Giáo dục thể chất***							
24	PT001IU	Giáo dục thể chất 1	Physical Training 1	Bắt buộc	3	0	3	
25	PT002IU	Giáo dục thể chất 2	Physical Training 2	Bắt buộc	3	0	3	
	Tổng cộng				***6***	***0***	***6***	
II	**Kiến thức chuyên nghiệp**							
II.1	***Kiến thức cơ sở***							
26	CE102IU	Tin học cho kỹ sư	Introduction to Computing for Engineers	Bắt buộc	3	3	0	
27	CE213IU	Phương pháp tính	Computational Methods for Civil Engineering	Bắt buộc	3	3	0	PTN Máy tính

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
		trong xây dựng						
28	CE101IU	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	Bắt buộc	3	3	1	PTN Máy tính
29	CE217IU	Trí tuệ nhân tạo trong kỹ thuật và quản lý xây dựng	Artificial Intelligence in Civil Engineering and Construction Management	Bắt buộc	3	3	0	
30	CE103IU	Vẽ và thiết kế với sự hỗ trợ của máy tính	Computer-Aided Design and Drafting	Bắt buộc	3	3	0	
31	CE104IU	Thực hành CADD	Computer-Aided Design and Drafting Practice	Bắt buộc	1	0	1	
32	CE201IU	Sức bền vật liệu 1	Mechanics of Materials 1	Bắt buộc	2	2	0	
33	CE208IU	Sức bền vật liệu 2	Mechanics of Materials 2	Bắt buộc	2	2	0	
34	CE202IU	Thí nghiệm sức bền vật liệu	Mechanics of Materials Lab	Bắt buộc	1	0	1	
35	CE205IU	Cơ học chất lỏng	Fluid Mechanics	Bắt buộc	2	2	0	
36	CE206IU	Thực hành Cơ học chất lỏng	Fluid Mechanics Lab	Bắt buộc	1	0	1	
37	CE211IU	Thủy lực thủy văn	Hydrology-Hydraulics	Bắt buộc	3	3	0	
38	CE306IU	Cấp thoát nước	Water Supply and Sewerage	Bắt buộc	3	3	1	
39	CE210IU	Vật liệu xây dựng	Construction Materials	Bắt buộc	3	3	0	
40	CE214IU	Kiến trúc dân dụng	Civil Architecture	Bắt buộc	2	2	0	
41	CE307IU	Trắc địa	Surveying	Bắt buộc	2	2		

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
42	CE308IU	Thực tập trắc địa	Surveying Practice	Bắt buộc	1	0	1	
43	CE302IU	Cơ học đất	Soil Mechanics	Bắt buộc	3	3		
44	CE303IU	Thực hành Cơ học đất	Soil Mechanics Laboratory	Bắt buộc	1	0	1	
	Tổng cộng				***42***	***35***	***7***	
II.2	***Kiến thức chuyên ngành chung (bắt buộc)***							
45	CE309IU	Nền móng	Foundation Engineering	Bắt buộc	3	3	0	
46	CE209IU	Cơ học Kết cấu 1	Structural Analysis 1	Bắt buộc	2	2	0	
47	CE301IU	Cơ học Kết cấu 2	Structural Analysis 2	Bắt buộc	3	3	0	
48	CE304IU	Bê tông cốt thép 1	Reinforced concrete 1	Bắt buộc	3	3	0	
49	CE310IU	Bê tông cốt thép 2	Reinforced Concrete 2	Bắt buộc	3	3	0	
50	CE305IU	Kết cấu thép	Steel Structures	Bắt buộc	3	3	0	
51	CE311IU	Kỹ thuật thi công	Construction Engineering	Bắt buộc	3	3	0	
52	CE401IU	Quản lý xây dựng	Construction Management	Bắt buộc	3	3	0	
53	CE312IU	Đồ án thép	Steel Structure Project	Bắt buộc	1	0	1	
54	CE313IU	Đồ án bêtông cốt thép	Reinforced Concrete Project	Bắt buộc	1	0	1	
55	CE402IU	Đồ án nền móng	Foundation Project	Bắt buộc	1	0	1	
56	CE403IU	Đồ án kỹ thuật thi công	Construction Project	Bắt buộc	1	0	1	
	Tổng cộng				***27***	***23***	***4***	
II.3	***Kiến thức chuyên ngành (tự chọn)***							
	II.3.1 ***Kiến thức chuyên ngành kỹ thuật xây dựng:*** Tự chọn **3 môn** trong các môn học sau (CE elective)							

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
57	CE404IU	Động lực học công trình	Dynamics of Structures	Tự chọn	3	3	0	
58	CE405IU	Công trình thủy	Hydraulics Structures	Tự chọn	3	3	0	
59	CE407IU	Nhà nhiều tầng	Tall Buildings	Tự chọn	3	3	0	
60	CE406IU	Thiết kế cầu	Bridge Engineering	Tự chọn	3	3	0	
61	CM310IU	Hệ thống thông tin xây dựng	Building Information Management	Tự chọn	3	3	0	
62	CE412IU	Trí tuệ nhân tạo nâng cao trong kỹ thuật và quản lý xây dựng	Advanced Artificial Intelligence in Civil Engineering and Construction Management	Tự chọn	3	3	0	
63	CE413IU	Hệ thống thông tin địa lý	GIS Applications in Civil Engineering	Tự chọn	3	3	0	
64	CE414IU	Quản lý dự án xây dựng	Construction Project Management	Tự chọn	3	3	0	
	II.3.2 Tự chọn **2 môn** trong các môn học sau (IU elective)							
65	BA003IU	Nguyên lý Marketing	Principles of Marketing	Tự chọn	3	3	0	
66	BA006IU	Giao tiếp trong kinh doanh	Business Communication	Tự chọn	3	3	0	
67	BA020IU	Đạo đức kinh doanh	Business Ethics	Tự chọn	3	3	0	
68	BA115IU	Dẫn nhập quản trị kinh doanh	Introduction to Business Administration	Tự chọn	3	3	0	
69	BA116IU	Dẫn nhập khoa học xã hội	Introduction to Social Science	Tự chọn	3	3	0	

STT	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			PTN
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
70	BA117IU	Dẫn nhập kinh tế vi mô	Introduction to Microeconomics	Tự chọn	3	3	0	
71	BA118IU	Nhập môn tâm lý học	Introduction to Psychology	Tự chọn	3	3	0	
72	BA119IU	Dẫn nhập kinh tế vĩ mô	Introduction to Macroeconomics	Tự chọn	3	3	0	
73	BA120IU	Kỹ năng vi tính kinh doanh	Business Computing Skills	Tự chọn	3	3	0	
74	BA123IU	Quản trị học	Principles of Management	Tự chọn	3	3	0	
75	BA130IU	Hành vi tổ chức	Organizational Behavior	Tự chọn	3	3	0	
76	BA169IU	Hệ thống thông tin quản lý	Management Information Systems	Tự chọn	3	3	0	
77	IS019IU	Quản trị sản xuất	Production Management	Tự chọn	3	3	0	
78	IS026IU	Quản lý dự án	Project Management	Tự chọn	3	3	0	
79	IT063IU	Mô hình lý thuyết trong tính toán	Theoretical Models in Computing	Tự chọn	4	4	0	
80	IT091IU	Mạng máy tính	Computer Networks	Tự chọn	4	4	0	
81	IT094IU	Hệ thống thông tin quản lý	Information System Management	Tự chọn	4	4	0	
V	**Thực tập, khóa luận/luận văn tốt nghiệp**							
82	CE314IU	Thực tập tốt nghiệp	Internship	Bắt buộc	3	0	3	
83	CE420IU	Đồ án tốt nghiệp	Graduation Thesis	Bắt buộc	10	0	10	
	Tổng số (tín chỉ)				**13**	**0**	**13**	

10. Dự kiến kế hoạch giảng dạy *(phân bổ các môn học theo từng học kỳ)*

Tùy vào trình độ tiếng Anh của người học đạt trình độ AE1, IE2, IE1 và IE0, kế hoạch giảng dạy các môn học được cụ thể tương ứng được trình bày trong các Bảng 6, Bảng 7, Bảng 8 và Bảng 9.

10.1. Trình độ AE1

Bảng 6. Kế hoạch giảng dạy đối với người học đạt trình độ AE1

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
HKI (19 tín chỉ)	EN007IU	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1	Bắt buộc	2	2	0	
	EN008IU	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1	Bắt buộc	2	2	0	
	MA001IU	Toán 1	Calculus 1	Bắt buộc	4	4	0	
	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	
	CH011IU	Hóa học cho kĩ sư	Chemistry for Engineer	Bắt buộc	3	3	0	
	CE101IU	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	Bắt buộc	3	3	1	
	PT001IU	Giáo dục thể chất 1	Physical Training 1	Bắt buộc	3	0	3	
HKII (18 tín chỉ)	EN011IU	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2	Bắt buộc	2	2	0	
	EN012IU	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2	Bắt buộc	2	2	0	
	CE100IU	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	Bắt buộc	1	0	1	
	MA003IU	Toán 2	Calculus 2	Bắt buộc	4	4	0	Toán 1 (HT)
	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	Vật lý 1 (HT)
	CH012IU	Thực hành hóa học	Chemistry Laboratory	Bắt buộc	1	0	1	Hóa học cho kĩ sư (HT)
	CE102IU	Tin học cho kỹ sư	Introduction to Computing for Engineers	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PT002IU	Giáo dục thể chất 2	Physical Training 2	Bắt buộc	3	0	3	
HK Hè 1 (8 tín chỉ)	PH015IU	Vật lý 3	Physics 3	Bắt buộc	3	3	0	Vật lý 2 (HT) Thí nghiệm vật lý 3 (SH)
	PH016IU	Thí nghiệm vật lý 3	Physics 3 Laboratory	Bắt buộc	1	0	1	Vật lý 3 (SH)
	MA024IU	Phương trình vi phân	Differential Equations	Bắt buộc	4	4	0	Toán 2 (HT)
HKIII (18 tín chỉ)	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
	PE016IU	Kinh tế chính trị Mác-Lênin	Political Economics of Marxism and Leninism	Bắt buộc	2	2	0	
	CE103IU	CADD	Computer-Aided Design and Drafting	Bắt buộc	3	3	0	Thực hành CADD (SH)
	CE104IU	Thực hành CADD	Computer-Aided Design and Drafting Practice	Bắt buộc	1	0	1	CADD (SH)
	CE201IU	Sức bền vật liệu 1	Mechanics of Materials 1	Bắt buộc	2	2	0	Cơ lý thuyết – Tĩnh học (HT)
	CE202IU	Thí nghiệm sức bền vật liệu	Mechanics of Materials Lab	Bắt buộc	1	0	1	Sức bền vật liệu 1 (SH)
	CE210IU	Vật liệu xây dựng	Construction Materials	Bắt buộc	3	3	0	
	CE213IU	Phương pháp tính trong xây dựng	Computational Methods for Civil Engineering	Bắt buộc	3	3	0	
HKIV (16 tín chỉ)	PE017IU	Chủ nghĩa xã hội khoa học	Scientific Socialism	Bắt buộc	2	2	0	Triết học Mác-Lênin (HT), Kinh tế chính trị Mác-Lênin (HT)
	CE208IU	Sức bền vật liệu 2	Mechanics of Materials 2	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	CE209IU	Cơ học Kết cấu 1	Structural Analysis 1	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE205IU	Cơ học chất lỏng	Fluid Mechanics	Bắt buộc	2	2	0	Thực hành Cơ học chất lỏng (SH)
	CE206IU	Thực hành Cơ học chất lỏng	Fluid Mechanics Lab	Bắt buộc	1	0	1	Cơ học chất lỏng (SH)
	CE214IU	Kiến trúc dân dụng	Civil Architecture	Bắt buộc	2	2	0	
	CEI216U	Xác suất thống kê	Probability and Statistics	Bắt buộc	3	3	0	
	CE215IU	Đại số tuyến tính	Applied Linear Algebra	Bắt buộc	2	2	0	
HK Hè 2	MP001IU	Giáo dục quốc phòng	Military Training	Bắt buộc				
HKV (16 tín chỉ)	CE301IU	Cơ học Kết cấu 2	Structural Analysis 2	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE302IU	Cơ học đất	Soil Mechanics	Bắt buộc	3	3	0	Sức bền vật liệu 1 (HT)
	CE303IU	Thực hành Cơ học đất	Soil Mechanics Laboratory	Bắt buộc	1	0	1	Cơ học đất (SH)
	CE304IU	Bê tông cốt thép 1	Reinforced concrete 1	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE305IU	Kết cấu thép	Steel Structures	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE217IU	Trí tuệ nhân tạo trong Kỹ thuật và Quản lý Xây dựng	AI	Bắt buộc	3	3	0	
HK VI (16 tín chỉ)	CE307IU	Trắc địa	Surveying	Bắt buộc	2	2	0	
	CE308IU	Thực tập trắc địa	Surveying Practice	Bắt buộc	1	0	1	
	CE309IU	Nền móng	Foundation Engineering	Bắt buộc	3	3	0	Cơ học đất (HT)
	CE310IU	Bê tông cốt thép 2	Reinforced Concrete 2	Bắt buộc	3	3	0	Bê tông cốt thép 1 (HT)
	CE313IU	Đồ án bêtông cốt thép	Reinforced Concrete Project	Bắt buộc	1	0	1	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	CE312IU	Đồ án thép	Steel Structure Project	Bắt buộc	1	0	1	Kết cấu thép (HT)
	CE311IU	Kỹ thuật thi công	Construction Engineering	Bắt buộc	3	3	0	
	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
HK Hè 3 (3 tín chỉ)	CE314IU	Thực tập tốt nghiệp	Internship	Bắt buộc	3	0	3	
HK VII (17 tín chỉ)	CE401IU	Quản lý xây dựng	Construction Management	Bắt buộc	3	3	0	
	CE211IU	Thủy lực thủy văn	Hydrology-Hydraulics	Bắt buộc	3	3	0	Cơ học chất lỏng (HT)
	CE402IU	Đồ án nền móng	Foundation Project	Bắt buộc	1	0	1	Nền móng (HT)
	CE403IU	Đồ án kỹ thuật thi công	Construction Project	Bắt buộc	1	0	1	Kỹ thuật thi công (HT)
	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
HK VIII (17 tín chỉ)		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
	CE306IU	Cấp thoát nước	Water Supply and Sewerage	Bắt buộc	3	3	1	Hydrology
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
	PE022IU	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
HK IX (10 tín chỉ)	CE420IU	Luận văn tốt nghiệp	Graduation Thesis	Bắt buộc	10	0	10	
	Tổng				**158**			

***Tổng số tín chỉ: 152 tín chỉ (không bao gồm giáo dục thể chất và tiếng Anh tăng cường)**

10.2. Trình độ IE2

Bảng 7. Kế hoạch giảng dạy đối với người học đạt trình độ IE2

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
HKI (22 tín chỉ)	ENTP02	Tiếng Anh tăng cường 2	IE2	Bắt buộc	13	13	0	
	MA001IU	Toán 1	Calculus 1	Bắt buộc	4	4	0	
	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	
	PT001IU	Giáo dục thể chất 1	Physical Training 1	Bắt buộc	3	0	3	
HKII (19 tín chỉ)	EN007IU	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1	Bắt buộc	2	2	0	
	EN008IU	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1	Bắt buộc	2	2	0	
	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	Vật lý 1 (HT)
	CH011IU	Hóa học cho kĩ sư	Chemistry for Engineer	Bắt buộc	3	3	0	
	CE101IU	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	Bắt buộc	3	3	1	
	CE102IU	Tin học cho kỹ sư	Introduction to Computing for Engineers	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	MA003IU	Toán 2	Calculus 2	Bắt buộc	4	4	0	Toán 1 (HT)
HK Hè 1 (10 tín chỉ)	EN011IU	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2	Bắt buộc	2	2	0	
	EN012IU	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2	Bắt buộc	2	2	0	
	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
	PH015IU	Vật lý 3	Physics 3	Bắt buộc	3	3	0	Vật lý 2 (HT) Thí nghiệm vật lý 3 (SH)
HKIII (17 tín chỉ)	PH016IU	Thí nghiệm vật lý 3	Physics 3 Laboratory	Bắt buộc	1	0	1	Vật lý 3 (SH)
	MA024IU	Phương trình vi phân	Differential Equations	Bắt buộc	4	4	0	Toán 2 (HT)
	CH012IU	Thực hành hóa học	Chemistry Laboratory	Bắt buộc	1	0	1	
	CE103IU	CADD	Computer-Aided Design and Drafting	Bắt buộc	3	3	0	Thực hành CADD (SH)
	CE104IU	Thực hành CADD	Computer-Aided Design and Drafting Practice	Bắt buộc	1	0	1	CADD (SH)
	CE201IU	Sức bền vật liệu 1	Mechanics of Materials 1	Bắt buộc	2	2	0	Cơ lý thuyết – Tĩnh học (HT)
	CE202IU	Thí nghiệm sức bền vật liệu	Mechanics of Materials Lab	Bắt buộc	1	0	1	Sức bền vật liệu 1 (SH)
	PT002IU	Giáo dục thể chất 2	Physical Training 2	Bắt buộc	3	0	3	
	CE100IU	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	Bắt buộc	1	0	1	
HKIV (19 tín chỉ)	CE213IU	Phương pháp tính trong xây dựng	Computational Methods for Civil Engineering	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PE016IU	Kinh tế chính trị Mác-Lênin	Political Economics of Marxism and Leninism	Bắt buộc	2	2	0	
	CE208IU	Sức bền vật liệu 2	Mechanics of Materials 2	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE209IU	Cơ học Kết cấu 1	Structural Analysis 1	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE205IU	Cơ học chất lỏng	Fluid Mechanics	Bắt buộc	2	2	0	Thực hành Cơ học chất lỏng (SH)
	CE206IU	Thực hành Cơ học chất lỏng	Fluid Mechanics Lab	Bắt buộc	1	0	1	Cơ học chất lỏng (SH)
	CE214IU	Kiến trúc dân dụng	Civil Architecture	Bắt buộc	2	2	0	
	CE216IU	Xác suất thống kê	Probability and Statistics	Bắt buộc	3	3	0	
	CE215IU	Đại số tuyến tính	Applied Linear Algebra	Bắt buộc	2	2	0	
HK Hè 2	MP001IU	Giáo dục quốc phòng	Military Training	Bắt buộc				
HKV (19 tín chỉ)	CE301IU	Cơ học Kết cấu 2	Structural Analysis 2	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE210IU	Vật liệu xây dựng	Construction Materials	Bắt buộc	3	3	0	
	CE302IU	Cơ học đất	Soil Mechanics	Bắt buộc	3	3	0	Sức bền vật liệu 1 (HT)
	CE303IU	Thực hành Cơ học đất	Soil Mechanics Laboratory	Bắt buộc	1	0	1	Cơ học đất (SH)
	CE304IU	Bê tông cốt thép 1	Reinforced concrete 1	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE305IU	Kết cấu thép	Steel Structures	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE217IU	Trí tuệ nhân tạo trong Kỹ thuật và Quản lý Xây dựng	AI	Bắt buộc	3	3	0	
HK VI (18 tín chỉ)	PE017IU	Chủ nghĩa xã hội khoa học	Scientific Socialism	Bắt buộc	2	2	0	Triết học Mác-Lênin (HT), Kinh tế chính trị Mác-Lênin (HT)

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	CE307IU	Trắc địa	Surveying	Bắt buộc	2	2	0	
	CE308IU	Thực tập trắc địa	Surveying Practice	Bắt buộc	1	0	1	
	CE309IU	Nền móng	Foundation Engineering	Bắt buộc	3	3	0	Cơ học đất (HT)
	CE310IU	Bê tông cốt thép 2	Reinforced Concrete 2	Bắt buộc	3	3	0	Bê tông cốt thép 1 (HT)
	CE313IU	Đồ án bêtông cốt thép	Reinforced Concrete Project	Bắt buộc	1	0	1	
	CE312IU	Đồ án thép	Steel Structure Project	Bắt buộc	1	0	1	Kết cấu thép (HT)
	CE311IU	Kỹ thuật thi công	Construction Engineering	Bắt buộc	3	3	0	
	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
HK Hè 3 (3 tín chỉ)	CE314IU	Thực tập tốt nghiệp	Internship	Bắt buộc	3	0	3	
HK VII (17 tín chỉ)	CE401IU	Quản lý xây dựng	Construction Management	Bắt buộc	3	3	0	
	CE211IU	Thủy lực thủy văn	Hydrology-Hydraulics	Bắt buộc	3	3	0	Cơ học chất lỏng (HT)
	CE402IU	Đồ án nền móng	Foundation Project	Bắt buộc	1	0	1	Nền móng (HT)
	CE403IU	Đồ án kỹ thuật thi công	Construction Project	Bắt buộc	1	0	1	Kỹ thuật thi công (HT)
	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
HK VIII (17 tín chỉ)		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
	CE306IU	Cấp thoát nước	Water Supply and Sewerage	Bắt buộc	3	3	1	Hydrology
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
	PE022IU	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking	Bắt buộc	3	3	0	
HK IX (10 tín chỉ)	CE420IU	Luận văn tốt nghiệp	Graduation Thesis	Bắt buộc	10	0	10	
	Tổng				**171**			

***Tổng số tín chỉ: 152 tín chỉ (không bao gồm giáo dục thể chất và tiếng Anh tăng cường)**

10.3. Trình độ IE1

Bảng 8. Kế hoạch giảng dạy đối với người học đạt trình độ IE1

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
HKI (30 tín chỉ)	ENTP01	Tiếng Anh tăng cường 1	IE1	Bắt buộc	17	17	0	
	ENTP02	Tiếng Anh tăng cường 2	IE2	Bắt buộc	13	13	0	
HKII (20 tín chỉ)	EN007IU	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1	Bắt buộc	2	2	0	
	EN008IU	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1	Bắt buộc	2	2	0	
	MA001IU	Toán 1	Calculus 1	Bắt buộc	4	4	0	
	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	
	CE100IU	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	Bắt buộc	1	0	1	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PT001IU	Giáo dục thể chất 1	Physical Training 1	Bắt buộc	3	0	3	
	CE101IU	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	Bắt buộc	3	3	1	
	CE102IU	Tin học cho kỹ sư	Introduction to Computing for Engineers	Bắt buộc	3	3	0	
HK Hè 1 (11 tín chỉ)	MA003IU	Toán 2	Calculus 2	Bắt buộc	4	4	0	Toán 1 (HT)
	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
	EN011IU	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2	Bắt buộc	2	2	0	
	EN012IU	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2	Bắt buộc	2	2	0	
HKIII (20 tín chỉ)	MA024IU	Phương trình vi phân	Differential Equations	Bắt buộc	4	4	0	Toán 2 (HT)
	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	Vật lý 1 (HT)
	CH011IU	Hóa học cho kĩ sư	Chemistry for Engineer	Bắt buộc	3	3	0	
	CH012IU	Thực hành hóa học	Chemistry Laboratory	Bắt buộc	1	0	1	
	CE103IU	CADD	Computer-Aided Design and Drafting	Bắt buộc	3	3	0	Thực hành CADD (SH)
	CE104IU	Thực hành CADD	Computer-Aided Design and Drafting Practice	Bắt buộc	1	0	1	CADD (SH)
	CE201IU	Sức bền vật liệu 1	Mechanics of Materials 1	Bắt buộc	2	2	0	Cơ lý thuyết – Tĩnh học (HT)
	CE202IU	Thí nghiệm sức bền vật liệu	Mechanics of Materials Lab	Bắt buộc	1	0	1	Sức bền vật liệu 1 (SH)
	PT002IU	Giáo dục thể chất 2	Physical Training 2	Bắt buộc	3	0	3	
	PH015IU	Vật lý 3	Physics 3	Bắt buộc	3	3	0	Vật lý 2 (HT)

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
								Thí nghiệm vật lý 3 (SH)
HKIV (18 tín chỉ)	PH016IU	Thí nghiệm vật lý 3	Physics 3 Laboratory	Bắt buộc	1	0	1	Vật lý 3 (SH)
	CE208IU	Sức bền vật liệu 2	Mechanics of Materials 2	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE209IU	Cơ học Kết cấu 1	Structural Analysis 1	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE205IU	Cơ học chất lỏng	Fluid Mechanics	Bắt buộc	2	2	0	Thực hành Cơ học chất lỏng (SH)
	CE206IU	Thực hành Cơ học chất lỏng	Fluid Mechanics Lab	Bắt buộc	1	0	1	Cơ học chất lỏng (SH)
	CE214IU	Kiến trúc dân dụng	Civil Architecture	Bắt buộc	2	2	0	
	CE213IU	Phương pháp tính trong xây dựng	Computational Methods for Civil Engineering	Bắt buộc	3	3	0	
	CE215IU	Đại số tuyến tính	Applied Linear Algebra	Bắt buộc	2	2	0	
HK Hè 2	MP001IU	Giáo dục quốc phòng	Military Training	Bắt buộc				
HKV (21 tín chỉ)	CE301IU	Cơ học Kết cấu 2	Structural Analysis 2	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	PE016IU	Kinh tế chính trị Mác-Lênin	Political Economics of Marxism and Leninism	Bắt buộc	2	2	0	
	CE210IU	Vật liệu xây dựng	Construction Materials	Bắt buộc	3	3	0	
	CE302IU	Cơ học đất	Soil Mechanics	Bắt buộc	3	3	0	Sức bền vật liệu 1 (HT)
	CE303IU	Thực hành Cơ học đất	Soil Mechanics Laboratory	Bắt buộc	1	0	1	Cơ học đất (SH)
	CE304IU	Bê tông cốt thép 1	Reinforced concrete 1	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE305IU	Kết cấu thép	Steel Structures	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE216IU	Xác suất thống kê	Probability and Statistics	Bắt buộc	3	3	0	
	PE017IU	Chủ nghĩa xã hội khoa học	Scientific Socialism	Bắt buộc	2	2	0	Triết học Mác-Lênin

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
								(HT), Kinh tế chính trị Mác-Lênin (HT)
HK VI (19 tín chỉ)	CE307IU	Trắc địa	Surveying	Bắt buộc	2	2	0	
	CE308IU	Thực tập trắc địa	Surveying Practice	Bắt buộc	1	0	1	
	CE309IU	Nền móng	Foundation Engineering	Bắt buộc	3	3	0	Cơ học đất (HT)
	CE310IU	Bê tông cốt thép 2	Reinforced Concrete 2	Bắt buộc	3	3	0	Bê tông cốt thép 1 (HT)
	CE313IU	Đồ án bêtông cốt thép	Reinforced Concrete Project	Bắt buộc	1	0	1	
	CE312IU	Đồ án thép	Steel Structure Project	Bắt buộc	1	0	1	Kết cấu thép (HT)
	CE311IU	Kỹ thuật thi công	Construction Engineering	Bắt buộc	3	3	0	
	CE217IU	Trí tuệ nhân tạo trong Kỹ thuật và Quản lý Xây dựng	AI	Bắt buộc	3	3	0	
HK Hè 3 (3 tín chỉ)	CE314IU	Thực tập tốt nghiệp	Internship	Bắt buộc	3	0	3	
HK VII (19 tín chỉ)	CE401IU	Quản lý xây dựng	Construction Management	Bắt buộc	3	3	0	
	CE211IU	Thủy lực thủy văn	Hydrology-Hydraulics	Bắt buộc	3	3	0	Cơ học chất lỏng (HT)
	CE402IU	Đồ án nền móng	Foundation Project	Bắt buộc	1	0	1	Nền móng (HT)
	CE403IU	Đồ án kỹ thuật thi công	Construction Project	Bắt buộc	1	0	1	Kỹ thuật thi công (HT)
	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	

Học kỳ	Mã MH	Tên môn học (MH)		Loại MH (bắt buộc/tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng Việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
HK VIII (17 tín chỉ)	CE306IU	Cấp thoát nước	Water Supply and Sewerage	Bắt buộc	3	3	1	Hydrology
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
	PE022IU	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking	Bắt buộc	3	3	0	
HK IX (10 tín chỉ)	CE420IU	Luận văn tốt nghiệp	Graduation Thesis	Bắt buộc	10	0	10	
	Tổng				**188**			

***Tổng số tín chỉ: 152 tín chỉ (không bao gồm giáo dục thể chất và tiếng Anh tăng cường)**

10.4. Trình độ IE0

Bảng 9. Kế hoạch giảng dạy đối với người học đạt trình độ IE0

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
HK I (34)	ENTP00	Tiếng Anh tăng cường 0	IE0	Bắt buộc	17	17	0	
	ENTP01	Tiếng Anh tăng cường 1	IE1	Bắt buộc	17	17	0	
	Tổng				34	34	0	
HK II (19)	ENTP02	Tiếng Anh tăng cường 2	IE2	Bắt buộc	13	13	0	
	MA001IU	Toán 1	Calculus 1	Bắt buộc	4	4	0	
	PH013IU	Vật lý 1	Physics 1	Bắt buộc	2	2	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PT001IU	Giáo dục thể chất 1	Physical Training 1	Bắt buộc	3	0	3	
	Tổng				19	19	0	
Hè I (8)	EN007IU	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1	Bắt buộc	2	2	0	
	EN008IU	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1	Bắt buộc	2	2	0	
	MA003IU	Toán 2	Calculus 2	Bắt buộc	4	4	0	Toán 1 (HT)
	Tổng				8	8	0	
HK III (18)	EN011IU	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2	Bắt buộc	2	2	0	Tiếng Anh chuyên ngành 1 (HT)
	EN012IU	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2	Bắt buộc	2	2	0	Tiếng Anh chuyên ngành 1 (HT)
	CE100IU	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	Bắt buộc	1	0	1	
	PE015IU	Triết học Mác-Lênin	Philosophy of Marxism and Leninism	Bắt buộc	3	3	0	
	PE016IU	Kinh tế chính trị Mác-Lênin	Political Economics of Marxism and Leninism	Bắt buộc	2	2	0	
	PH014IU	Vật lý 2	Physics 2	Bắt buộc	2	2	0	Vật lý 1 (HT)
	CH011IU	Hóa học cho kĩ sư	Chemistry for Engineer	Bắt buộc	3	3	0	
	CE101IU	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	Bắt buộc	3	3	1	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	PT002IU	Giáo dục thể chất 2	Physical Training 2	Bắt buộc	3	0	3	
	Tổng				18	16	2	
HK IV (19)	PH015IU	Vật lý 3	Physics 3	Bắt buộc	3	3	0	Vật lý 2 (HT) Thí nghiệm vật lý 3 (SH)
	PH016IU	Thí nghiệm vật lý 3	Physics 3 Laboratory	Bắt buộc	1	0	1	Vật lý 3 (SH)
	PE018IU	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party	Bắt buộc	2	2	0	
	PE019IU	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts	Bắt buộc	2	2	0	
	CE103IU	Vẽ và thiết kế với sự hỗ trợ của máy tính	Computer-Aided Design and Drafting	Bắt buộc	3	3	0	Thực hành CADD (SH)
	CE104IU	Thực hành CADD	Computer-Aided Design and Drafting Practice	Bắt buộc	1	0	1	Vẽ và thiết kế với sự hỗ trợ của máy tính (SH)
	MA024IU	Phương trình vi phân	Differential Equations	Bắt buộc	4	4	0	Toán 2 (HT)
	CE201IU	Sức bền vật liệu 1	Mechanics of Materials 1	Bắt buộc	2	2	0	Cơ lý thuyết – Tĩnh học (HT)
	CE202IU	Thí nghiệm sức bền vật liệu	Mechanics of Materials Lab	Bắt buộc	1	0	1	Sức bền vật liệu 1 (SH)
	Tổng				19	16	3	
Hè II	MP001IU	Quân sự	Military Training	Bắt buộc				
	Tổng							
HK V (19)								
	CE213IU	Phương pháp tính trong xây dựng	Computational Methods for	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
			Civil Engineering					
	CE208IU	Sức bền vật liệu 2	Mechanics of Materials 2	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE209IU	Cơ học Kết cấu 1	Structural Analysis 1	Bắt buộc	2	2	0	Sức bền vật liệu 1 (HT)
	CE205IU	Cơ học chất lỏng	Fluid Mechanics	Bắt buộc	2	2	0	Thực hành Cơ học chất lỏng (SH)
	CE206IU	Thực hành Cơ học chất lỏng	Fluid Mechanics Lab	Bắt buộc	1	0	1	Cơ học chất lỏng (SH)
	CE102IU	Tin học cho kỹ sư	Introduction to Computing for Engineers	Bắt buộc	3	3	0	
	CE214IU	Kiến trúc dân dụng	Civil Architecture	Bắt buộc	2	2	0	
	CEI216U	Xác suất thống kê	Probability and Statistics	Bắt buộc	3	3	0	
	CH012IU	Thực hành hóa học	Chemistry Laboratory	Bắt buộc	1	0	1	Hóa học cho kĩ sư (HT)
	Tổng				19	17	2	
HK VI (17)	CE215IU	Đại số tuyến tính	Applied Linear Algebra	Bắt buộc	2	2	0	
	CE301IU	Cơ học Kết cấu 2	Structural Analysis 2	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE302IU	Cơ học đất	Soil Mechanics	Bắt buộc	3	3	0	Sức bền vật liệu 1 (HT)
	CE303IU	Thực hành Cơ học đất	Soil Mechanics Laboratory	Bắt buộc	1	0	1	Cơ học đất (SH)
	CE304IU	Bê tông cốt thép 1	Reinforced concrete 1	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	CE305IU	Kết cấu thép	Steel Structures	Bắt buộc	3	3	0	Cơ học Kết cấu 1 (HT)
	PE017IU	Chủ nghĩa xã hội khoa học	Scientific Socialism	Bắt buộc	2	2	0	Triết học Mác-Lênin (HT), Kinh

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
								tế chính trị Mác-Lênin (HT)
	Tổng				17	16	1	
Hè III (3)	CE314IU	Thực tập tốt nghiệp	Internship	Bắt buộc	3	0	**HK hè III (3)**	CE314IU
	Tổng				3	0		
HK VII (17)	CE210IU	Vật liệu xây dựng	Construction Materials	Bắt buộc	3	3	0	
	CE211IU	Thủy lực thủy văn	Hydrology-Hydraulics	Bắt buộc	3	3	0	Cơ học chất lỏng (HT)
	CE309IU	Nền móng	Foundation Engineering	Bắt buộc	3	3	0	Cơ học đất (HT)
	CE310IU	Bê tông cốt thép 2	Reinforced Concrete 2	Bắt buộc	3	3	0	Bê tông cốt thép 1 (HT)
	CE312IU	Đồ án thép	Steel Structure Project	Bắt buộc	1	0	1	Kết cấu thép (HT)
	CE313IU	Đồ án bêtông cốt thép	Reinforced Concrete Project	Bắt buộc	1	0	1	
	PE021IU	Pháp luật đại cương	General Law	Bắt buộc	3	3	0	
	Tổng				17	15	2	
HK VIII (17)	CE307IU	Trắc địa	Surveying	Bắt buộc	2	2	0	
	CE308IU	Thực tập trắc địa	Surveying Practice	Bắt buộc	1	0	1	
	CE217IU	Trí tuệ nhân tạo trong kỹ thuật và quản lý xây dựng	Artificial Intelligence in Civil Engineering and Construction Management	Bắt buộc	3	3	0	
	CE311IU	Kỹ thuật thi công	Construction Engineering	Bắt buộc	3	3	0	

Học kỳ	Mã MH	Tên MH		Loại MH (bắt buộc/ tự chọn)	Tín chỉ			Môn học (Tiên quyết/ Trước/ Song hành)
		Tiếng việt	Tiếng Anh		Tổng cộng	Lý thuyết	Thực hành/ Thí nghiệm	
	CE306IU	Cấp thoát nước	Water Supply and Sewerage	Bắt buộc	3	3	1	Thủy lực thủy văn (HT)
	CE402IU	Đồ án nền móng	Foundation Project	Bắt buộc	1	0	1	Nền móng (HT)
	CE403IU	Đồ án kỹ thuật thi công	Construction Project	Bắt buộc	1	0	1	Kỹ thuật thi công (HT)
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
	Tổng				17	13	4	
HK IX (18)	CE401IU	Quản lý xây dựng	Construction Management	Bắt buộc	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
		Môn chuyên ngành tự chọn	CE Elective	Tự chọn	3	3	0	
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
		Môn tự chọn bổ trợ	IU Elective	Tự chọn	3	3	0	
	PE022IU	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking	Bắt buộc	3	3	0	
	Tổng				18	18	0	
HK X (10)	CE420IU	Đồ án tốt nghiệp	Graduation Thesis	Bắt buộc	10	0	10	
	Tổng				10	0	10	
	Tổng				199	166	33	

*Tổng số tín chỉ: 152 tín chỉ (không bao gồm giáo dục thể chất và tiếng Anh tăng cường)

11. Ma trận các môn học và chuẩn đầu ra (kỹ năng)

Mức độ đóng góp của các môn học vào chuẩn đầu ra của CTĐT ngành Kỹ thuật xây dựng được trình bày như Bảng 10.

Bảng 10. Đóng góp của các môn học vào CĐR của CTĐT

Học kỳ	Tên môn học (4)		Chuẩn đầu ra CTĐT (5)										
	Tiếng Việt	Tiếng Anh	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
I	Tiếng Anh chuyên ngành 1 (kỹ năng viết)	Writing AE1					M		M				M
	Tiếng Anh chuyên ngành 1 (kỹ năng nghe)	Listening AE1							M				M
	Toán 1	Calculus 1	M						M				M
	Vật lý 1	Physics 1	M						M	M			M
	Hóa học cho kĩ sư	Chemistry for Engineer	M						M				M
	Khái niệm ngành Kỹ thuật Xây dựng	Introduction to Civil Engineering	M	M	M	M			M				
	Cơ lý thuyết – Tĩnh học	Engineering Mechanics - Statics	M	M				M					
	Giáo dục thể chất 1	Physical Training 1											
II	Tiếng Anh chuyên ngành 2 (kỹ năng viết)	Writing AE2					M		M				M
	Tiếng Anh chuyên ngành 2 (kỹ năng nói)	Speaking AE2							M				M
	Toán 2	Calculus 2	M						M				M
	Triết học Mác-Lênin	Philosophy of Marxism and Leninism								M	M		
	Thực hành hóa học	Chemistry Laboratory	M						M				M
	Tin học cho kỹ sư	Introduction to Computing for Engineers	M	M								M	
	Vật lý 2	Physics 2	M						M	M			M
	Giáo dục thể chất 2	Physical Training 2											
Hè 1													
	Vật lý 3	Physics 3	M						M	M			M
	Thí nghiệm vật lý 3	Physics 3 Laboratory	M						M			M	M

Học kỳ	Tên môn học (4)		Chuẩn đầu ra CTĐT (5)										
	Tiếng Việt	Tiếng Anh	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
	Phương trình vi phân	Differential Equations)	M						M				M
III	Kinh tế chính trị Mác-Lênin	Political economics of Marxism and Leninism			M			M		M	M		
	Lịch sử Đảng Cộng sản Việt Nam	History of Vietnamese Communist Party								M	M		
	Vẽ và thiết kế với sự hỗ trợ của máy tính	Computer-Aided Design and Drafting (CADD)		H					H				M
	Thực hành CADD	Practice CADD				M						L	
	Sức bền vật liệu 1	Mechanics of Materials 1	M	M		M		M					
	Thí nghiệm sức bền vật liệu	Mechanics of Materials Laboratory		H			H						
	Phương pháp tính trong kỹ thuật XD	Computational Methods for Civil Engineering	H	H		H			M			H	
	Cơ học chất lỏng	Fluid Mechanics	H	H			M						M
	Thực hành Cơ học chất lỏng	Fluid Mechanics Laboratory		H				L	H				M
IV	Tư tưởng Hồ Chí Minh	Ho Chi Minh's Thoughts						M		M	M		
	Đại số tuyến tính	Applied Linear Algebra	M						M				M
	Cơ học Kết cấu 1	Structural Analysis 1	M	M								M	M
	Sức bền vật liệu 2	Mechanics of Materials 2	M	M		M		M					
	Vật liệu xây dựng	Construction Materials		M		L				L			L
	Kiến trúc dân dụng	Civil Architecture	M	M	L		L		H	M		H	M
	Xác suất thống kê	Probability and Statistics	M	M					M				M

Học kỳ	Tên môn học (4)		Chuẩn đầu ra CTĐT (5)										
	Tiếng Việt	Tiếng Anh	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
Hè 2		Military Training											
V	Cơ học Kết cấu 2	Structural Analysis 2	M	M								M	M
	Cơ học đất	Soil Mechanics	M	M				M				H	
	Thực hành Cơ học đất	Soil Mechanics Laboratory		H			H					H	H
	Bê tông cốt thép 1	Reinforced concrete 1	L	M								M	M
	Kết cấu thép	Steel Structures	M	M				M		M			
	Trí tuệ nhân tạo trong KTXD và QLXD	Artificial Intelligence in Civil Engineering and Construction Management											
VI	Chủ nghĩa xã hội khoa học	Scientific socialism						M		M			
	Trắc địa	Surveying		H			M					H	H
	Thực tập trắc địa	Surveying Practice		H			M					H	H
	Nền móng	Foundation Engineering	M	M				M				H	
	Bê tông cốt thép 2	Reinforced Concrete 2	L	M								M	M
	Đồ án thép	Steel Structure Project		M		M		M				M	
	Đồ án bêtông cốt thép	Reinforced Concrete Project					L	L					
	Kỹ thuật thi công	Construction Engineering	M	M								M	M
Hè 3	Thực tập tốt nghiệp	Summer Internship		M		H	H		M			H	M
VII	Quản lý xây dựng	Construction Management			M		M		H	M			H
	Thủy lực thủy văn	Hydrology-Hydraulics	M	H			M					H	H
	Cấp thoát nước	Water Supply and Sewerage					M	M				H	H
	Môn tự chọn CE	CE Elective		H					M		L	M	H

Học kỳ	Tên môn học (4)		Chuẩn đầu ra CTĐT (5)										
	Tiếng Việt	Tiếng Anh	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
	Đồ án nền móng	Foundation Project		M				M	M			H	
	Pháp luật đại cương	General Law											
	Đồ án kỹ thuật thi công	Construction Project	H						M			H	M
VIII	Môn tự chọn CE	CE Elective	L	M								M	M
	Môn tự chọn CE	CE Elective	M	M				M		M	M		
	Môn tự chọn IU	IU Free Elective											
	Môn tự chọn IU	IU Free Elective											
	Đạo đức nghề nghiệp và tư duy phản biện	Engineering Ethics and Critical Thinking				M	M						
IX	Đồ án tốt nghiệp	*GRADUATION THESIS*	H	H	H	L	L	L	H	M	H	H	L

12. Mô tả vắn tắt nội dung và khối lượng các môn học

12.1. Tên môn học: Triết học Mác-Lênin

Mã môn học: PE015IU

Số tín chỉ: 3 lý thuyết

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học cung cấp những nội dung cơ bản về thế giới quan và phương pháp luận của chủ nghĩa Mác-Lênin.

12.2. Tên môn học: Kinh tế chính trị Mác-Lênin

Mã môn học: PE016IU

Số tín chỉ: 2

Điều kiện: Môn học song hành: Triết học Mác-Lênin. Môn học tiên quyết: không

Mô tả nội dung môn học: Môn học cung cấp những nội dung cơ bản về các vấn đề như: Hàng hóa, thị trường và vai trò của các chủ thể trong nền kinh tế thị trường; Cạnh tranh và độc quyền trong nền kinh tế thị trường; Sản xuất giá trị thặng dư trong nền kinh tế thị trường; cạnh tranh và độc quyền trong nền kinh tế thị trường; kinh tế thị trường định hướng xã hội chủ nghĩa và các quan hệ lợi ích kinh tế ở Việt Nam; Công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế ở Việt Nam.

12.3. Tên môn học: Chủ nghĩa xã hội khoa học

Mã môn học: PE017IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Triết học Mác-Lênin, Kinh tế chính trị Mác-Lênin

Mô tả nội dung môn học: Môn học trang bị cho sinh viên những kiến thức cơ bản có hệ thống về Chủ nghĩa xã hội khoa học

12.4. Tên môn học: Lịch sử Đảng cộng sản Việt Nam

Mã môn học: PE018IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Triết học Mác-Lênin, Kinh tế chính trị Mác-Lênin, Chủ nghĩa xã hội khoa học

Mô tả nội dung môn học: Cung cấp những tri thức có tính hệ thống, cơ bản về sự ra đời của Đảng Cộng sản Việt Nam (1920-1930), sự lãnh đạo của Đảng đối với cách mạng Việt Nam trong thời kỳ đấu tranh giành chính quyền (1930-1945), trong hai cuộc khánh chiến chống thực dân Pháp và đế quốc Mỹ xâm lược (1945-1975), trong sự nghiệp xây dựng, bảo vệ tổ quốc thời kỳ cả nước quá độ lên chủ nghĩa xã hội, tiến hành công cuộc đổi mới (1975-2018).

12.5. Tên môn học: Tư tưởng Hồ Chí Minh

Mã môn học: PE019IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Triết học Mác-Lênin, Kinh tế chính trị Mác-Lênin, Chủ nghĩa xã hội khoa học

Mô tả nội dung môn học: Môn học trang bị cho sinh viên những kiến thức cơ bản về: Đối tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh; về cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; về độc lập dân tộc và chủ nghĩa xã hội; về Đảng Cộng sản và Nhà nước Việt Nam; về đại đoàn kết dân tộc và đoàn kết quốc tế; về văn hóa, đạo đức, con người.

12.6. Tên môn học: Pháp luật đại cương

Mã môn học: PE021IU

Số tín chỉ: 3 lý thuyết

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khóa học này cung cấp cho sinh viên kiến thức chung, các khái niệm cơ bản, nguyên tắc, các ngành pháp lý chính phục vụ nền tảng của hệ thống pháp luật Việt Nam. Trong suốt khóa học, sinh viên cũng sẽ được làm quen với ngôn ngữ pháp lý; tham gia vào tư duy phê phán; và tiếp xúc với các kỹ năng lý luận và giải quyết vấn đề pháp lý để phát triển khả năng của học sinh, ứng dụng chúng vào các tình huống thực tế.

12.7. Tên môn học: Toán 1

Mã môn học: MA001IU

Số tín chỉ: 4

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Hàm số, Giới hạn, Tính liên tục, Đạo hàm, Đạo hàm cho các hàm cơ bản, quy tắc tính đạo hàm, Ứng dụng của đạo hàm, Quy tắc L'hospitail, Tối ưu, Phương

pháp Newton, Tích phân, Tích phân xác định, Các định lý cơ bản của giải tích, kỹ thuật tính tích phân.

12.8. Tên môn học: Toán 2

Mã môn học: MA003IU

Số tín chỉ: 4

Điều kiện: Môn học tiên quyết: không. Môn học trước: Toán 1

Mô tả nội dung môn học: Dãy và chuỗi; Kiểm tra sự hội tụ; Chuỗi mủ; Chuỗi Taylor và Maclaurin; Hệ tọa độ Cartesian; Đường thẳng, Mặt và Mặt phẳng; Đạo hàm và tích phân của hàm véc tơ; Chiều dài đường cong; Mặt phẳng tham số; Mặt tiếp xúc; véc tơ Gradient; Cực trị; Nhân tử Lagrange; Tích phân bội: tích phân hai lớp, tích phân ba lớp, những kỹ thuật tính tích phân; Trường véc tơ, tích phân đường, tích phân mặt.

12.9. Tên môn học: Phương trình vi phân

Mã môn học: MA024IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Toán 1, Toán 2.

Mô tả nội dung môn học: Phương trình vi phân cấp một, phương trình vi phân cấp hai, hệ số không xác định, phương sai của tham số, phương trình vi phân tuyến tính cấp cao, nghiệm chuỗi của phương trình vi phân tuyến tính cấp hai với hệ số không là hằng, hệ phương trình tuyến tính cấp một, cơ bản về phương trình đạo hàm riêng và phương pháp tách biến, phương pháp số.

12.10. Tên môn học: Đại số tuyến tính

Mã môn học: CE215IU

Số tín chỉ: 2

Điều kiện:

Mô tả nội dung môn học: phương pháp ma trận và vectơ để nghiên cứu các hệ phương trình tuyến tính, tập trung vào các tính toán và ứng dụng cụ thể. Các chủ đề cụ thể được đề cập bao gồm ma trận, loại bỏ Gaussian, không gian vectơ, phân rã LU, tính trực giao, quy trình Gram nhắc Schmidt, các định thức, nội vectơ, các vấn đề trị riêng và các ứng dụng cho phương trình vi phân và quy trình Markov.

12.11. Tên môn học: Xác suất thống kê

Mã môn học: CE216IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Tin học cho kỹ sư

Mô tả nội dung môn học: Khóa học này cung cấp cho sinh viên những kiến thức cơ bản về xác suất và thống kê, bao gồm một số phân bố đặc biệt, ước tính, xác suất có điều kiện, kiểm tra giả thuyết và hồi quy tuyến tính đơn giản.

12.12. Tên môn học: Vật lý 1

Mã môn học: PH013IU

Số tín chỉ: 2

Điều kiện: : Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khảo sát động học, động lực học, năng lượng học của chuyển động của chất điểm và của vật rắn. Khảo sát động lực học lưu chất, tính chất của khí lý tưởng, và các nguyên lý nhiệt động lực học.

12.13. Tên môn học: Vật lý 2

Mã môn học: PH014IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khảo sát động lực học lưu chất, tính chất của khí lý tưởng, và các nguyên lý nhiệt động lực học

12.14. Tên môn học: Vật lý 3

Mã môn học: PH015IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Vật lý 1

Mô tả nội dung môn học: Khảo sát các hiện tượng điện và từ trường cũng như các mạch điện không đổi và mạch điện xoay chiều.

12.15. Tên môn học: Thí nghiệm vật lý 3

Mã môn học: PH016IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: Vật lý 3

Mô tả nội dung môn học: Khóa học này cung cấp cho sinh viên kiến thức cơ bản về **điện** và từ tính trong phòng thí nghiệm, bao gồm: định luật Ohm, mạch LRC, mạch RC, mạch LR, từ trường của cuộn dây.

12.16. Tên môn học: Hóa học cho kĩ sư

Mã môn học: CH011IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học chuyên về các nguyên lý hoá học vô cơ, hữu cơ. Kiến thức này cần thiết để có thể học được các kiến thức ở các môn chuyên ngành. Nội dung của môn học bao gồm hóa học kim loại và phi kim loại, hóa học các nguyên tố, bản chất của liên kết hóa học trong các hợp chất hữu cơ, hóa học của carbon, đồng phân, tính chất vật lý và hóa học của các hợp chất hữu cơ, hydrocarbon, các nhóm chức, các hợp chất có nhân thơm và các dị vòng và hóa học polymer.

12.17. Tên môn học: Thực hành hóa học

Mã môn học: CH012IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Giới thiệu các kỹ thuật hóa học trong phòng thí nghiệm liên quan đến các ngành kĩ thuật

12.18. Tên môn học: Đạo đức nghề nghiệp và tư duy phản biện

Mã môn học: PE022IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khóa học này được thiết kế để giới thiệu cho sinh viên kỹ thuật về các khái niệm, lý thuyết và thực tiễn đạo đức kỹ thuật. Nó cho phép sinh viên khám phá mối quan hệ giữa đạo đức và kỹ thuật cũng như áp dụng lý thuyết đạo đức cổ điển và ra quyết định cho các vấn đề kỹ thuật gặp phải trong học thuật và nghề nghiệp.

12.19. Tên môn học: Khái niệm ngành Kỹ thuật Xây dựng

Mã môn học: CE100IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học cung cấp sơ lược lịch sử lâu dài, hiện trạng và các thách thức của ngành kỹ thuật xây dựng. Đạo đức, trách nhiệm nghề nghiệp và mô tả các lĩnh vực chuyên ngành khác nhau trong kỹ thuật xây dựng được trình bày. Môn học cũng cung cấp sơ phác các công việc , các môn học khác nhau trong kỹ thật xây dựng như các môn vật liệu xây dựng, kết cấu, kỹ thật tài nguyên nước, đo dạc, kỹ thật giao thông, kỹ thật môi trường, kỹ thuật đô thị, kỹ thuật thi công,… Quá trình thiết kế các công trình, dự án như các công trình hạ tầng, nhà cửa, các công trình cầu đường, đập nước… được mô tả sơ lược. Chiến lược của đất nước và các kế hoạch to lớn về phát triển hệ thống hạ tầng quốc gia, phát triển đô thị của Việt Nam được giới thiệu cùng các quyết định quan trọng liên quan của Chính phủ.

12.20. Tên môn học: Tiếng Anh chuyên ngành 1 (kỹ năng viết)

Mã môn học: EN007IU

Số tín chỉ: 2

Điều kiện: Sinh viên phải đạt TOEFL pBT 500 hoặc TOEFL iBT 60 hoặc hoàn thành khóa học IE2

Mô tả nội dung môn học: Môn học nhằm nâng cao kỹ năng viết trình độ tiền nâng cao (pre-advanced). Chương trình tập trung vào việc xây dựng bài luận dựa trên các kỹ năng viết như: làm dàn bài, viết câu luận đề, kết nối và sắp xếp trình tự các đọan, dung từ và cụm từ nối để tạo sự mạch lạc cho bài văn. Các thể loại bao gồm: miêu tả người, đồ vật, quy trình, trình bày ý kiến, so sánh và đối chiếu, nguyên nhân - kết quả, vấn đề - giải pháp, nghị luận.

12.21. Tên môn học: Tiếng Anh chuyên ngành 1 (kỹ năng nghe)

Mã môn học: EN008IU

Số tín chỉ: 2

Điều kiện: Sinh viên phải đạt TOEFL pBT 500 hoặc TOEFL iBT 60 hoặc hoàn thành khóa **học** IE2

Mô tả nội dung môn học: Những kỹ năng nghe tiếng Anh học thuật, ghi chú, và thảo luận sẽ giúp sinh viên làm quen với những khó khăn trong việc học tiếng Anh ở đại học. Sinh viên sẽ học các kỹ năng cần thiết cho sinh viên đại học quốc tế, bao gồm: nghe bài giảng chủ động, ghi chú hiệu quả, tham gia thảo luận tự tin. Cùng với các kỹ năng nghe, sinh viên cũng sẽ trau dồi thêm vốn từ vựng học thuật.

12.22. Tên môn học: Tiếng Anh chuyên ngành 2 (kỹ năng viết)

Mã môn học: EN011IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Tiếng Anh chuyên ngành 1 (Kỹ năng viết)

Mô tả nội dung môn học: Khóa học nhằm cung cấp một cách tổng quát cấu trúc của một bài viết báo cáo nghiên cứu, từng bước giúp sinh viên hoàn tất một bài viết cụ thể trong lĩnh vực của mình. Nội dung của khóa học bao gồm: các thành phần của bài báo cáo, kỹ năng chọn và giới hạn đề tài, viết Tiếng Anh chuyên ngành 1 (Kỹ năng viết)câu luận đề, làm dàn bài, tìm và dẫn chứng tài liệu, ghi chú, viết mở bài, nội dung chính và kết luận, viết và sửa chữa bản nháp. Sinh viên sẽ thực hành trên các đề tài liên quan đến môn học của mình.

12.23. Tên môn học: Tiếng Anh chuyên ngành 2 (kỹ năng nói)

Mã môn học: EN012IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Tiếng Anh chuyên ngành 1 (Kỹ năng nghe)

Mô tả nội dung môn học: Môn học cung cấp cho sinh viên các chiến lược thiết thực sử dụng trong việc thuyết trình. Ngoài ra, sinh viên được giúp đỡ để hình thành kỹ năng lắng nghe, nhận xét và nêu ý kiến phản hồi đối với các bài thuyết trình khác trong lớp**.**

12.24. Tên môn học: Giáo dục thể chất 1

Mã môn học: PT001IU

Số tín chỉ: 3

Mô tả nội dung môn học: Cờ vua: Sau khi hoàn thành khóa học, học viên nắm được tổng quan các vấn đề giáo dục thể chất và thể thao trong nhà trường, lịch sử hình thành môn cờ vua; mục đích, ý nghĩa, tác dụng và yêu cầu trong quá trình tập luyện môn cờ vua, thuần thục một số kỹ thuật cơ bản môn cờ vua.

Bóng bàn: Sau khi hoàn thành khóa học, học viên thực hiện thuần thục được một số kỹ năng cơ bản như cầm vợt đúng cách, , các bước di chuyển, tư thế chuẩn bị đánh bóng, kỹ thuật giao bóng, vụt bóng thuận tay và trái tay cơ bản

12.25. Tên môn học: Giáo dục thể chất 2

Mã môn học: PT002IU

Số tín chỉ: 3

Cờ vua: Sau khi hoàn thành khóa học, học viên thuần thục một số kỹ thuật cơ bản và nâng cao môn cờ vua.

Bóng bàn: Sau khi hoàn thành khóa học, học viên thực hiện thuần thục được một số kỹ năng cơ bản và nâng cao như: Giao bóng thuận tay và trái tay xoáy xuống cơ bản, kỹ thuật gò, cắt bóng thuận tay, trái tay cơ bản, đấu tập.

12.26. Tên môn học: Tin học cho kỹ sư

Mã môn học: CE102IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: (Môn học giới thiệu cho sinh viên các khái niệm và nguyên lý của kỹ thuật lập trình được trình bày trong ngôn ngữ lập trình MATLAB. Môn học cũng giới thiệu

cho sinh viên kỹ năng giải quyết vấn đề kỹ thuật trong xây dựng sử dụng phần mềm EXCEL và ngôn ngữ VBA).

12.27. Tên môn học: Phương pháp tính trong xây dựng

Mã môn học: CE213IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Đại số tuyến tính, sức bền vật liệu 1

Mô tả nội dung môn học: Áp dụng phương pháp tính toán cho các bài toán kỹ thuật xây dựng. Sơ lược về phương pháp tính về giải phương trình vi phân, phương trình và hệ phương trình tuyến tính, phi tuyến, tích phân số, nội suy. Sơ lược về phần tử hữu hạn, tối ưu hóa.

12.28. Tên môn học: Cơ lý thuyết – Tĩnh học

Mã môn học: CE101IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: (Môn học giới thiệu cho sinh viên các khái niệm cơ bản về các loại lực, mô men, và ngẫu lực; hợp lực của hệ lực; phân tích trạng thái cân bằng and sơ đồ lực tác dụng; phân tích ứng xử của bài toán dàn, hệ vật, …; bài toán ma sát Coulomb; trọng tâm, tâm khối lượng, hợp của lực phân bố, moment quán tính, định lý dời lực song song, định lý xoay trục, vẽ biểu đồ nội lực cho dầm).

12.29. Tên môn học: Trí tuệ nhân tạo trong kỹ thuật và quản lý xây dựng

Mã môn học: CE217IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: (Khóa học này giới thiệu cách chúng tôi áp dụng trí tuệ nhân tạo **trong** kỹ thuật xây dựng (CE) và quản lý xây dựng (CM). Một số vấn đề điển hình của ứng dụng trí tuệ nhân tạo trong CE và CM được giới thiệu như hồi quy/phân loại/phân đoạn/phát hiện bất thường trong dữ liệu thí nghiệm, dữ liệu quan trắc, ảnh X-quang đất, v.v. Khóa học giới thiệu các phương pháp trí tuệ nhân tạo thường được sử dụng trong CE và CM CM, bao gồm k-hàng xóm gần nhất, mạng nơ ron, cây quyết định, rừng ngẫu nhiên và giải thích các khái niệm của chúng để học sinh biết cách hình thành cách giải quyết vấn đề.).

12.30. Tên môn học: Vẽ và thiết kế với sự hỗ trợ của máy tính

Mã môn học: CE103IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khóa học này giới thiệu cho sinh viên CE một cái nhìn tổng **quan** toàn diện về bản vẽ xây dựng cơ bản. Khóa học giải thích việc sử dụng các dòng, kích thước, thông số kỹ thuật, ký hiệu và tiêu chuẩn, thuật ngữ và ghi chú quy trình sản xuất có trên bản vẽ CAD. Khóa học cũng cung cấp và mở rộng thành chủ đề rộng hơn như các loại bản vẽ xây dựng khác nhau và cách các bản thiết kế và bản vẽ xây dựng được sử dụng để thực hiện quy trình xây dựng.

12.31. Tên môn học: Thực hành CADD

Mã môn học: CE104IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học này cung cấp cho sinh viên các kỹ năng vẽ các kết cấu **trên** mặt phẳng (2D) bằng phần mên Auto CADD

12.32. Tên môn học: Sức bền vật liệu 1

Mã môn học: CE201IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ lý thuyết – Tĩnh học

Mô tả nội dung môn học: Môn học cung cấp các khái niệm và nguyên lý cơ bản của cơ học vật liệu. Môn học bao gồm các kiến thức về ứng suất, biến dạng, ứng xử và các đặc trưng cơ học của vật liệu, thiết kế một số liên kết đơn giản, biến dạng thanh chịu lực dọc trục, bài toán siêu tĩnh thanh chịu lực dọc trục, ứng suất do sự thay đổi nhiệt độ, ứng suất tiếp và góc xoắn khi thanh chịu xoắn, bài toán siêu tĩnh thanh chịu xoắn, dầm chịu uốn, ứng suất pháp và tiếp trong dầm chịu uốn, dòng trượt trong cấu kiện tổ hợp và các thiết kế cơ bản dầm.

12.33. Tên môn học: Sức bền vật liệu 2

Mã môn học: CE208IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Môn học phát triển và cung cấp kiến thức cho các vấn đề phức tạp hơn trong sức bền vật liệu với các nội dung sau: Ứng suất trong vỏ thành mỏng chịu áp lực, trong kết cấu thanh chịu tải phức tạp, khái niệm về trạng thái ứng suất, biến dạng, phép biến đổi ứng suất, biến dạng, vòng tròn Mohr, các ứng suất chính và ứng suất tiếp lớn nhất cùng phương của chúng tại một điểm. Hoa điện trở. Quan hệ ứng suất – biến dạng, các phương trình định luật Hooke tổng quát. Biến dạng và đường đàn hồi của dầm chịu uốn và bài toán dầm siêu tĩnh. Ổn định thanh chịu nén trong và ngoài miền đàn hồi. Phương pháp năng lượng và bài toán va chạm.

12.34. Tên môn học: Thí nghiệm sức bền vật liệu 1

Mã môn học: CE202IU

Số tín chỉ: 1

Điều kiện: Môn học song hành: Sức bền vật liệu 1. Môn học trước: Cơ lý thuyết – Tĩnh học

Mô tả nội dung môn học: Môn học cung cấp các khái niệm và nguyên lý cơ bản của cơ học vật liệu. Môn học bao gồm các kiến thức về ứng suất, biến dạng, ứng xử và các đặc trưng cơ học của vật liệu, thiết kế một số liên kết đơn giản, biến dạng thanh chịu lực dọc trục, bài toán siêu tĩnh thanh chịu lực dọc trục, ứng suất do sự thay đổi nhiệt độ, ứng suất tiếp và góc xoắn khi thanh chịu xoắn, bài toán siêu tĩnh thanh chịu xoắn, dầm chịu uốn, ứng suất pháp và tiếp trong dầm chịu uốn, dòng trượt trong cấu kiện tổ hợp và các thiết kế cơ bản dầm.

12.35. Tên môn học: Cơ học chất lỏng

Mã môn học: CE205IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Cơ học chất lỏng là một trong những môn học cơ bản cho các kỹ sư xây dựng. Nói chung, cơ học chất lỏng là nghiên cứu về các cơ chế trong đó chất lỏng, trong các trạng thái khác nhau (như: khí và chất lỏng) phản ứng với các lực, tác dụng lực và di chuyển từ nơi này sang nơi khác theo góc nhìn vật lý. Khóa học này sẽ cung cấp những kiến thức cơ bản về các tính chất vật lý của chất lỏng và đặc điểm của nó. Hơn nữa, sinh viên cũng sẽ được học các định luật và các phương trình đặc trưng cho các loại chất lỏng khác nhau ở cả trạng thái tĩnh và chuyển động tương tác với các kết cấu công trình; và biết cách giải các phương trình này hoặc tính các tham số vật lý theo khía cạnh ứng dụng thực tế. Ngoài ra, các bài tập thực hành để đo tính chất chất lỏng được giới thiệu trong khóa học này.

Do đó, cơ học chất lỏng liên quan vào gần như tất cả các lĩnh vực Kỹ thuật xây dựng một cách trực tiếp hoặc gián tiếp. Một số ví dụ về sự liên quan trực tiếp mà chúng ta sẽ quan tâm đến các công trình thủy, bao gồm: bảo vệ bờ biển và sông (phòng lũ), mạng lưới phân phối / thoát nước (vệ sinh), đập, thủy lợi, máy bơm và tua-bin, công trình giữ nước, v.v. ; và một số ví dụ trong đó đối tượng chính là xây dựng - phân tích cơ học chất lỏng là điều cần thiết, chẳng hạn như: luồng không khí trong / xung quanh các tòa nhà; trụ cầu trên sông; dòng chảy nước ngầm, vân vân.

12.36. Tên môn học: Thực hành Cơ học chất lỏng

Mã môn học: CE206IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học chất lỏng

Mô tả nội dung môn học: Khóa học này chủ yếu sử dụng phòng thí nghiệm để giảng dạy. Các bài tập thực nghiệm sẽ được cung cấp cho sinh viên để chứng minh lý thuyết được đưa ra trong các bài giảng trên lớp. Các thí nghiệm này được thiết kế để đo đạc, kiểm tra một số tính chất của chất lỏng và tiến hành các thí nghiệm liên quan đến hiện tượng nguyên lý của dòng chảy (nước) không thể nén được, chẳng hạn như: dòng chảy qua đập, tổn thất dòng chảy trong đường ống ..

12.37. Tên môn học: Thủy lực thủy văn

Mã môn học: CE211IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học chất lỏng

Mô tả nội dung môn học: Các khái niệm cơ bản, các nguyên lý thủy văn và ứng dụng thủy văn trong thiết kế. Lý thuyết và tính toán cho các vấn đề dòng chảy đều và không đều trong kênh hở, hiện tượng và tính toán nước nhảy, dòng chảy qua các công trình thủy lợi, dòng chảy không ổn định trong kênh và đường ống, dòng chảy trong môi trường rỗng.

12.38. Tên môn học: Cấp thoát nước

Mã môn học: CE306IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học chất lỏng

Mô tả nội dung môn học: Môn học giới thiệu các vấn đề về cấp nước, thoát nước ở bên ngoài và bên trong nhà. Phần cấp nước sẽ đề cập đến các loại nguồn nước và các sơ đồ xử lý nước, hệ thống cấp nước cho khu vực và cho công trường xây dựng cũng như hệ thống cấp nước trong nhà, trong đó sẽ nhấn mạnh đến việc tính toán và thiết kế mạng lưới cấp nước. Phần

thoát nước sẽ trình bày các vấn đề chủ yếu về hệ thống thoát nước cho khu vực và trong nhà cũng như các phương pháp cơ bản xử lý nước thải.

12.39. Tên môn học: Vật liệu xây dựng

Mã môn học: CE210IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Môn học này sẽ cung cấp cho sinh viên kiến thức về vật liệu truyền thống và hiện đại được sử dụng trong xây dựng công trình. Các vật liệu gồm bê tông, cốt thép, bê tông át-phan và các vật liệu khác như gạch, vữa, gỗ, cốt sợi, … Đặc tính của các vật liệu sẽ được dạy và thảo luận. Sinh viên sẽ hiểu các đặc tính nào là có lợi và các đặc tính nào là bất lợi cho công trình. Từ đó, sinhv iên sẽ biết được dụng các vật liệu và trong các kết cấu chịu lực và kết cấu không chịu lực của công trình. Vật liệu xây dựng sẽ phải hoài hòa với môi trường, độ bền, giá thành rẻ bằng cách sử dụng vật liệu địa phương và giảm chi phí trong gia cường kết cấu. Sử dụng vật liệu địa phưng cũng thỏa mãn tính văn hóa của vùng. Kết quả từ khóa học này sinh viên có những hiểu biết về vật liaauj và có khả năng áp dụng trong xây dựng công trình.

12.40. Tên môn học: Kiến trúc dân dụng

Mã môn học: CE214IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học cung cấp cho sinh viên những thông tin cốt lõi cần thiết để định hình mô hình cho việc hoạch định chi tiết dự án xây dựng. Những thông tin này bao gồm những nguyên tắc cơ bản của quá trình thiết kế, những quy định cơ bản về khoảng không gian, dịch vụ và xây dựng công trình dân dụng cũng như là những minh họa và mô tả của những loại công trình khác nhau. Sinh viên sẽ làm việc theo nhóm thực hiện những hoạt động để tìm hiểu về các đặc điểm khác nhau của kiến trúc dân dụng.

12.41. Tên môn học: Trắc địa

Mã môn học: CE307IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Khái niệm về bản đồ địa hình; Độ chính xác của tỷ lệ bản đồ; Cách biểu diễn địa hình và địa vật. Sai số trong trắc địa, các trị số đo. Dụng cụ và Phương pháp đo góc, đo dài, đo cao. Lưới tọa độ: Lưới cao độ; Phương pháp bình sai. Đo vẽ và sử dụng bản đồ, mặt cắt địa hình: phương pháp đo chi tiết bằng máy toàn đạc điện tử. Bố trí công trình: Chuẩn bị số liệu; Chuyển góc và độ dài; Chuyển điểm; Chuyển độ cao và mặt phẳng; Chuyển đường cong ra hiện trường. Giới thiệu về Viễn thám và về hệ thống thông tin địa lý GPS.

12.42. Tên môn học: Thực tập trắc địa

Mã môn học: CE308IU

Số tín chỉ: 1

Điều kiện: Môn học song song: trắc địa. Môn học trước: không

Mô tả nội dung môn học: Môn học giới thiệu các nguyên tắc đo khoảng cách, độ cao và góc cũng như lý thuyết lỗi cơ bản trong đo lường và tính toán, và các nguyên tắc cơ bản của khảo sát và lập bản đồ. Ngoài ra, môn học cũng giúp sinh viên làm quen với các công cụ khảo sát khác nhau, thực hành các hoạt động khảo sát như san lấp mặt bằng, khảo sát điều khiển theo phương pháp vòng kín, điều chỉnh và tính toán tọa độ của các trạm điều khiển, khảo sát chi tiết và lập bản đồ các điểm.

12.43. Tên môn học: Cơ học đất

Mã môn học: CE302IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Môn học này cung cấp cho sinh viên các tính chất cớ lý của đất, áp lực ngang của đât tác dụng lên kết cấu, độ ổn định máy dọc, sức kháng của đất và tính lún của đất do kết cấu đặt trên đất gây ra. Đây là những kiến thức cơ bản trong linh vực xây dựng công trình. Các đặc tính của đất bao gồm, sự hình thành của đất, các đăc tính vật lý của đất, phân loại đất, đầm lèn đất, thấm và thoát nước trong đất. Các đặc tính cớ học của đất như ứng suất trọng đất do bản thân đất, do kết cấu cấu gây ra, sự lún của đất và sức kháng cắt của đất. Áp lực ngang của đất sẽ được tính toán theo trong lý thuyết Rankine và lý thuyết Coulomb và xác định các mặt trượt của đất.

12.44. Tên môn học: Thực hành Cơ học đất

Mã môn học: CE303IU

Số tín chỉ: 1

Điều kiện: Môn học song song: Cơ học đất. Môn học trước: không

Mô tả nội dung môn học: Môn học này cung cấp cho sinh viên các phương pháp để xác **định** các đặc tính cần thiết của đất trong phòng thí nghiệm để phục vụ cho công tác thiết kế gồm: độ ẩm, khối lượng thể tích, phân tích thành phần cấp phối hạt, các đặc tính Atterberg, đầm lèn và xác định sức kháng cắt của đất theo phương pháp cắt trực tiếp. Môn học bao gồm nhưng hiểu biết về các thiết bị thí nghiệm, quá trình thí nghiệm liên quan đến mối đặc tính được thí nghiệm.

12.45. Tên môn học: Nền móng

Mã môn học: CE309IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học đất

Mô tả nội dung môn học: Các khái niệm cơ bản về phân tích và thiết kế nền móng công trình bao gồm tính toán sức chịu tải giới hạn của nền đất, tính toán ứng suất và độ lún, thiết kế thép móng, tính toán áp lực ngang, thiết kế tường chắn, tính toán sức chịu tải móng cọc, thiết kế móng cọc.

12.46. Tên môn học: Cơ học Kết cấu 1

Mã môn học: CE209IU

Số tín chỉ: 2

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Giới thiệu về các loại kết cấu, liên kết và tải trọng. Lý tưởng hóa kết cấu đưa về mô hình tính toán. Xác định bậc siêu tĩnh, bậc tự do và ổn định kết cấu. Phân tích kết cấu dàn dầm và khung, tính toán nội lực và vẽ biểu đồ mômen. Tính toán chuyển vị, độ võng dùng phương pháp tích phân, nguyên lý công ảo. Giới thiệu về đường ảnh hưởng. Phương pháp lực và chuyển vị để giải hệ siêu tĩnh.

12.47. Tên môn học: Cơ học Kết cấu 2

Mã môn học: CE301IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học Kết cấu 1

Mô tả nội dung môn học: Áp dụng phương pháp phần tử hữu hạn để phân tích kết cấu. Phần tử thanh dàn 1 chiều, phần tử dầm và khung, áp dụng và phân tích kết quả. Các yêu cầu và cấu trúc cơ bản của các phần mềm tính toán kết cấu. Giới thiệu các phân pháp tính toán kết cấu ở trạng thái giới hạn dầm, khung và tấm.

12.48. Tên môn học: Bê tông cốt thép 1

Mã môn học: CE304IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Khái niệm thiết kế cơ bản: bố trí cơ bản của kết cấu bê tông, tải trọng; tính chất vật liệu cơ bản: bê tông và cốt thép; phân tích kết cấu: thiết kế trạng thái giới hạn, đơn giản hóa các kết cấu khung, phân phối mômen; phân tích và thiết kế các cấu kiện chịu uốn; cắt; neo; trạng thái giới hạn thứ 1; sàn 1 chiều 2 chiều; thanh chịu nén; móng đơn. Theo tiêu chuẩn thiết kế EC2.

12.49. Tên môn học: Bê tông cốt thép 2

Mã môn học: CE310IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Bê tông cốt thép 1

Mô tả nội dung môn học: Phân tích và thiết kế kết cấu bêtông dự ứng lực; dầm; sàn. Phân tích và thiết kế sàn composite. Tiêu chuẩn xây dựng EC2 được được sử dụng trong khóa học này

12.50. Tên môn học: Kết cấu thép

Mã môn học: CE305IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Sức bền vật liệu 1

Mô tả nội dung môn học: Môn học giới thiệu cho sinh viên các nguyên lý cơ bản về kết cấu thép, các đọc bản vẽ mặt bằng, mặt đứng, mặt cắt, sự phân bố tải trọng lên kết cấu dựa vào bản vẽ kiến trúc, các xác định tổ hợp tải trọng cho việc thiết kế, quan trọng nhất là việc thiết kế kết cấu thép như dầm, cột, thiết kế các liên kết trong kết cấu thép như bu lông, đường hàn

12.51. Tên môn học: Kỹ thuật thi công

Mã môn học: CE311IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Kết cấu bê tông kết cấu, kết cấu thép, nền móng, vật liệu xây dựng

Mô tả nội dung môn học: Môn học giới thiệu những khái niệm cơ bản về thi công các công trình, bao gồm các công tác đất, thi công móng, thi công các công trình kết cấu gỗ, bê tông, gạch đá và thép.

12.52. Tên môn học: Quản lý xây dựng

Mã môn học: CE401IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Kỹ thuật thi công

Mô tả nội dung môn học: Môn học cung cấp những chủ đề rộng lớn phản ánh các kiến thức cần thiết để hiểu biết những vấn đề của ngành xây dựng. Môn học tập trung vào các quy trình và công tác cần thiết để quản lý dự án xây dựng bao gồm: lập ngân sách dự án, lưu trữ số liệu và hồ sơ, lập hợp đồng và chỉ dẫn kỹ thuật, và các nhiệm vụ cần thiết khác để dự án vận hành hiệu quả và kết thúc thành công.

12.53. Tên môn học: Đồ án thép

Mã môn học: CE312IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: Kết cấu thép

Mô tả nội dung môn học: Sinh viên sẽ thực hiện việc tính toán tương đối hoàn chỉnh một công trình bằng thép, thường là nhà công nghiệp một tầng bằng thép có cầu trục, bao gồm việc xác định các loại tải trọng, xác định nội lực, tổ hợp và chọn tiết diện cho những bộ phận kết cấu đó.

12.54. Tên môn học: Đồ án bêtông cốt thép

Mã môn học: CE313IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: Bê tông cốt thép 1

Mô tả nội dung môn học: Thực hành thiết kế công trình bêtông cốt thép: tòa nhà bê tông cốt thép hoặc cầu. Học sinh phải áp dụng kiến thức trong khóa học kết cấu bêtông cốt thép cho môn học này bao gồm tính toán tải trọng, xác định nội lực bằng phần mềm phân tích kết cấu, thiết kế sử dụng một tiêu chuẩn thiết kế cụ thể và cuối cùng là viết báo cáo.

12.55. Tên môn học: Đồ án nền móng

Mã môn học**:** CE402IU

Số tín **chỉ: 1**

Điều kiện: Môn học tiên quyết: không. Môn học trước: Nền móng

Mô tả nội dung môn học: Thực hiện phân tích và thiết kế nền móng công trình với các số liệu địa chất thực, thể hiện bằng các bản vẽ kỹ thuật.

12.56. Tên môn học: Đồ án kỹ thuật thi công

Mã môn học: CE403IU

Số tín chỉ: 1

Điều kiện: Môn học song hành: Quản lý thi công. Môn học trước: Kỹ thuật thi công

Mô tả nội dung môn học: Môn học được thiết kế nhằm giúp sinh viên áp dụng những kiến thức đã được học trong môn Kỹ thuật thi công và Quản lý thi công để lập biện pháp thi công bao gồm thiết kế cốp pha cột, dầm, sàn, thi công cọc và lập tiến độ thi công công trường.

12.57. Tên môn học: Đông lực học công trình

Mã môn học: CE404IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học kết cấu 2

Mô tả nội dung môn học: Môn học cung cấp kiến thức cơ bản về ứng xử động lực học kết cấu với việc nhấn mạnh các kết cấu trong xây dựng như nhà cao tầng và kết cấu cầu. Các phương pháp thiết lập phương trình chủ đạo của dao động (EOM), các phân tích đáp ứng của các hệ một bậc tự do (SDOF) và hệ nhiều bậc tự do (MDOF) không cản và có cản (damping) chịu tác động của các loại tải trọng động khác nhau như dao động tự do, chịu tải trọng điều hòa, tải trọng có chu kỳ, tải trọng xung hay tải trọng động bất kỳ được trình bày và phân tích. Việc xác định các đại lượng (ma trận) đặc trưng động lực học của kết cấu (khối lượng, độ cản, độ cứng, tần số, chu kỳ dao động, dạng dao động, ...) được trình bày. Đáp ứng kết cấu nhiều bậc tự do được phân tích bằng phương pháp phân tích dạng (Modal Analysis). Động đất và đáp ứng của kết cấu khi chịu động đất, phổ thiết kế trong các quy phạm được giới thiệu.

12.58. Tên môn học: Công trình thủy

Mã môn học: CE405IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Cơ học chất lỏng, thủy lực-thủy văn

Mô tả nội dung môn học: Nhu cầu sử dụng nước cho phát triển kinh tế ngày càng gia tăng một cách rất nhanh; nhưng nguồn tài nguyên nước sẵn có (có thể khai thác được) thì lại có hạn. Đặc biệt, trong thời gian gần đây, nguồn nước này có xu hướng suy giảm do tác động biến đổi khí hậu và chất gây ô nhiễm nguồn nước do con người. Do đó, cần có một cách tiếp cận mới đó là cách tiếp cận bền vững trong phát triển và bảo vệ tài nguyên nước. Môn học này sẽ cung cấp cho sinh viên những kiến thức để thiết kế một số cấu trúc thủy lực điển hình hỗ trợ cho kỹ thuật tài nguyên nước bền vững.

Trong môn học này, việc ứng dụng cơ học chất lỏng, thủy văn và thủy lực kênh kênh hở để thiết kế một số loại công trình cơ sở hạ tầng (liên quan đến nước) phổ biến sẽ được giới thiệu và thực hành, bao gồm: công trình chứa nước, công trình điều khiển, công trình tiêu tán năng lượng, công trình bảo vệ bờ biển, v.v.

Bên cạnh các quy trình thiết kế cổ điển, sinh viên cũng được cung cấp các kiến thức liên quan đến giải pháp bền vững và thực hành đánh giá tác động môi trường (EIA) cho các công trình điển hình, tác động mạnh mẽ đến xã hội và môi trường tự nhiên, như: đập, nhà máy thủy điện, hệ thống thoát nước đô thị.

12.59. Tên môn học: Thiết kế nhà cao tầng

Mã môn học: CE407IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Các khái niệm thiết kế cơ bản của nhà cao tầng: hiệu ứng gió và tải trọng gió: phân tích ảnh hưởng của động đất và thiết kế; hệ thống chịu tải trọng đứng cho

kết cấu thép, bêtông và composite: sự ổn định của các tòa nhà cao tầng; co ngót và hiệu ứng nhiệt độ; phương pháp thiết kế và phân tích; tường chịu cắt và thiết kế tường lõi thang máy.

12.60. Tên môn học: Thiết kế cầu

Mã môn học: CE406IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Vật liệu xây dung, bê tông cốt thép 1,2

Mô tả nội dung môn học: Môn học này sẽ giới thiệu đến sinh viên các phương pháp phân tích thiết kế và đánh giá các kết cấu cầu dựa trên tiêu chuẩn thiết kế TCVN 11823:2017. Tiêu chuẩn này được đề xuất dựa trên tiêu chuẩn thiết kế AASHTO LRFD xuất bản lần thứ 7 năm 2015 của Hoa Kỳ. Môn học sẽ giới thiệu các loại cầu, thiết kế hình dạng cầu, các loại tải trọng tác dụng lên cầu, phân tích kết cấu, kết cấu bản, thiết kế cấu bê tông cốt thép dự ứng lực và các kết cấu phần dưới.

12.61. Tên môn học: Hệ thống thông tin xây dựng

Mã môn học: CM310IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Môn học này cung cấp cho sinh viên những kiến thức cơ bản của Hệ thống quản lý thông tin công trình và các ứng dụng của nó trong ngành xây dựng tương ứng với từng đối tượng hoạt động (chủ đầu tư, tư vấn, nhà thầu, …) trong ngành xây dựng.

12.62. Tên môn học: Trí tuệ nhân tạo nâng cao trong kỹ thuật và quản lý xây dựng

Mã môn học: CM412IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Trí tuệ nhân tạo trong kỹ thuật và quản lý xây dựng

Mô tả nội dung môn học: Mục tiêu của khóa học này là cung cấp cho sinh viên thông tin nâng cao về học máy (ML) và các công cụ phân tích với các ứng dụng của chúng trong kỹ thuật xây dựng (CE) và quản lý xây dựng (CM). Khóa học sẽ nhấn mạnh vào 1) thuật toán được giám sát truyền thống như máy vectơ hỗ trợ, 2) thuật toán học máy tập hợp bao gồm đóng gói và tăng tốc, 3) thuật toán học sâu như mạng thần kinh tích chập, 4) nguyên tắc cơ bản của các công cụ được sử dụng để xử lý dữ liệu quy mô lớn và 5) các công cụ được sử dụng để xử lý các thuật toán ML. Nguyên tắc cơ bản của các thuật toán và công cụ này và các ứng dụng của chúng trong các vấn đề khác nhau liên quan đến CE và CM sẽ được đề cập cùng với một dự án khóa học.

12.63. Tên môn học: Hệ thống thông tin địa lý

Mã môn học: CE413IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: không

Mô tả nội dung môn học: Phần giới thiệu bao gồm các khái niệm giới thiệu và sẽ đề cập đến các chủ đề cơ bản trong GIS bao gồm các loại dữ liệu và các công cụ phân tích và xử lý GIS phổ biến, lập bản đồ theo chủ đề, v.v. Trong phần thứ hai, các quy trình và kỹ thuật GIS liên

quan đến Kỹ thuật Xây dựng sẽ được đề cập thông qua một loạt các nghiên cứu tình huống và bài tập.

12.64. Tên môn học: Quản lý dự án xây dựng

Mã môn học: CE414IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không. Môn học trước: Kỹ thuật thi công

Mô tả nội dung môn học: Môn học cung cấp cho sinh viên những kiến thức về vai trò, trách nhiệm và quyền hạn của những người tham gia dự án. Họ cũng nghiên cứu cách quản lý những người tham gia dự án, vật liệu, an toàn, chất thải và môi trường. Thiết kế và kiểm soát bố trí công trường cũng là một phần của khóa học.

12.65. Tên môn học: Nguyên lý Marketing

Mã môn học: BA003IU

Số tín chỉ: 3 lý thuyết

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Khóa học là một giới thiệu về ngôn ngữ và các vấn đề tiếp thị với trọng tâm là học cách phát triển các chiến lược tiếp thị đáp ứng nhu cầu của khách hàng. Khóa học tập trung vào các khái niệm tiếp thị cơ bản, vai trò của tiếp thị trong tổ chức và vai trò của tiếp thị trong xã hội. Các chủ đề bao gồm phân khúc thị trường, phát triển sản phẩm, quảng bá, phân phối và giá cả. Các chủ đề khác, sẽ được đưa vào khóa học, bao gồm tác động của môi trường bên ngoài (kinh tế, chính trị, chính phủ và tự nhiên), nghiên cứu tiếp thị, thông tin tiếp thị. tiếp thị quốc tế/toàn cầu liên quan đến đa dạng văn hóa, đạo đức, tác động của công nghệ đối với tiếp thị.

12.66. Tên môn học: Giao tiếp trong kinh doanh

Mã môn học: BA006IU

Số tín chỉ: 3

Khóa học này cung cấp cho sinh viên một cái nhìn toàn diện về truyền thông, phạm vi và tầm quan trọng của nó trong kinh doanh và vai trò của truyền thông trong việc thiết lập một thuận lợi bên ngoài môi trường vững chắc, cũng như một chương trình truyền thông nội bộ hiệu quả. Các loại phương tiện truyền thông kinh doanh được bảo hiểm. Khóa học này cũng phát triển nhận thức về tầm quan trọng của biểu hiện bằng văn bản cô đọng đối với giao tiếp kinh doanh hiện đại. Hầu hết các bài tập sẽ được thực hiện bằng máy tính.

12.67. Tên môn học: Đạo đức kinh doanh

Mã môn học: BA020IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Trong môn học này, sinh viên sẽ tìm hiểu cách mà các giá trị cá nhân, giá trị doanh nghiệp, khía cạnh pháp lý và xã hội và đạo đức ảnh hưởng đến khả năng ra quyết định của các nhà quản lý trong một tổ chức. Sinh viên sẽ làm quen với cơ sở lý thuyết về đạo đức kinh doanh và vai trò của họ trong hành vi xã hội và doanh nghiệp của

một tổ chức. Sinh viên sẽ tìm hiểu các đặc điểm của các vấn đề đạo đức trong kinh doanh, có cơ hội tiếp xúc với sự phức tạp của việc ra quyết định đạo đức trong các tổ chức kinh doanh và phát triển các kỹ năng phân tích của họ để giải quyết các vấn đề đạo đức.

12.68. Tên môn học: Dẫn nhập quản trị kinh doanh

Mã môn học: BA115IU

Số tín chỉ: 3

Mô tả nội dung môn học: Khóa học này xem xét vai trò của doanh nghiệp trong xã hội; các hoạt động liên quan thông qua đó kinh doanh cung cấp hàng hóa và dịch vụ thiết yếu cho xã hội đương đại; và mối quan hệ tương quan giữa doanh nghiệp và chính phủ, lao động và xã hội nói chung. Các lĩnh vực chung của trung tâm nghiên cứu về: nền tảng kinh doanh, quản lý doanh nghiệp, hoạt động tiếp thị, và các vấn đề và phát triển kinh doanh đương đại

12.69. Tên môn học: Dẫn nhập khoa học xã hội

Mã môn học: BA116IU

Số tín chỉ: 3

Mô tả nội dung môn học: Khóa học được thiết kế để giới thiệu cho sinh viên về lĩnh vực khoa học xã hội bao gồm sự kết hợp đa dạng của các ngành nhân chủng học, xã hội học, tâm lý học, kinh tế, lịch sử, địa lý và khoa học chính trị. Khóa học tập trung vào lĩnh vực xã hội học và các chủ đề chính của nó vì chúng liên quan đến nghiên cứu về quản lý và kinh doanh cũng như xã hội hiện đại. Điều này tạo điều kiện phát triển nhận thức về ngôn ngữ và phương pháp liên quan đến nghiên cứu khoa học xã hội. Khóa học sử dụng cách tiếp cận liên ngành để nghiên cứu và hiểu hành vi của con người cũng như các vấn đề xã hội đương đại khác nhau.

12.70. Tên môn học:Dẫn nhập kinh tế vi mô

Mã môn học: BA117IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Kinh tế vi mô là môn học giới thiệu về kinh tế học. Môn học được thiết kế để cung cấp các công cụ cơ bản khi phân tích kinh tế vi mô. Kinh tế vi mô là ngành kinh tế liên quan đến sự tương tác của các hộ gia đình và công ty trong các thị trường riêng lẻ. Một số vấn đề nghiên cứu bao gồm cách xác định giá cả và mức sản lượng, điều gì xảy ra khi các chính phủ can thiệp vào thị trường, khi nào thị trường "thất bại", làm thế nào để thị trường tạo ra việc sử dụng "hiệu quả" các nguồn lực khan hiếm của xã hội và kết quả thị trường có công bằng hay không.

12.71. Tên môn học: Nhập môn tâm lý học

Mã môn học: BA118IU

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Môn học cung cấp các nguyên tắc và lý thuyết tâm lý học bao gồm phương pháp luận và phân tích ngắn gọn các lĩnh vực nội dung chính, từ phát triển, nhận thức và học tập đến động lực / cảm xúc, tính cách và các quá trình xã hội.

12.72. Tên môn học: Dẫn nhập kinh tế vĩ mô

Mã môn học: BA119IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Môn học kinh tế vĩ mô giúp hiểu rõ hơn về các vấn đề kinh tế rộng lớn khác nhau của một quốc gia, một khu vực và nền kinh tế toàn cầu cũng như đánh giá tác động của các chính sách kinh tế vĩ mô đối với nền kinh tế trong nước và toàn cầu. Các chủ đề bao gồm tăng trưởng kinh tế, chi phí sinh hoạt, tiết kiệm và đầu tư, thất nghiệp, lạm phát, tổng cầu và cung, chính sách tài khóa và tiền tệ. Sinh viên được tiếp xúc với cả lý thuyết kinh tế vĩ mô và các vấn đề kinh tế vĩ mô đương đại. Sinh viên tập trung vào cách phát triển các công cụ kinh tế và áp dụng các công cụ đó để hiểu các vấn đề đương đại.

12.73. Tên môn học: Kỹ năng vi tính kinh doanh

Mã môn học: BA120IU

Số tín chỉ: 3

Mô tả nội dung môn học: Khóa học này thu hẹp khoảng cách giữa kiến thức CNTT và việc sử dụng phần cứng, phần mềm và các tài nguyên khác trong học tập và kinh doanh. Khóa học này sẽ tập trung vào các tính năng nâng cao và các ứng dụng bảng tính Excel tích hợp, phát triển cơ sở dữ liệu giới thiệu bằng MS Access, giới thiệu về tạo tài liệu trang web bằng HTML và giới thiệu về kiến trúc hệ thống máy tính, bảo mật, truyền thông và mạng

12.74. Tên môn học: Quản trị học

Mã môn học: BA123IU

Số tín chỉ: 3

Điều kiện: Môn học tiên quyết: không

Môn học trước: BA130IU (Organizational Behavior)

Mô tả nội dung môn học: Môn học này trình bày một cách kỹ lưỡng và có hệ thống về lý thuyết và các ứng dụng của quản lý. Môn học tập trung vào các vai trò, kỹ năng và chức năng cơ bản của quản lý, đặc biệt chú ý đến vai trò của quản lý để đạt được hiệu quả và hiệu quả các mục tiêu. Môn học này đặc biệt hữu ích cho những người đảm nhiệm các vị trí giám sát và quản lý trong khu vực tư nhân hoặc công.

12.75. Tên môn học: Hành vi tổ chức

Mã môn học: BA130IU

Số tín chỉ: 3

Mô tả nội dung môn học: Khóa học này kiểm tra lý thuyết và thực hành về cách thức và lý do tại sao tổ chức hành xử theo cách họ làm. Khóa học phân tích các yếu tố gây ra hành vi nhất định trong một tổ chức và trình bày các khung khái niệm để phân tích về cách thức hành vi đó ảnh hưởng đến việc ra quyết định và hiệu quả của tổ chức. Các chủ đề chính của nghiên cứu bao gồm: sự năng động của con người và tổ chức, quản lý truyền thông, hệ thống xã hội và văn hóa tổ chức, hệ thống động lực và khen thưởng, lãnh đạo và trao quyền, thái độ và tác động của nó, hành vi giữa các cá nhân và nhóm, xây dựng đội nhóm, quản lý thay đổi, căng thẳng và tư vấn ...

12.76. Tên môn học: Hệ thống thông tin quản lý

Mã môn học: BA169IU

Số tín chỉ: 3 lý thuyết

Mô tả nội dung môn học: Khóa học này sẽ giới thiệu rộng rãi về bốn khía cạnh chính của khoa học dữ liệu: truy xuất và thao tác dữ liệu, trực quan hóa dữ liệu, tính toán thống kê và học máy, cũng như trình bày và giao tiếp.

12.77. Tên môn học: Quản trị sản xuất

Mã môn học: IS019IU

Số tín chỉ: 3 lý thuyết

Mô tả nội dung môn học: Khóa học này giới thiệu về hệ thống sản xuất. Lập kế hoạch sản xuất và kiểm soát việc ra quyết định, dự báo. Lập kế hoạch sản xuất tổng hợp. Lập kế hoạch năng lực. Lập kế hoạch nhu cầu vật liệu. Các kỹ thuật và phương pháp tiếp cận tiên tiến trong lập kế hoạch và kiểm soát sản xuất hiện đại để thiết kế hệ thống sản xuất.

12.78. Tên môn học: Quản lý dự án

Mã môn học: IS026IU

Số tín chỉ: 3 lý thuyết

Mô tả nội dung môn học: Trang bị các kiến thức liên quan tới quản lý dự án bao gồm quản lý tiến độ, chi phí và chất lượng dự án.

12.79. Tên môn học: Mô hình lý thuyết trong tính toán

Mã môn học: IT063IU

Số tín chỉ: 4

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Lý thuyết tính toán tạo thành nền tảng toán học để nghiên cứu tính toán, độc lập với một tình huống cụ thể, phần cứng hoặc ngôn ngữ lập trình. Nó đưa ra các định nghĩa chính thức cho "thuật toán" là gì, "vấn đề" mà thuật toán giải quyết là gì và ý nghĩa của thuật toán để giải quyết vấn đề "hiệu quả". Lý thuyết về máy tính cho phép chúng ta chứng minh rằng một số vấn đề nhất định không thể được giải quyết bằng bất kỳ thuật toán nào, và những vấn đề khác, mặc dù có thể giải quyết được, không thể được giải quyết hiệu quả.

12.80. Tên môn học: Mạng máy tính

Mã môn học: IT091IU

Số tín chỉ: 4

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Giới thiệu các mô hình mạng như: mô hình tham chiếu các hệ thống mở OSI, mô hình TCP/IP, các kỹ thuật trong mạng LANs, WANs, mạng Internet và các dịch vụ trên Internet. Đi sâu giới thiệu về các kỹ thuật mạng trong LAN, chuẩn IEEE 802.x, các thiết bị mạng và thiết kế, xây dựng mạng LAN. Các kỹ thuật định tuyến và chọn đường trong kết nối liên mạng. Ngoài ra môn học còn giới thiệu một số kiến thức chuyên sâu vê mạng như: an toàn và bảo mật mạng, kỹ thuật mạng riên ảo, quản trị mạng.

12.81. Tên môn học: Hệ thống thông tin quản lý

Mã môn học: IT094IU

Số tín chỉ: 4

Điều kiện: Môn học tiên quyết: không

Môn học trước: không

Mô tả nội dung môn học: Khóa học này cung cấp một ứng dụng thực tế chuyên sâu của các kỹ thuật được sử dụng trong việc phát triển các giải pháp dựa trên công nghệ thông tin. Sử dụng các kỹ thuật phân tích hệ thống và quản lý dự án hiện tại, sinh viên sẽ lập kế hoạch, thiết kế và thực hiện một dự án phần mềm. Sinh viên có thể làm việc trong các nhóm do giảng viên giám sát với doanh nghiệp tài trợ. Các sản phẩm dự án điển hình bao gồm: phân tích và đánh giá các quy trình kinh doanh hiện có, đánh giá các giải pháp thay thế, thiết kế chức năng hệ thống và dữ liệu, thiết kế giao diện và kế hoạch thực hiện dự án.

12.82. Tên môn học: Thực tập tốt nghiệp

Mã môn học: CE314IU

Số tín chỉ: 1

Điều kiện: Môn học tiên quyết: không. Môn học trước: Kết cấu thép

Mô tả nội dung môn học: Môn học này được thiết kế để bổ sung cho việc học tập trên lớp bằng việc học tập theo trải nghiệm thực tiễn. Thực tập cung cấp cho sinh viên cơ hội để áp dụng kiến thức thu được trong các khóa học Kỹ thuật xây dựng vào thực tiễn công việc tại các các công ty xây dựng nước ngoài, cơ quan nhà nước và các công ty xây dựng tư nhân…

12.83. Tên môn học: Luận văn tốt nghiệp

Mã môn học: CE420IU

Số tín chỉ: 10

Điều kiện: Tích lũy ít nhất 128 tín chỉ, điểm trung bình GPA ≥ 50.

Mô tả nội dung môn học: Trong luận án, sinh viên có thể thực hiện đề án nghiên cứu, thiết kế, thẩm tra công trình xây dựng / biên soạn hồ sơ đấu thầu / thông số kỹ thuật / hợp đồng / lịch trình cho các dự án xây dựng hoặc gói xây dựng, bao gồm móng móng, sàn, dầm, cột.

TRƯỞNG KHOA	**KT. HIỆU TRƯỞNG** **PHÓ HIỆU TRƯỞNG**
Nguyễn Hoài Nghĩa	**Đinh Đức Anh Vũ**

ĐẠI HỌC QUỐC GIA
THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC QUỐC TẾ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Phụ lục 1
NỘI DUNG ĐIỀU CHỈNH CHƯƠNG TRÌNH ĐÀO TẠO
NGÀNH KỸ THUẬT XÂY DỰNG KHÓA 2023 SO VỚI KHÓA 2022

(Kèm theo Quyết định số 1182/QĐ-ĐHQT ngày 30 tháng 8 năm 2023 của Hiệu trưởng trường Đại học Quốc tế)

1. Các môn học loại bỏ khỏi chương trình đào tạo

Môn học loại bỏ khỏi CTĐT	Môn học thay thế	Lý do thay đổi
Bỏ môn bắt buộc: *CE203IU - Engineering Mechanics - Dynamics* - 3 tín chỉ (3LT+0TH)	Thay bằng môn *CE217IU - Artificial Intelligence in Civil Engineering and Construction Management*: 3 tín chỉ (3LT + 0TH)	Theo quy định của Thông tư số 17/2021/TT-BGDĐT và Quyết định số 1004/QĐ-BXD về việc phê duyệt Kế hoạch Chuyển đổi số ngành Xây dựng giai đoạn 2020 - 2025, định hướng đến năm 2030
Bỏ môn bắt buộc: *PE008IU - Critical Thinking* – 3 tín chỉ (3LT + 0TH)	Thay bằng môn *PE021IU - General Law* 3 tín chỉ (3LT + 0TH)	Theo quy định của Thông tư số 17/2021/TT-BDGĐT, và chủ trương chung của Nhà trường;
Bỏ môn tự chọn: BA167 - Introduction to Vietnamese Legal System – 3 tín chỉ (3LT+0TH)	Không	Nội dung môn học trùng với nội dung môn học bắt buộc: PE021IU - General Law 3 tín chỉ (3LT + 0TH)

2. Các môn học bổ sung vào chương trình đào tạo

- Thêm 2 môn bắt buộc.
- Thêm 4 môn tự chọn vào nhóm tự chọn chuyên ngành – CE Elective.

STT	Tên môn học	Mã môn học	Số tín chỉ (lý thuyết/ thực hành)	Loại môn học	Lý do thay đổi
1	General Law	PE021IU	3 (3,0)	Bắt buộc	Theo quy định của Thông tư số 17/2021/TT-BGDĐT
2	Artificial Intelligence in Civil Engineering and Construction Management	CE217IU	3 (3,0)	Bắt buộc	Theo quy định của Thông tư số 17/2021/TT-BGDĐT và Quyết định số 1004/QĐ-BXD về việc phê duyệt Kế hoạch Chuyển đổi số ngành Xây dựng giai đoạn 2020 - 2025, định hướng đến năm 2030
3	Building Information Management	CM310IU	3 (3,0)	Nhóm tự chọn chuyên ngành (CE Elective)	
4	Advanced Artificial Intelligence in Civil Engineering and Construction Management	CE412IU	3 (3,0)		
5	GIS Applications in Civil Engineering	CE413IU	3 (3,0)		
6	Construction Project Management	CE414IU	3 (3,0)		

Môn CE414IU Construction Project Management áp dụng từ khoá 2019 trở về sau.

3. Các điều chỉnh khác

STT	Nội dung thay đổi	Cập nhật mới	Lý do thay đổi
1	Chỉnh sửa đề cương môn học *CE213IU - Computational Methods for Civil Engineering 3 tín chỉ (3LT + 0TH*)	Đề cương môn học *CE213IU - Computational Methods for Civil Engineering 3 tín chỉ (3LT + 0TH*) theo định hướng AI	Thông tư số 17/2021/TT-BGDĐT và Quyết định số 1004/QĐ-BXD về việc phê duyệt Kế hoạch Chuyển đổi số ngành Xây dựng giai đoạn 2020 - 2025, định hướng đến năm 2030
2	Chỉnh sửa đề cương môn học *CE100IU - Introduction to Civil Engineering 1 tín chỉ (0LT+1TH)*	Đề cương môn học *CE100IU - Introduction to Civil Engineering 1 tín chỉ (0LT+1TH)* theo định hướng thực hành	Nhằm đảm bảo khối lượng thực hành là 8TC cho sinh viên theo qui định trong thông tư số 17/2021/TT-BGDĐT

3	Chỉnh sửa đề cương môn học *PE020IU - Engineering Ethics and Critical Thinking 3 tín chỉ (3LT + 0TH*)	Bổ sung mã môn học và đề cương môn học *PE022IU - Engineering Ethics and Critical Thinking 3 tín chỉ (3LT + 0TH*) bổ sung kiến thức Critical thinking	Bổ sung tư duy phản biện cho sinh viên
4	Bỏ ràng buộc môn học trước của môn *CE404IU - Dynamics of Structures* với môn *CE407IU - Tall Buildings*		Nhằm đảm bảo tiến độ học tập của sinh viên

4. Hướng xử lý cho các sinh viên khóa cũ khi chưa học các môn học bị loại bỏ khỏi chương trình đào tạo

- Đối với các sinh viên từ khóa 2022 trở về trước nếu chưa học hoặc học chưa đạt các môn học bị loại khỏi chương trình đào tạo thì có thể đăng ký học các môn thay thế theo chương trình đào tạo rà soát mới.

- Tương tự với các môn được bổ sung, điều chỉnh khác, các sinh viên từ khóa 2022 trở về trước nếu chưa học hoặc học chưa đạt các môn thuộc chương trình đào tạo cũ thì có thể học các môn thuộc chương trình đào tạo rà soát mới.

ĐẠI HỌC QUỐC GIA
THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC QUỐC TẾ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Phụ lục 2
ĐỀ CƯƠNG CHI TIẾT CÁC MÔN HỌC
(Kèm theo Quyết định số /QĐ-ĐHQT ngày tháng năm 2023
của Hiệu trưởng trường Đại học Quốc tế)

Đề cương chi tiết các môn học trong chương trình đào tạo ngành Kỹ thuật Xây dựng.

PHILOSOPHY OF MARXISM AND LENINISM

1. General Information

- Course Title:
  - Vietnamese: Triết học Mác-Lênin
  - English: Philosophy of Marxism and Leninism
- Course ID: PE015IU
- Course type

☑ General
☐ Specialization (required)
☐ Project/ Internship/ Thesis
☐ Fundamental
☐ Specialization (elective)
☐ Others : ……

- Number of credits: 3
  - Lecture: 3
  - Laboratory: 0
- Prerequisites:
- Parallel Course:
- Course standing in curriculum: Year 1

2. Course Description

Môn học cung cấp những nội dung cơ bản về thế giới quan và phương pháp luận của chủ nghĩa Mác-Lênin.

3. Textbooks and References

Textbooks: #

1. Bộ Giáo dục và Đào tạo (2019), Giáo trình Triết học Mác – Lênin, NXB Chính trị quốc gia, Hà Nội.
2. Bộ Giáo dục và Đào tạo (2012), Giáo trình Những nguyên lý cơ bản của Chủ nghĩa Mác – Lênin, NXB Chính trị quốc gia, Hà Nội.
3. Hội đồng Trung ương (2008), Giáo trình Triết học Mác – Leenin, NXB Chính trị quốc gia, Hà Nội

References:

4. Course Objectives

- Môn học trang bị cho sinh viên những nội dung cơ bản về thế giới quan, phương pháp luận triết hoc Mác – Lênin.
- Giúp cho sinh viên vận dụng những tri thức về thế giới quan, phương pháp luận triết học Mác – Lênin một cách sáng tạo trong hoạt động nhận thức và thực tiễn, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đang đặt ra.

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Hiểu biết những lý luận cơ bản nhất của Chủ nghĩa Mác-Lênin	d, g
L.O.2	Có thế giới quan, nhân sinh quan và phương pháp luận chung nhất làm nền tảng để tiếp thu các kiến thức chuyên ngành quản lý xây dựng	d, g

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	Quiz, attendance	30
A2. Midterm assessment	Midterm exam	20
A3. Final assessment	Final exam	50

7. Course Outlines

Theo quy đinh của Bộ Giáo Dục và Đào Tạo

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1-5	Triết học và vai trò của triết học trong đời sống xã hội	L.O.1	Lecture Class discussion	Quiz
6-8	Chủ nghĩa duy vật biện chứng	L.O.1	Lecture Class discussion	Quiz
9	**MIDTERM EXAM**			Written exam
10-11	Chủ nghĩa duy vật biện chứng	L.O.1	Lecture Class discussion	Quiz
12-16	Chủ nghĩa duy vật lịch sử	L.O.1, L.O.2	Lecture Class discussion	Quiz

8. Course Policy

Class Participation: A minimum attendance of 80 % is compulsory for the class sessions and 100% is compulsory for the laboratory sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Academic Honesty and Plagiarism: Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade. For this class, all assignments are to be completed by the individual student unless otherwise specified. Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for preparation, research, drafting, and the proper referencing of sources in preparing all assessment items.

POLITICAL ECONOMICS OF MARXISM AND LENINISM

1. General Information

- Course Title:
  - Vietnamese: Kinh tế chính trị Mác-Lênin
  - English: Political economics of Marxism and Leninism
- Course ID: PE016IU
- Course type

☑ General
☐ Specialization (required)
☐ Project/ Internship/ Thesis
☐ Fundamental
☐ Specialization (elective)
☐ Others : ……

- Number of credits: 2
  - Lecture: 2
  - Laboratory: 0
- Prerequisites:
- Parallel Course:
- Course standing in curriculum: Year 1

2. Course Description

Môn học trang bị cho sinh viên những nội dung cốt lõi của Kinh tế chính trị Mác – Lênin, bao gồm: Hàng hóa, thị trường và vai trò của các chủ thể trong nền kinh tế thị trường; sản xuất giá trị thặng dư trong nền kinh tế thị trường; cạnh tranh và độc quyền trong nền kinh tế thi trường; kinh tế thị trường định hướng xã hội chủ nghĩa và các quan hệ lợi ích kinh tế ở Việt Nam; công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế ở Việt Nam.

3. Textbooks and References

Textbooks: #

1. Bộ Giáo dục và Đào tạo (2019), Giáo trình Kinh tế chính trị Mác – Lênin dành cho bậc đại học không chuyên kinh tế chính trị. NXB. Chính trị quốc gia. Hà Nội.

References: #

1. Robert, J.R. và Robert F. H. (2003), Lịch sử các học thuyết kinh tế, Bản tiếng Việt, NXB Thống kê.

4. Course Objectives

- Trang bị cho sinh viên những kiến thức cơ bản, cốt lõi của Kinh tế chính trị Mác – Lênin trong bối cảnh phát triển kinh tế của đất nước và thế giới ngày nay. Đảm bảo tính cơ bản, hệ thống, khoa học, cập nhật tri thức mới, gắn với thực tiễn, tính sáng tạo, kỹ năng, tư duy, phẩm chất người học.
- Hình thành tư duy, kỹ năng phân tích, đánh giá và nhận diện bản chất của các quan hệ lợi ích kinh tế trong phát triển kinh tế - xã hội của đất nước góp phần giúp sinh viên xây dựng trách nhiệm xã hội phù hợp, xây dựng lập trường, ý thức hệ tư tưởng Mác – Lênin đối với sinh viên.

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Hiểu biết những kiến thức cơ bản, cốt lõi của Kinh tế chính trị Mác – Lênin trong bối cảnh phát triển kinh tế của đất nước và thế giới ngày nay. Đảm bảo tính cơ bản, hệ thống, khoa học, cập nhật tri thức mới, gắn với thực tiễn, tính sáng tạo, kỹ năng, tư duy, phẩm chất người học	a, d, g

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.2	Hình thành tư duy, kỹ năng phân tích, đánh giá và nhận diện bản chất của các quan hệ lợi ích kinh tế trong phát triển kinh tế - xã hội của đất nước góp phần giúp sinh viên xây dựng trách nhiệm xã hội phù hợp, xây dựng lập trường, ý thức hệ tư tưởng Mác – Lênin	a, d, g

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	Quiz, attendance	30
A2. Midterm assessment	Midterm exam	20
A3. Final assessment	Final exam	50

7. Course Outlines

Theo quy định của Bộ Giáo dục và Đào tạo

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1	Đối tượng, phương pháp nghiên cứu và chức năng của Kinh tế chính trị Mác - Lênin	L.O.1, L.O.2	Lecture Class discussion	Quiz
2-4	Hàng hóa, thị trường và vai trò của các chủ thể tham gia thị trường	L.O.1	Lecture Class discussion	Quiz
5-7	Giá trị thặng dư của nền kinh tế thị trường	L.O.1, L.O.2	Lecture Class discussion	Quiz
8	Cạnh tranh và độc quyền trong nền kinh tế thị trường	L.O.1, L.O.2	Lecture Class discussion	Quiz
9	**MIDTERM**			Written exam
10-11	Cạnh tranh và độc quyền trong nền kinh tế thị trường	L.O.1, L.O.2	Lecture Class discussion	Quiz
12-14	Kinh tế thị trường định hướng xã	L.O.1,	Lecture	Quiz

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
	hội chủ nghĩa và các quan hệ lợi ích kinh tế ở Việt Nam	L.O.2	Class discussion	
15-16	Công nghiệp hóa, hiện đại hóa và hội nhập kinh tế quốc tế của Việt Nam	L.O.1, L.O.2, L.O.3		

8. Course Policy

- Phải nghiên cứu giáo trình, chuẩn bị các ý kiến hỏi, đề xuất khi nghe giảng. Chuẩn bị thảo luận và đọc, sưu tầm các tư liệu có liên quan đến nội dung của chương.
- Dành thời gian cho việc nghiên cứu trước bài giảng dưới sự hướng dẫn của giảng viên.
- Tham dự các buổi thảo luận, các buổi lên lớp theo quy định.

SCIENTIFIC SOCIALISM

1. General Information

- Course Title:
  - Vietnamese: Chủ nghĩa xã hội khoa học
  - English: Scientific Socialism
- Course ID: PE017IU
- Course type

☑ General
☐ Specialization (required)
☐ Project/ Internship/ Thesis
☐ Fundamental
☐ Specialization (elective)
☐ Others : ……

- Number of credits: 2
  - Lecture: 2
  - Laboratory: 0
- Previous Course: PE015IU (Philosophy of Marxism and Leninism), PE016IU (Political economics of Marxism and Leninism)
- Parallel Course:
- Course standing in curriculum: Year 2

2. Course Description

Nội dung chủ yếu của môn học là cung cấp cho sinh viên những hiểu biết cơ bản có hệ thống cuả chủ nghĩa xã hội khoa học.

3. Textbooks and References

Textbooks: #

1. Bộ Giáo dục và Đào tạo (2019), Giáo trình Chủ nghĩa xã hội khoa học, NXB Chính trị quốc gia, Hà Nội.
2. Bộ Giáo dục và Đào tạo (2012), Giáo trình Những nguyên lý cơ bản của Chủ nghĩa Mác – Lênin, NXB Chính trị quốc gia, Hà Nội.
3. Hội đồng Trung ương (2008), Giáo trình Chủ nghĩa xã hội khoa học, NXB Chính trị quốc gia, Hà Nội

References:

4. Course Objectives

- Môn học cung cấp những nội dung cơ bản cuả chủ nghĩa xã hội khoa học.
- Giúp sinh viên vận dụng những tri thức cơ bản của chủ nghĩa xã hội khoa học một cách sáng tạo trong hoạt động nhận thức và thực tiên, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đặt ra.

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Hiểu biết những lý luận cơ bản nhất của chủ nghĩa xã hội khoa học	d, g
L.O.2	Có thể vận dụng những tri thức cơ bản của chủ nghĩa xã hội khoa học một cách sáng tạo trong hoạt động nhận thức và thực tiên, nhằm giải quyết những vấn đề mà đời sống xã hội của đất nước, của thời đại đặt ra.	d, g

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	Quiz, attendance	30
A2. Midterm assessment	Midterm exam	20
A3. Final assessment	Final exam	50

7. Course Outlines

Theo quy đinh của Bộ Giáo Dục và Đào Tạo

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1	Nhập môn chủ nghĩa xã hội khoa học	L.O.1	Lecture Class discussion	Quiz
2-4	Sứ mệnh lịch sử của giai cấp công nhân	L.O.1	Lecture Class discussion	Quiz
5-7	Chủ nghĩa xã hội và thời kỳ quá độ lên chủ nghĩa xã hội	L.O.1	Lecture Class discussion	Quiz
8	Dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa	L.O.1, L.O.2	Lecture Class discussion	Quiz
9	**MIDTERM EXAM**			Written exam
10	Dân chủ xã hội chủ nghĩa và nhà nước xã hội chủ nghĩa	L.O.1, L.O.2	Lecture Class discussion	Quiz
11-12	Cơ cấu xã hội – giai cấp và liên minh giai cấp, tầng lớp trong thời kỳ quá độ lên chủ nghĩa xã hội	L.O.1, L.O.2	Lecture Class discussion	Quiz
13-14	Vấn đề dân tộc và tôn giáo trong thời kỳ quá độ lên chủ nghĩa xã hội	L.O.1, L.O.2	Lecture Class discussion	Quiz
15-16	Vấn đề gia đình trong thời kỳ quá độ lên chủ nghĩa xã hội	L.O.1, L.O.2	Lecture Class discussion	Quiz

8. Course Policy

Class Participation: A minimum attendance of 80 % is compulsory for the class sessions and 100% is compulsory for the laboratory sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Academic Honesty and Plagiarism: Instances of academic dishonesty will not be tolerated.

Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade. For this class, all assignments are to be completed by the individual student unless otherwise specified. Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for preparation, research, drafting, and the proper referencing of sources in preparing all assessment items.

HISTORY OF VIETNAMESE COMMUNIST PARTY

1. General Information

- Course Title:
  - Vietnamese: Lịch sử Đảng Cộng Sản Việt Nam
  - English: History of Vietnamese Communist Party
- Course ID: PE018IU
- Course type

☑ General
☐ Specialization (required)
☐ Project/ Internship/ Thesis
☐ Fundamental
☐ Specialization (elective)
☐ Others : ……

- Number of credits: 2
  - Lecture: 2
  - Laboratory: 0
- Previous Course: PE015IU (Philosophy of Marxism and Leninism), PE016IU (Political economics of Marxism and Leninism), PE017IU (Scientific Socialism)
- Parallel Course:
- Course standing in curriculum: Year 2

2. Course Description

Cung cấp những tri thức có tính hệ thống, cơ bản về sự ra đời của Đảng Cộng sản Việt Nam (1920-1930), sự lãnh đạo của Đảng đối với cách mạng Việt Nam trong thời kỳ đấu tranh giành chính quyền (1930-1945), trong hai cuộc khánh chiến chống thực dân Pháp và đế quốc Mỹ xâm lược (1945-1975), trong sự nghiệp xây dựng, bảo vệ tổ quốc thời kỳ cả nước quá độ lên chủ nghĩa xã hội, tiến hành công cuộc đổi mới (1975-2018).

3. Textbooks and References

Textbooks: #

1. Bộ Giáo dục và Đào tạo (2019), Chương trình môn học Lịch sử Đảng Cộng sản Việt Nam, ban hành 2019.
2. Hội đồng Trung ương chỉ đạo biên soạn giáo trình quốc gia các môn khoa học Mác-Lênin, tư tưởng Hồ Chí Minh (2018), Giáo trình Lịch sử Đảng Cộng sản Việt Nam, HXB. Chính trị quốc gia, Hà Nội.

4. Course Objectives

1. Cung cấp cho sinh viên hiểu biết về lịch sử của Đảng Cộng sản Việt Nam. Xây dựng cho sinh viên niềm tin vào sự lãnh đạo của Đảng, theo mục tiêu, lý tưởng của Đảng.
2. Giúp sinh viên vận dụng kiến thức chuyên ngành để chủ động, tích cực trong giải quyết những vấn đề kinh tế, chính trị, văn hoá, xã hội theo đường lối, chính sách, pháp luật của Đảng và Nhà nước.

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Hiểu rõ những nội dung cơ bản của đường lối cách mạng của Đảng Cộng sản Việt Nam, trong đó chủ yếu tập trung vào đường lối của Đảng thời kỳ đổi mới trên một số lĩnh vực cơ bản của đời sống xã hội phục vụ cho cuộc sống và công tác.	d, g
L.O.2	Vận dụng kiến thức chuyên ngành để chủ động, tích cực trong giải quyết những vấn đề kinh tế, chính trị, văn hoá, xã hội theo đường lối, chính sách, pháp luật của Đảng và Nhà nước.	d, g

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	Quiz, attendance	30
A2. Midterm assessment	Midterm exam	20
A3. Final assessment	Final exam	50

7. Course Outlines

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1	Đối tượng, chức năng, nhiệm vụ, nội dung và phương pháp nghiên cứu, học tập lịch sử Đảng Cộng sản Việt Nam	L.O.1, L.O.2	Lecture Class discussion	Quiz
2-6	Đảng Cộng sản Việt Nam ra đời và lãnh đạo đấu tranh giành chính quyền (1930-1945)	L.O.1	Lecture Class discussion	Quiz
7-11	Đảng lãnh đạo hai cuộc kháng chiến, hoàn thành giải phóng dân tộc, thống nhất đất nước (1945-1975)	L.O.1, L.O.2	Lecture Class discussion	Quiz
12-15	Đảng lãnh đạo cả nước quá độ lên Chủ nghĩa Xã hội và tiến hành công cuộc đổi mới (1975-2018)	L.O.1, L.O.2	Lecture Class discussion	Quiz

8. Course Policy

Class Participation: A minimum attendance of 80 % is compulsory for the class sessions and 100% is compulsory for the laboratory sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Academic Honesty and Plagiarism: Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade. For this class, all assignments are to be completed by the individual student unless otherwise specified. Students are

also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for preparation, research, drafting, and the proper referencing of sources in preparing all assessment items.

HO CHI MINH'S THOUGHTS

1. General Information

- Course Title:
  - Vietnamese: Tư tưởng Hồ Chí Minh
  - English: Ho Chi Minh's Thoughts
- Course ID: PE019IU
- Course type

☑ General
☐ Specialization (required)
☐ Project/ Internship/ Thesis
☐ Fundamental
☐ Specialization (elective)
☐ Others : ……

- Number of credits: 2
  - Lecture: 2
  - Laboratory: 0
- Previous Course: PE015IU (Philosophy of Marxism and Leninism), PE016IU (Political economics of Marxism and Leninism), PE017IU (Scientific Socialism)
- Parallel Course:
- Course standing in curriculum: Year 2

2. Course Description

Môn học trang bị cho sinh viên những kiến thức cơ bản về: Đối tượng, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh; về cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; về độc lập dân tộc và chủ nghĩa xã hội; về Đảng Cộng sản và Nhà nước Việt Nam; về đại đoàn kết dân tộc và đoàn kết quốc tế; về văn hóa, đạo đức, con người.

3. Textbooks and References

Textbooks: #

1. Bộ Giáo dục và Đào tạo (2019), Giáo trình Tư tưởng Hồ Chí Minh. NXB. Chính trị quốc gia. Hà Nội.
2. Khoa Chính trị - Hành chính, ĐHQG-HCM, Tài liệu hướng dẫn học tập Tư tưởng Hồ Chí Minh.
3. Hồ Chí Minh (2011), Toàn tập, NXB. Chính trị quốc gia Sự thật, Hà Nội.
4. Hồ Chí Minh (2016), Biên niên tiểu sử, NXB. Chính trị quốc gia Sự thật, Hà Nội.

4. Course Objectives

- Trang bị cho sinh viên những kiến thức cơ bản về khái niệm, nguồn gốc, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh; những nội dung cơ bản của tư tưởng Hồ Chí Minh; sự vận dụng của Đảng Cộng sản Việt Nam trong cách mạng dân tộc dân chủ và cách mạng xã hội chủ nghĩa, trong công cuộc đổi mới đất nước hiện nay.

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Hiểu biết có tính hệ thống về tư tưởng, đạo đức, giá trị văn hoá, Hồ Chí Minh.	d, e, g
L.O.2	Hiểu biết về nền tảng tư tưởng, kim chỉ nam hành động của Đảng và của cách mạng nước ta.	d, g
L.O.3	Thấm nhuần đạo đức con người mới.	d, e, g

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	Quiz, attendance	30
A2. Midterm assessment	Midterm exam	20
A3. Final assessment	Final exam	50

7. Course Outlines

Theo quy định của Bộ Giáo dục và Đào tạo

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1	Khái niệm, đối tương, phương pháp nghiên cứu và ý nghĩa học tập môn tư tưởng Hồ Chí Minh	L.O.1, L.O.2	Lecture Class discussion	Quiz
2-4	Cơ sở, quá trình hình thành và phát triển tư tưởng Hồ Chí Minh	L.O.1	Lecture Class discussion	Quiz
5-7	Tư tưởng Hồ Chí Minh về độc lập dân tộc gắn liền với Chủ nghĩa xã hội	L.O.1, L.O.2	Lecture Class discussion	Quiz
8	Tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam và nhà nước của nhân dân, do nhân dân và vì nhân dân	L.O.1, L.O.2	Lecture Class discussion	Quiz
9	**MIDTERM**			Written exam
10-11	Tư tưởng Hồ Chí Minh về Đảng Cộng sản Việt Nam và nhà nước của nhân dân, do nhân dân và vì nhân dân	L.O.1, L.O.2	Lecture Class discussion	Quiz
12-14	Tư tưởng Hồ Chí Minh về đại đoàn kết dân tộc và đoàn kết quốc tế	L.O.1, L.O.2	Lecture Class discussion	Quiz
15-16	Tư tưởng Hồ Chí Minh về văn hóa, đạo đức, con người	L.O.1, L.O.2, L.O.3		

8. Course Policy

- Phải nghiên cứu giáo trình, chuẩn bị các ý kiến hỏi, đề xuất khi nghe giảng. Chuẩn bị thảo luận và đọc, sưu tầm các tư liệu có liên quan đến nội dung của chương.
- Dành thời gian cho việc nghiên cứu trước bài giảng dưới sự hướng dẫn của giảng viên.
- Tham dự các buổi thảo luận, các buổi lên lớp theo quy định.

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY

COURSE SYLLABUS
General Law
PE021IU

1. General information

Department	Office of Academic Affairs
Course classification	Foundation course
Course designation	Face to face
Semester(s) in which the course is taught	All semesters in each academic year
Person responsible for the course	Dr. Vo Tuong Huan LLM. Bui Doan Danh Thao
Language	English
Relation to curriculum	Compulsory
Teaching methods	Student-centred approach
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 hours) Contact hours (lecture, in class discussions): 37.5 hours (=45 periods) Private study including examination preparation, specified in hours[1]: 90 hours
Credit points	3
Required and recommended prerequisites for joining the course	N/A

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>The overarching aims of this course are to:
• Provide essential knowledge of Vietnamese legal system through integrated technology and real cases for social and cultural sustainability.
• Raise awareness of responsibility toward others and how to stand for ending all types of legal violations, especially corruption in various social contexts.
• Practice necessary skills to act as an ambassador to ensure social fairness and global equitable rights.
• Use integrated online legal resources and communication tools to help the community to identify issues and develop countermeasures.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Apply appropriate legal knowledge in the Vietnamese legal system to solve legal issues in various social contexts for a fair sustainable lifelong being.
CLO1.1. Apply general knowledge on state and law to solve legal issues in various social contexts for a fair sustainable lifelong being.
CLO1.2. Apply principle legal norms in some law branches such as constitution, civil, criminal, labor and administrative law to solve legal issues in various social contexts for a fair sustainable lifelong being.</td></tr>
<tr><td>Skill</td><td>CLO2. Communicate knowledge in the Vietnamese legal system to encourage people to raise their legal rights aiming for fair social/cultural moves.
CLO3. Integrate ICTs to solve legal issues in various social contexts.</td></tr>
<tr><td>Attitude</td><td>CLO4. Detect the responsibility to ensure social and cultural fairness, including ending corruption, in various social contexts through understanding importance of law in social contexts.
CLO5. Respond to the base for coexistence in various social contexts.</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The course will introduce students to Vietnamese legal systems. In particular, students will understand their rights and obligations in the Constitution, Criminal law, administrative law, civil law, labor law and enterprise law of Vietnam. From this, students will raise awareness towards their responsibility to ensure justice, including ending corruption, in society.</td></tr>
<tr><td>Examination forms</td><td>Multiple choice questions
Case-based exams
Essay exams
Oral exams</td></tr>
</table>

Study and examination requirements

To pass this course, the students must:

- Achieve a composite mark of at least 50; and
- Make a satisfactory attempt at all assessment tasks (see below).

GRADING POLICY

Grades can be based on the following:

Assignment	20%
Midterm examination	30%
Final examination	50%
Total	100%

COURSE POLICIES

Attendance

Regular and punctual attendance at lectures and seminars is expected in this course. University regulations indicate that if students attend less than eighty percent of scheduled classes they may be refused final assessment. Exemptions may only be made on eligible medical grounds.

Workload

It is expected that the students will spend at least *six* hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where they need to complete assignments or prepare for examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. They should take the required workload into account when planning how to balance study with part-time jobs and other activities.

General Conduct and Behaviour

The students are expected to conduct themselves with consideration and respect for the needs of fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students will be asked to leave the class. The use of laptops is also encouraged during law lessons only to search for materials online. More information on student conduct is available on the university webpage.

Keeping informed

The students should take note of all announcements made in lectures or on the course's Blackboard, and another announced mean of communications. From time to time, the university will send important announcements to their university e-mail addresses without providing a paper copy. The students will be deemed to have received this information.

Academic honesty and plagiarism

Plagiarism is the presentation of the thoughts or work of another as one's own. Students are also reminded that careful time management is an important part of the study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and

	the proper referencing of sources in preparing all assessment items. The university regards plagiarism as a form of academic misconduct and has very strict rules regarding plagiarism. **Special consideration** Requests for special consideration (for final examination only) must be made to the Office of Academic Affairs within one week after the examination. General policy and information on special consideration can be found at the Office of Academic Affairs. Absence on the Mid-term is not allowed, or in special cases approved by Lecturer can be replaced with relevant Assignment. **Meeting up with the lecturers after classes** Students must make an appointment via emails if they want to meet up with the lecturer after classes and be on time. If there are any changes to the scheduled time, students must inform the lecturer immediately.
Reading list	Please note that it is very important to gain familiarity with the subject matter in the readings and cases available on Blackboard and the internet *before* attendance in classes. **Required Course Texts and Materials** Legal Texts: 1. Constitution of Vietnam - 2013 2. Civil Code of Vietnam - 2015 3. Criminal Code of Vietnam – 2015 (amended in 2017) 4. Law on Law on Handling of Administrative Violations 2012 5. Law on Enterprises – 2020 6. Labour Code 2019 7. Law on anti-corruption 2018 Available at https://luatvietnam.vn/ or Blackboard Books: • PGS.TS. Phan Trung Hien, *Giáo trình Pháp Luật Đại cương*, NXB Chính Trị Quốc Gia Sự Thật 2022. • Mai Hong Quy (Chief Editor) (2nd 2017), *Introduction to Vietnamese Law,* Hong Duc Publishing House. Additional materials provided in Blackboard The lecturer will attempt to make lecture notes and additional reading available on Blackboard. However, this is not an automatic entitlement for students doing this subject. Note that this is not a distance learning course, and you are expected to attend lectures and take notes. This way, you will get the added benefit of class interaction and demonstration. **Optional Course Texts and Materials** Recommended Internet sites UNCTAD (United Nations Conference on Trade and Development) WTO (World Trade Organization) MOIT - Vietnam (Official website of Ministry of Industry and Trade) MPI - Vietnam (Official website of Ministry of Planning and Investment)

	Other Resources, Support and Information Additional learning assistance is available for students in this course and will be made available on Blackboard. Academic journal articles are available through connections via the VNU - Central Library. Recommended articles will be duly informed to the students. Books: • Nguyen Phu Trong, *Kiên quyết, kiên trì đấu tranh phòng, chống tham nhũng, tiêu cực, góp phần xây dựng đảng và nhà nước ta ngày càng trong sạch, vững mạnh*, NXB Chính Trị Quốc Gia Sự Thật 2023. • University of Law Ho Chi Minh City, *Giáo trình luật Hiến pháp Việt nam*, NXB Hồng Đức 2023. • University of Law Ho Chi Minh City, *Giáo trình Luật hành chính*, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, *Giáo trình Luật hình sự Việt Nam*, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, *Giáo trình Luật dân sự Việt Nam*, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, *Giáo trình Luật lao động Việt Nam*, NXB Hồng Đức 2022. • University of Law Ho Chi Minh City, *Giáo trình pháp luật về chủ thể kinh doanh*, NXB Hồng Đức 2022.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (SLO) (1-5) and Program/Student Learning Outcomes (PLO/SLO) (1 - 10) is shown in the following table:

	PLO/SLO									
SLO	**1**	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	R,M					R,M	R,M	R,M	R,M	R,M
2			R,M							
3			R,M							
4				R,M						
5					R,M					

R: Reinforced
M: Mastery

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	**Introduction to State** • What is State? • Nature of state • Forms of state • Functions of state • Introduction to structure of Vietnamese state	1-5 (level I - introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT - Introduction to Vietnamese legal system available on Blackboard

2	**Introduction to law?** • What is law? • Nature of law • Forms of law • Structure of law • Categorization of legal system. • Enforcement • Breach of law and liabilities for breach of law • Introduction to structure of Vietnamese legal system	1-5 (level I - introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT - Introduction to Vietnamese legal system available on Blackboard
3	**Constitutional Law** • General introduction on Vietnamese Constitution and its nature and basic principles. • Political, economic and other regimes of Vietnam • Basic rights and responsibilities of citizens. Relationship between citizens and the State. • Structure, functions and duties of Vietnamese state, especially in prevention of corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPTs – Constitutional law available on Blackboard Constitution 2013 available on Blackboard
4	**Constitutional Law (Cont)** • Structure and functions and duties of Vietnamese state • Duties of the state in prevention of corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPTs – Constitutional law available on Blackboard Constitution 2013 available on Blackboard
5	**Administrative Law** • Definition and nature of administrative law • Administrative law violations • Liabilities for breach of administrative law, exemption from the liability	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies and law on anti-corruption	PPT– Administrative law available on Blackboard Law on handling administrative violations 2012, and Law on anti-corruption 2018 available on Blackboard
6	**Criminal Law** • Definition and nature of criminal law	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance	Discussions Case studies, especially cases related	PPT– Criminal law available on Blackboard

	• Crimes • Punishments		evaluations	to corruption	Criminal code 2015 available on Blackboard
7	**Criminal Law (Cont)** • Crimes related to corruption • Punishments for corruption	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies, especially cases related to corruption	PPT– Criminal law available on Blackboard Criminal code 2015 available on Blackboard
8	**Revision for mid-term exam**		Quizzes Projects		
9	**Civil Law (Part I)** • Definition and nature Civil law relationship • Subject of civil law • Property and ownership • Civil transactions	1-5 (Level R - reinforced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Civil law available on Blackboard Civil code 2015 available on Blackboard
10	**Civil Law (Part II)** • Contracts - Definitions - Formation of contracts - Validity of contracts - Liability for breach of contracts	1-5 (Level M - Mastery)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Civil law available on Blackboard Civil code 2015 available on Blackboard
11	**Civil Law (Part III)** • Inheritance - Testamentary inheritance - Intestacy	1-5 (Level M - Mastery)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Civil law available on Blackboard Civil code 2015 available on Blackboard
12	**Law on Enterprises** • Introduction to law on enterprises • Introduction to forms, features, establishment, reorganization and dissolution of an enterprise	1-5 (Level I - Introduced)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Law on enterprises available on Blackboard Law on enterprises 2020 available on Blackboard
13	**Labor Law** • Definition, and nature of labour law • Employees and employers • Working time, and resting time • Salary (including salary for overtime working hours)	1-5 (Level M - Mastery)	Tests Peer evaluations Class-performance evaluations	Discussions Case studies	PPT– Labor law available on Blackboard Labor code 2019 available on Blackboard
14	**Labour Law** (Cont.)	1-5 (Level M -	Tests Peer evaluations	Discussions Case studies	PPT– Labor law available on

	• Employment contracts • Labor disciplines • Dispute settlements	Mastery)	Class-performance evaluations		Blackboard Labor code 2019 available on Blackboard
15	**Revision/ Tutoring classes**		Quizzes Projects		

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**
In class evaluation (20%)	70% pass	80% pass	100% pass	100% pass	100% pass
Midterm examination (30%)	70% pass	80% pass	100% pass	100% pass	100% pass
Final examination (50%)	70% pass	80% pass	100% pass	100% pass	100% pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics

No.	CLOs	Criteria	COMPLETELY FAIL Below 30%	INADEQUATE 30% – 49%	ADEQUATE 50% - 69%	ABOVE AVERAGE 70% - 89%	EXEMPLARY ≥ 90%
1	CLO 1	**Organisation and clarification**	No evidence of organization and coherence	Does not organise ideas logically and with clarification Limited evidence of coherence Ideas lack consistence	Generally organised logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped	Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
2		**Originality and usefulness of the analysis**	Shows no ability to identify legal issues or a clear inability to gather the facts	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify legal issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify legal issues, gather the fact and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained	Shows strong ability to identify legal issues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported
3		**Use of data/information**	Shows no effort to incorporate information from primary and secondary sources	Shows little information from sources. Poor handling of sources	Shows moderate amount of source information incorporated. Some key points supported by sources. Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	Draws upon sources to support most points. Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly	Draws upon primary and secondary source information in useful and illuminating ways to support key points. Excellent integration of quoted material into paragraphs. Source cited correctly
4	CLO2	**Use of frameworks**	Shows no effort to structure	Shows limited ability to structure	Shows effort to link problems with the theoretical	Shows ability to structure problems in	Shows ability to structure problems in correspondence to

			problems in correspondence to theoretical frameworks	problems in correspondence to theoretical frameworks	frameworks. There are still some mistakes	correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems	theoretical frameworks correctly. The problems are well resolved
5		**Quality of arguments**	Shows no effort to construct logical arguments. Fails to support analysis	Shows little attempt to offer support for key claims or to relate evidence to analysis. Reasons offered are irrelevant.	Shows argument of poor quality. Weak, undeveloped reasons are offered to support key claims	Shows clear, relevant and logical arguments.	Shows identifiable, reasonable and sound arguments. Clear reasons are offered to support key claims.

Ho Chi Minh City, May 2023

Head of Office of Academic Affairs

Huỳnh Khả Tú

CALCULUS 1

1. General Information

- Course Title
  - Vietnamese: Toán 1
  - English: Calculus 1
- Course ID: MA001IU
- Course type

  ☑ General
  ☐ Specialization (required)
  ☐ Project/ Internship/ Thesis
  ☐ Fundamental
  ☐ Specialization (elective)
  ☐ Others : ……
- Number of credits: 4
  - Lecture: 4
  - Laboratory: 0
- Prerequisites: None
- Parallel Course:
- Course standing in curriculum: Year 1

2. Course Description

Functions; Limits; Continuity; Derivatives, Differentiation, Derivatives of Basic Elementary Functions, Differentiation Rules; Applications of Differentiation: l'Hôpital's Rule, Optimization, Newton's Method; Anti-derivatives; Indefinite Integrals, Definite Integrals, Fundamental Theorem of Calculus; Techniques of Integration; Improper Integrals; Applications of Integration.

3. Textbooks and References

Textbooks: #

1. J. Stewart, Calculus. Concepts and Contexts, 5th ed., Thomson Learning, 2005

References:

J. Rogawski, Calculus, Early Transcendentals, W.H. Freeman, 2008.

4. Course Objectives

- Understand the main ideas and techniques of calculus, concerning limits, continuity, differentiation and integration.#
- Develop skills in mathematical modeling and problem solving, in thinking logically, and in creatively applying existing knowledge to new situations#
- Develop confidence and fluency in discussing mathematics in English#

5. Learning Outcomes

Learning Outcome Codes	Course Learning Outcomes	Program Learning Outcomes (*)
L.O.1	Understand the main ideas and techniques of calculus, concerning limits, continuity, differentiation and integration.	a, d
L.O.2	Develop skills in mathematical modeling and problem solving, in thinking logically, and in creatively applying existing knowledge to new situations	a, d
L.O.3	Develop confidence and fluency in discussing mathematics in English	c

(*) Refer to ABET student outcomes

(a) an ability to identify, formulate, and solve engineering and management related problems by applying principles of engineering, science, and mathematics which are necessary for

engineers of construction management.

(b) an ability to apply engineering and management to produce construction project feasibility study and appraisal that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

(c) an ability to communicate effectively with a range of audiences

(d) an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering and management solutions in global, economic, environmental, and societal contexts

(e) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(f) an ability to develop and conduct appropriate construction management research, analyze and interpret data, and use engineering judgment to draw conclusions

(g) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

6. Course Assessment

Assessment Component	Assessment form	Percentage %
A1. Process assessment	A1.1. Assignments	20
A2. Midterm assessment	A2.1 Mid-term exam	20
A3. Final assessment	A3.1 Final exam	60

7. Course Outlines

Theory

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
1	1.1 What is Calculus? 1.2 Straight Lines. Equations of Lines 1.3 Functions and Graphs	L.O.1, L.O.2, L.O.3	Lecture	Homework
2	1.4 Parametric Curves 1.5 Definition of a Limit. One-sided Limits	L.O.1, L.O.2, L.O.3	Lecture	Homework
3	1.8 Continuity 1.9 The Intermediate Value Theorem 1.10 Limits Involving Infinity	L.O.1, L.O.2, L.O.3	Lecture	Homework
4	2.1 The Tangent and Velocity Problems. Rates of Change 2.2 The Derivative. Higher-Order Derivatives Rules of Differentiation. Finding Derivatives using Maple	L.O.1, L.O.2, L.O.3	Lecture	Homework
5	2.3 Rates of Change in the Natural and Social Sciences Implicit Differentiation	L.O.1, L.O.2, L.O.3	Lecture	Homework
6	2.4 Differentiation of Inverse Functions Linear Approximations. Differentials	L.O.1, L.O.2, L.O.3	Lecture	Homework
7	3.1 Related Rates 3.2 Maxima and Minima. Critical Points The Mean Value Theorem. The First	L.O.1, L.O.2, L.O.3	Lecture	Homework

Week	Content	Learning Outcome	Teaching and learning activities	Assessment
	Derivative Test. Concavity. Shapes of Curves.			
Midterm Exam				
8	3.3 Curve Sketching. Graphing with Calculus and Computers using Maple 3.4 Indeterminate Forms and l'Hôpital's Rules Maxima and Minima Problems	L.O.1, L.O.2, L.O.3	Lecture	Homework
9	3.1 Newton's Method Anti-derivatives and Indefinite Integrals	L.O.1, L.O.2, L.O.3	Lecture	Homework
10	4.1 Areas under Curves and Distances 4.2 The Definite Integral 4.3 Properties of the Definite Integral. The Fundamental Theorem of Calculus	L.O.1, L.O.2, L.O.3	Lecture	Homework
11	4.4 Integration by Substitution 4.6 Integration by Parts 4.7 Additional Techniques of Integration. Partial Fractions	L.O.1, L.O.2, L.O.3	Lecture	Homework
12	4.8 Integration Using table and Computer Algebra Systems 4.9 Numerical Integration 4.10 Improper Integrals	L.O.1, L.O.2, L.O.3	Lecture	Homework
13	5.1 Areas between Curves 5.2 Areas Enclosed by Parametric Curves 5.3 Volumes	L.O.1, L.O.2, L.O.3	Lecture	Homework
14	5.4 Arc Length 5.5 Average Value of a Function	L.O.1, L.O.2, L.O.3	Lecture	Homework
15	Applications to Engineering, Economics and Science	L.O.1, L.O.2, L.O.3	Lecture	Homework
Final Exam				

8. Course Policy

Students should spend time to read documents and do homework, exercise, group assignment. Students are encouraged to discuss, ask questions and give comments to lecturers. Plagiarism in assignments is forbidden. According to the International University's regulation, attending the class less than 80% of periods is not allowed to take the final examinations.

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Mathematics

COURSE SYLLABUS

Course Name: Calculus 2

Course Code: **MA003IU**

1. General information

Course designation	This course is a continuation of Calculus 1. Its aim to equip student with basis concepts of sequence, series, vector functions, functions of several variables, multiple integrals and their applications
Semester(s) in which the course is taught	1, 2
Person responsible for the course	*Assoc. Prof.Mai Duc Thanh, Assoc. Prof. Tran Vu Khanh, Dr. Nguyen Minh Quan, Dr. Nguyen Anh Tu, Dr. Ta Quoc Bao.*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 170 Contact hours (whether lecture, exercise, laboratory session, etc.): 50 (lectures) Private study including examination preparation, specified in hours[1]: 120
Credit points	**4 credits/6.18 ECTS**
Required and recommended prerequisites for joining the course	Calculus 1

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>

1. To provide students with the main ideas and techniques of calculus. These include sequences, series, functions of several variables, optimal problems, multiple integrals, vector calculus.
2. To introduce practical applications of these ideas and techniques, through practical examples taken from many areas of engineering, business, and life sciences.
3. To develop skills in mathematical modelling and problem solving, ability to think logically, and adapt these skills creatively to new situations

</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Have basic knowledge of series, functions of several variables, mupliple integrals (Program outcomes: a)
CLO2. Have basic knowledge of vector calculus (Program outcomes: a)</td></tr>
<tr><td>Skill</td><td>CLO3. Can compute partial derivatives, multiple integral (Program outcomes: a, j)
CLO4. Can show the convergence of a sequence and a series and u, se power series to simplify computation. Can show the optimal problem using partial derivaties, can find the volume of an object in higher dimension by using the multiple integrals (Program outcomes: i, h)</td></tr>
<tr><td>Attitude</td><td>CLO5. Confident when dealing with partial derivaties, multiple integrals. Comfortable with using partial derivatives and multiple integrals in practical situations. (Program outcome: j, k)</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (4 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Sequences and Convergence</td><td>1</td><td>I, T</td></tr>
<tr><td>Series</td><td>1</td><td>I, T</td></tr>
<tr><td>Tests for Convergence</td><td>1</td><td>T, U</td></tr>
<tr><td>Power series</td><td>1</td><td>T, U</td></tr>
<tr><td>Representations of Functions as Power series</td><td>1</td><td>T, U</td></tr>
<tr><td>Taylor and Maclaurin series</td><td>1</td><td>T, U</td></tr>
<tr><td>Vector Functions and Space Curves, Limit and continuity of vector functions</td><td>1</td><td>I, T</td></tr>
<tr><td>Derivatives and Integrals of vector functions, Length of space curves</td><td>1</td><td>T, U</td></tr>
<tr><td>Functions of Several Variables, Limits and Continuity</td><td>1</td><td>I,T</td></tr>
<tr><td>Partial Derivatives, Tangent Plane and Linear Approximations</td><td>1</td><td>T, U</td></tr>
<tr><td>Chain Rules, Directional Derivatives and Gradient</td><td>1</td><td>T, U</td></tr>
<tr><td>Maximum and Minimum Values of Functions of two variables</td><td>1</td><td>T, U</td></tr>
<tr><td>Lagrange Multipliers and Applications</td><td>1</td><td>T, U</td></tr>
<tr><td>Double Integrals in Rectangles, Iterated Integrals</td><td>1</td><td>I, T</td></tr>
<tr><td>Double, Triple Integrals in General regions and Applications</td><td>2</td><td>T,U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Written examination</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list</td><td>J. Stewart, Calculus, Thomson Learning, 7th edition, 2012.</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (a-k) and Program/Student Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3										x	
4										x	
5										x	x

3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	Sequences, Series, The Integral Test and Estimates Sums, The comparison Tests	2, 4	HW	Lectures and Quiz
2	Alternating Series, Absolute Convergence and the Ratio and Roots Tests, Strategy for Testing Series	2, 4	HW	Lectures and Quiz
3	Power Series, Representations of Functions as Power Series, Taylor & Maclaurin Series, Applications of Taylor Polynomials	4, 5	Quiz	Lectures and Quiz
4	3D Coordinate Systems, Vectors, The Dot Product, The Cross Product, Equations of Lines and Planes, Functions of Surface.	2, 4	HW	Lectures and Quiz
5	Vector Functions and Space Curves, Derivaties and Integrals of Vector Functions, Arc Length, Parametric Surfaces	4, 5	HW	Lectures and Quiz
6	Functions of Several Variables, Limit and Continuty,	2, 4, 5	Quiz	Lectures and Quiz
7	Partial Derivatives, Tangent Plances and Linear	3, 5	HW	Lectures and Quiz

	Approximations,			
8	Chain Rule, Directional Derivaties and Gradient Vectors,	3, 5	HW	Lectures and Quiz
Midterm Exam				
9	Maximun and Minimun Values, Larange Multipliers	2, 4	HW	Lectures and Quiz
10	Double Integrals over Rectangles, Iterated Integrals, Double Integrals over General Regions	2, 4	HW	Lectures and Quiz
11	Double Integrals in Polar Coordinates, Application of Double Integrals.	4, 5	HW	Lectures and Quiz
12	Triple Integrals, Triple Integrals in Cylindrical and Spherial Coordinates. Change of Variables in Multiple Integrals	2, 4	Quiz	Lectures and Quiz
13	Vector Fields, Line Integrals, the Fundamental Theorem for Line Integrals	4, 5	HW	Lectures and Quiz
14	Green's Theorem, Curl and Divergence, Surface Integrals	2, 4, 5	HW	Lectures and Quiz
15	Stokes' Theorem, Divergence Theorem.	1, 2, 3, 4,	Exercises	
Final Exam				

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80%Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass

Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80%Pass		Q3, Q4 70%Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: January 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Mathematics

COURSE SYLLABUS

Course Name: Differential Equations

Course Code: **MA024IU**

1. General information

Course designation	This course introduces fundamental mathematical methods and analysis in ordinary differential equations and their applications and a short introduction to partial differential equations.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 170 Contact hours (whether lecture, exercise, laboratory session, etc.): 50 (lectures) Private study including examination preparation, specified in hours[1]: 120
Credit points	**4 credits/6.18 ECTS**
Required and recommended prerequisites for joining the course	None

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>

1. This course introduces the theory of ordinary differential equations. Topics discussed include first-order differential equations, existence and uniqueness theorems, second-order linear equations, higher-order linear equations, systems of equations, non-linear equations.
2. The relationship between differential equations and linear algebra is emphasized in this course.
3. Applications of differential equations in physics, engineering, biology, and economics are presented.
4. This course also gives a very brief introduction to partial differential equations in particular using separation variables to solve heat equation, wave equation, and Laplace equation.

</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the concepts of differential equations and the methods to solve linear first/second differential equations. (Program outcomes: a)

CLO2. Understand the method to solve linear n-th order differential equations. Know how to use separation of variable to solve the heat equation, wave equation and Laplace equation (Program outcomes: a)</td></tr>
<tr><td>Skill</td><td>CLO3. Can solve basic first order differential equations, higher order differential equations with constant coefficients and first order systems. (Program outcomes: a, j)

CLO4. Can use partial differential equations to model and study real phenomena (Program outcomes: a, j)</td></tr>
<tr><td>Attitude</td><td>CLO5. Confident when applying differential equations to practical situations. (Program outcome: j, k)</td></tr>
</table>
</td></tr>
</table>

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (4 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
Introduction Some Basic Mathematical Models; Direction Fields Solutions of Differential Equations Classification of Differential Equations	**1**	**I, T**
First-order differential equations Linear Equations Method of Integrating Factors Separable Equations Modeling with First Order Equations	**1**	**T, U**
Differences Between Linear and Nonlinear Equations Autonomous Equations and Population Dynamics Exact Equations and Integrating Factors	**1**	**T,U**
Linear second-order differential equations Fundamental solution set of homogeneous equations Linear independence and Wronskian Homogeneous linear second-order differential equations with constant coefficients	**2**	**T, U**
Non-homogeneous equations Method of undermined coefficients Variation of Parameters Mechanical and Electrical Vibrations Forced Vibrations	**2**	**T, U**
Higher Order Linear Equations General Theory of nth Order Linear Equations Homogeneous Equations with Constant Coefficients Method of Undetermined Coefficients Variation of Parameters	**2**	**T, U**
Basic Theory of Systems of First Order Linear Equations Homogeneous Linear Systems with Constant Coefficients	**2**	**T, U**
Non-homogeneous systems: Method of undetermined coefficients Variation of parameters	**2**	**T, U**
Partial differential equations Separation of variables Heat conduction in a bar Wave equation, Laplace equation	**2**	

Examination forms	Written examination

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	1. W.E. Boyce, R.C. DiPrime, Elementary Differential Equations and Boudnary Value problems, 8th Edition, John Wiley & Sons. 2. P. Hartman, Ordinary differential equations, SIAM Classics in applied mathematics 38, 2nd edition, Birkhauser, 1982 3. J.K. Hale, Ordinary differential equations, 2nd ed., Robert E. Krieger Publishing Co., Inc., Huntington, New York, 1980.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3										x	
4										x	
5										x	x

3. Planned learning activities and teaching methods

Week	Topics	CLO	Assessment	Teaching and Learning activities
1	**Introduction** - Some Basic Mathematical Models, Direction Fields. - Classification of Differential Equations - Solutions to Some Differential Equations **First-order differential equations** - Linear Equations - Method of Integrating Factors	1,3		Lectures
2	- Separable Equations - Modeling with First Order Equations - Differences Between Linear	1,3	Quiz	Lectures and Quiz

	Nonlinear Equations			
3	Autonomous Equations and Population Dynamics Exact Equations and Integrating Factors	3, 5	Quiz	Lectures and Quiz
4	**Second order linear differential equations** Solutions of Linear Homogeneous Equations The Wronskian and linear independence.	3, 5	HW1	Lectures and HW
5	Homogeneous Equations with Constant Coefficients Complex Roots of the Characteristic Equation, Repeated Roots	3, 5	Quiz	Lectures and Quiz
6	Nonhomogeneous Equations: Method of Undetermined Coefficients	3, 5	HW2	Lectures and HW
7	Variation of Parameters Mechanical and Electrical Vibrations Forced Vibrations	3, 5	Quiz	Lectures and Quiz
8	Review	3, 5	HW3	Lectures and HW
Midterm Exam				
9	**Higher Order Linear Equations** General Theory of n-th Order Linear Equations	2, 4	Quiz	Lectures and Quiz
10	Homogeneous Equations with Constant Coefficients	2, 4	Quiz	Lectures and Quiz
11	Non-homogeneous equations: Method of undetermined coefficients Variation of parameters	4, 5	HW4	Lectures and HW
12	**Linear systems of first-order differential equations** Review of Linear Algebra, Basic Theory of Systems of First Order Linear Equations	2, 4	Quiz	Lectures and Quiz

13	Homogeneous Linear Systems with Constant Coefficients, Complex Eigenvalues and Repeated Eigenvalues	4, 5	Quiz	Lectures and Quiz
14	Method of undetermined coefficients Variation of parameters Review of Fourier Series	2, 4, 5	HW5	Lectures and HW
15	Separation of Variables. Heat Conduction Problems, Wave Equations, Laplace's Equations	1, 2, 3, 4, 5	Exercises	
Final Exam		1, 2, 3, 4, 5		

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**
In-class exercises/ quizzes (10%)	Qz1->Qz4 80% Pass	Qz5->Qz8 80%Pass	Qz1->Qz4 80% Pass	Qz5->Qz8 80% Pass	Qz2, 4, 6, 8 70% Pass
Homework exercises (10%)	HW1->H3 70% Pass	HW4, HW5 70%	HW1->HW3 70% Pass	HW4, HW5 70%	HW1->HW5 60% Pass
Midterm exam (30%)	Q1, Q2 80% Pass		Q3, Q4 70% Pass		Q5 50%
Final exam (50%)		Q1, Q2 80%Pass		Q3, Q4 70%Pass	Q5 50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: January 12, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: APPLIED LINEAR ALGEBRA

Course Code: CE215IU

1. General information

Course designation	***The course will focus on matrix and vector methods for studying systems of linear equations, with an emphasis on concrete calculations and applications.*** ***Specific topics to be covered include matrices, Gaussian elimination, vector spaces, LU decomposition, orthogonality, the Gram–Schmidt process, determinants, inner products, eigenvalue problems, and applications to differential equations and Markov processes.***
Semester(s) in which the course is taught	**4**
Person responsible for the course	**Prof. Le Van Canh**
Language	**English**
Relation to curriculum	***Compulsory***
Teaching methods	**Lecture, discussion, and assignments.**
Workload (incl. contact hours, self-study hours)	**Total workload: 127.5 (Estimated)** **Contact hours:** **- lecture: 28.5** **- Discussion: 9** **Private study including examination preparation, specified in hours[1]: 90**
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td></td></tr>
<tr><td>Course objectives</td><td>To learn important concepts of linear algebra, such as vector spaces, basis, linear transformations, projections, least squares method, eigenvalues, and eigenvectors.

To understand the importance of linear algebra and learn its applicability to practical problems, i.e., how the linear equations and eigenvalue problems appear in some practical applications.

To enhance your understanding of the above concepts through occasional MATLAB-based homework problems.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. To equip the students with basic understanding of linear algebra, such as vector spaces, basis, linear transformations, projections, least squares method, eigenvalues, and eigenvectors.

CLO2. To equip the students with applications of linear algebra in practical engineering problems.</td></tr>
<tr><td>Skill</td><td>CLO3. To enhance your understanding of the above concepts through occasional MATLAB-based homework problems.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Linear Equations in Linear Algebra</td><td>2</td><td>T, U</td></tr>
<tr><td>Matrix Algebra</td><td>2</td><td>T, U</td></tr>
<tr><td>Determinants</td><td>2</td><td>T, U</td></tr>
<tr><td>Vector Spaces</td><td>2</td><td>T, U</td></tr>
<tr><td>Eigenvalues and Eigenvectors</td><td>2</td><td>T, U</td></tr>
<tr><td>Orthogonality and Least Squares</td><td>2</td><td>T, U</td></tr>
<tr><td>Symmetric Matrices and Quadratic Forms</td><td>2</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
<tr><td>Reading list</td><td>Textbooks:
[1] David C. Lay, Stephen R. Lay and Judi J. McDonald. Linear Algebra and Its Applications, 5th edition. Pearson, 2016.
References:
[2] Carl D. Meyer. Matrix Analysis and Applied Linear Algebra, SIAM, 2000.</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x								x	
2	x	x								x	
3	x	x								x	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	**Linear Equations in Linear Algebra:** Linear systems, matrix equation Ax = b. Solutions and applications of linear systems. Linear independence and linear transformations.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 1**
3-4	**Matrix Algebra:** Matrix operations. Inverse of a matrix and characterization of invertible matrices. Matrix factorization.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 2**
5-6	**Determinants:** Determinants, properties of determinants. Cramer's rule, volume and linear transformations.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 3**
7	**Vector Spaces:** Vector spaces and subspaces; null spaces, column spaces, and linear transformations. The dimension of a vector space; rank.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 4**
8-9	**Midterm**				
10	**Vector Spaces:** Vector spaces and subspaces; null spaces, column spaces, and linear transformations. The dimension of a vector space; rank.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 4**
11-12	**Eigenvalues and Eigenvectors:** The characteristic equation, diagonalization. Eigenvectors and linear	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 5**

	transformations. Complex eigenvalues. Applications to differential equations.				
13-14	**Orthogonality and Least Squares:** Orthogonal sets. Orthogonal projections. Least-squares problems. Application to linear models	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 6**
15-16	**Symmetric Matrices and Quadratic Forms:** Diagonalization of symmetric matrices. The singular value decomposition.	**1, 2, 3**	**Quiz 1, 2, 3**	**Lecture, Discussion**	**[1] Chapter 7**
17-18	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes/attendance (30%)	**Quiz 1 60%Pass**	**Quiz 2 60%Pass**	**Quiz 3 60%Pass**
Midterm exam (20%)	**Q1 50%Pass**		**Q2 50%Pass**
Final exam (50%)		**Q1 50%Pass**	**Q2 50%Pass**

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Probability and Statistics

Course Code: CE216IU

1. General information

Course designation	Probability problems in engineering, conditional probability, discrete and continuous distributions, sampling distribution, interval estimates, hypothesis testing, analysis of variance, regression models and non-parametric testing.
Semester(s) in which the course is taught	2
Person responsible for the course	Dr. Pham, Nguyen Linh Khanh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, presentation, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours : 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None

<table>
<tr><td>Course objectives</td><td>1. Students know how to calculate basic statistics parameters for given data set
2. Students know how to calculate probability for a given problem context
3. Students know how to solve problems regarding random variables
4. Students understand the relationship between sample and population, sampling process and sampling distribution
5. Students know how to set up statistical hypothesis testing for population mean, variance for single or multiple populations
6. Students know how to set up and analyze linear regression model for single or multiple variables</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the fundamentals of probability and statistiscs, hypothesis, and concept of regression models</td></tr>
<tr><td>Skill</td><td>CLO2. Conducting data analysis and visualize the results.
CLO3. Performance probability analysis, hypotheisis testis and regression models.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction and Descriptive Statistics</td><td>1</td><td>I</td></tr>
<tr><td>Probability</td><td>2</td><td>T</td></tr>
<tr><td>Random Variables and Normal Distribution</td><td>2</td><td>T, U</td></tr>
<tr><td>Sampling and sampling distributions</td><td>2</td><td>T, U</td></tr>
<tr><td>Confidence Intervals</td><td>1</td><td>T</td></tr>
<tr><td>Hypothesis Testing</td><td>1</td><td>T</td></tr>
<tr><td>Comparison between two populations</td><td>2</td><td>T</td></tr>
<tr><td>Analysis of Variance</td><td>1</td><td>T</td></tr>
<tr><td>Regression</td><td>1</td><td>T</td></tr>
<tr><td>Nonparametric Testing</td><td>1</td><td>T</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this module.

</td></tr>
<tr><td>Reading list</td><td>

[1] Sheldon M. Ross (2010), A First Course of Probability. 8th edition. Pearson Education.

[2] Kottegoda and Rosso (1998) Statistics, Probability and Reliability for Civil and Environmental Engineerings

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1 -11) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2		x				x					
3		x								x	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction and Descriptive Statistics	1, 3		Lecture, Discussion	[1] Chapter 1
2+3+4	Probability	2, 3	HW1	Lecture, HW	[1] Chapter 2
5+6	Random Variables and Normal Distribution	3	HW2	Lecture, HW	[1] Chapter 3
7+8	Sampling and sampling distributions	1, 3	HW2	Lecture, HW	[3] Chapter 4
9-10	Midterm				
11	Confidence Intervals	1, 3	In-class Excercises	Lecture, Discussion	[1] Chapter 5
12+13	Hypothesis Testing	1, 3	HW3	Lecture, HW	[1] Chapter 6
14	Comparison between two populations	2, 3	In-class Excercises	Lecture, Discussion	[1] Chapter 7
15	Analysis of Variance	2, 3	In-class Excercises	Lecture, Discussion	[1] Chapter 8
16	Regression	1, 3	In-class Excercises	Lecture, Discussion	[1] Chapter 9
17	Nonparametric Testing	1, 3	HW3	Lecture, HW	[1] Chapter 10
18	Review				
19-20	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises (10%)	Qz 1, 3 60%Pass	Qz 2, 3, 4 60%Pass	Qz 1, 2,3 60%Pass
Homework (20%)	HW 1, 2, 3 50%Pass	HW 1 50%Pass	HW 2, 3 50%Pass
Midterm exam (30%)	Q 1, 2, 3 50%Pass		Q1, 2, 3 50%Pass
Final exam (40%)	Q 1,2 50%Pass		Q 1,2 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Physics

COURSE SYLLABUS

Course Name: Physics 1 (General Mechanics)

Course Code: **PH013IU**

1. General information

Course designation	*This subject will provide an introduction to mechanics including: concepts and principles of kinetics, dynamics, energetics of motion of a particle and a rigid body.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assos. Prof.. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (whether lecture, exercise, laboratory session, etc.): lecture: 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	None

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>This course will provide students with:
1. The basic knowledge of general Mechanics Physics
2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques
3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment
4. Confidence and fluency in discussing physics in English.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. An ability to understand of basic knowledge of law of conservations and dynamics of rigid body.
CLO2. An ability to analysis and design a problem in science and engineering</td></tr>
<tr><td>Skill</td><td>CLO3. An ability in applying knowledge of physics</td></tr>
<tr><td>Attitude</td><td>CLO4. An ability to communicate effectively in writing manner</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Chapter 1: Bases of Kinematics</td><td>2</td><td>I, T,U</td></tr>
<tr><td>Chapter 2: The Law of Motion</td><td>2</td><td>I, T,U</td></tr>
<tr><td>Chapter 3: Work and Mechanical Energy</td><td>3</td><td>I, T,U</td></tr>
<tr><td>Chapter 4: Linear Momentum and Collisions</td><td>2</td><td>I, T,U</td></tr>
<tr><td>Chapter 5: Rotation of a Rigid Object About a Fixed Axis</td><td>2</td><td>I, T,U</td></tr>
<tr><td>Chapter 6: Equilibrium and Elasticity</td><td>2</td><td>I</td></tr>
<tr><td>Chapter 7: Universal Gravitation</td><td>2</td><td>I</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Short-answer questions</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
</table>

Reading list	[1] Lecture Notes [2] Halliday D., Resnick R. and Walker, J. (2011) *Principles of Physics*, 9th edition, John Willey and Sons, Inc. [3] Alonso M. and Finn E.J. (1992) *Physics,* Addison-Wesley Publishing Company. [4] Faughn/Serway (2006) *Serway's College Physics*, Thomson Brooks/Cole.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-3	**Chapter 1**: Basis of Kinematics Motion in One Dimension: - Position, Velocity, and Acceleration - One-Dimensional Motion with Constant Acceleration - Freely Falling Objects Motion in Two Dimensions: - Position, Velocity, and Acceleration Vectors - Two-Dimensional Motion with Constant Acceleration. Projectile Motion - Circular Motion. Tangential and Radial Acceleration - Relative Velocity and Relative Acceleration	1	Assignment/Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 1 [2] 1, 2, 3, 4

4-7	**Chapter 2**: Laws of Motion - Newton's First Law and Inertial Frames - Newton's Second Law - Newton's Third Law Some Applications of Newton's Laws: - Gravitational Force and Weight - Forces of Friction - Uniform Circular Motion and Non-uniform Circular Motion - Motion in the Presence of Resistive Forces - Motion in Accelerated Frames	1	Assignment//Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 5, 6
8	**Chapter 3**: Work and Mechanical Energy - Work Done by Force. Power - Kinetic Energy and Work. Kinetic Energy Theorem	3	Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 3 [2] 7, 8
	Midterm				
9	- Potential Energy of a System - Conservation of Mechanical Energy - Conservative and Non-conservative Forces - Changes in Mechanical Energy for Non-conservative Forces - Relationship Between Conservative Forces and Potential Energy			Lecture, Discussion, Inclass-Quiz	
10-11	**Chapter 4**: Linear Momentum and Collisions - Linear Momentum and Its Conservation - Impulse and Momentum - Collisions in One Dimension and Two Dimensions		Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 4 [2] 9
12-14	**Chapter 5**: Rotation of a Rigid Object About a Fixed Axis - Rotational Kinematics. Rotational Motion with Constant Angular Acceleration - Torque and Angular Acceleration - Moments of Inertia - Rotational Kinetic Energy - Rolling Motion of a Rigid Object - Angular Momentum of a Rotating Rigid Object - Conservation of Angular Momentum	3	Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 5 [2] 10, 11

15	**Chapter 6**: Equilibrium and Elasticity The Conditions for Equilibrium The Center of Gravity **Chapter 7**: Universal Gravitation Newton's Law of Gravitation Kepler's Laws and the Motion of Planets The Gravitational Field and Gravitational and Potential Energy	3	Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 6, 7 [2] 12. 13
	Final exam				

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**
In-class exercises/quizzes (10%)	Qz1 60%Pass	Qz2 60%Pass		Qz3 60%Pass
Homework exercises (20%)	HW2 50%Pass		HW1, HW3, HW4 50%Pass	
Midterm exam (30%)		Q3 50%Pass	Q1, Q2 50%Pass	
Final exam (40%)	Part I 50%Pass		Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: …….			
Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: January 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Physics

COURSE SYLLABUS

Course Name: Physics 2(Fluid Mechanics and Thermal Physics)

Course Code: **PH014IU**

1. General information

Course designation	*This subject will provide a basic knowledge of fluid mechanics; macroscopic description of gases; heat and the first law of thermodynamics; heat engines and the second law of thermodynamics; microscopic description of gases and the kinetic theory of gases.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assos. Prof.. Phan Bảo Ngọc Dr. Phan Hiền Vũ
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (whether lecture, exercise, laboratory session, etc.): lecture: 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	None

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>This course will provide students with:
1. The basic knowledge of Fluid Mechanics and Thermal Physics
2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques
3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment
4. Confidence and fluency in discussing physics in English.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. An ability to understand basic knowledge of the kinetic energy of ideal gas and the second law of thermal dynamics.
CLO2. An ability to analysis and design a problem in science and engineering</td></tr>
<tr><td>Skill</td><td>CLO3. An ability in applying knowledge of physics</td></tr>
<tr><td>Attitude</td><td>CLO4. An ability to communicate effectively in writing manner</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Chapter 1: Fluid Mechanics</td><td>2</td><td>I, T,U</td></tr>
<tr><td>Chapter 2: Temperature, Heat, and the First Law of Thermodynamics</td><td>4</td><td>I, T,U</td></tr>
<tr><td>Chapter 3: The Kinetic Theory of Gases</td><td>5</td><td>I, T,U</td></tr>
<tr><td>Chapter 4: Entropy and the Second Law of Thermodynamics</td><td>4</td><td>I, T,U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Short-answer questions</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
</table>

Reading list	[1] Lecture Notes [2] Halliday D., Resnick R. and Walker, J. (2011) *Principles of Physics*, 9th edition, John Willey and Sons, Inc. [3] Alonso M. and Finn E.J. (1992) *Physics,* Addison-Wesley Publishing Company. [4] Faughn/Serway (2006) *Serway's College Physics*, Thomson Brooks/Cole.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1-2	**Chapter 1**: Fluid Mechanics - Fluids at Rest - Ideal Fluids in Motion - Bernoulli's Equation	1, 2	Assignment//Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 1 [2] 14
3-8	**Chapter 2**: Temperature, Heat, and First Law of Thermodynamics - Temperature and Zeroth Law of Thermodynamics - Thermal Expansion - Heat and Absorption of Heat by Solids and Liquids - Work and Heat in Thermodynamic Processes - First Law of Thermodynamics and Its Some Special Cases - Heat Transfer Mechanisms	1, 2	Assignment//Quiz Midterm	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 18
	Midterm				
9-12	**Chapter 3**: Kinetic Theory of Gases - Ideal Gases: Experimental Laws, Equation of State - Molecular Model of an Ideal Gas. Mean Free Path - Boltzmann Distribution Law and	3, 4	Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 2 [2] 19

	Distribution of Molecular Speeds - Molar Specific Heats of an Ideal Gas - Equipartition of Energy Theorem - Adiabatic Expansion of an Ideal Gas				
13-15	**Chapter 4**: Entropy and Second Law of Thermodynamics - Reversible, Irreversible Processes and Entropy - Second Law of Thermodynamics - Entropy in Real World: Engines - A Statistical View of Entropy	3, 4	Assignment//Quiz Final	Lecture, Discussion, Inclass-Quiz	[1] 4 [2] 20
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1 60%Pass	Qz2 60%Pass		Qz3 60%Pass
Homework exercises (20%)	HW2 50%Pass		HW1, HW3, HW4 50%Pass	
Midterm exam (30%)		Q3 50%Pass	Q1, Q2 50%Pass	
Final exam (40%)	Part I 50%Pass		Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: …….			
Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: January 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Physics

COURSE SYLLABUS

Course Name: Physics 3 (Electricity and Magnetism)

Course Code: **PH015IU**

1. General information

Course designation	*This subject will provide a basic knowledge of electricity and magnetism.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Assoc. Prof. Phan Bảo Ngọc
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (whether lecture, exercise, laboratory session, etc.): lecture: 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	Physics 1

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>This course will provide students with:
1. The basic knowledge of electricity and magnetism such as electric charge, electric potential, magnetic fields, electromagnetic waves, etc.
2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques.
3. Understanding and skills needed to use physical laws governing real process and to solve them in the engineering environment.
4. Confidence and fluency in discussing physics in English.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. An ability to understand basic knowledge of electricity and magnetism such as electric charge, electric potential, magnetic fields, electromagnetic waves.
CLO2. Examine problem solving in engineering environment</td></tr>
<tr><td>Skill</td><td>CLO3. Understand and acquire skills needed to use physical laws governing real process and to solve them in the engineering environment</td></tr>
<tr><td>Attitude</td><td>CLO4. Develop confidence and fluency in discussing physics in English</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Chapter 1: Electric Fields</td><td>3</td><td>I, T, U</td></tr>
<tr><td>Chapter 2: Electric Potential and Capacitance</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 3: Current and Resistance. Direct Current Circuits</td><td>3</td><td>I, T, U</td></tr>
<tr><td>Chapter 4: Magnetism</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 5: Electromagnetic Induction</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 6: Electromagnetic Oscillations and Alternating Current</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 7: Maxwell’s Equation and Electromagnetic Waves</td><td>1</td><td>I, T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Short-answer questions</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Halliday D., Resnick R. and Walker, J. (2011) *Fundamentals of Physics*, 9th edition, John Willey and Sons, Inc. [2] Alonso M. and Finn E.J. (1992) *Physics,* Addison-Wesley Publishing Company. [3] Hecht, E. (2000) *Physics: Calculus,* 2nd edition, Brooks/Cole. [4] Faughn/Serway (2006) *Serway's College Physics*, Thomson Brooks/Cole.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-10) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-3	Chapter 1: Electric Fields	1, 2, 3, 4	Quiz 1/ Assignment Midterm exam	Lecture, Discussion	[1].0. [2].1.
4-5	Chapter 2: Electric Potential and Capacitance	1, 2, 3, 4	Quiz 2/ Assignment Midterm exam	Lecture, Discussion	[1].9.
6-7	Chapter 3: Current and Resistance. Direct Current Circuits	1, 2, 3, 4	Assignment Midterm exam	Lecture, Discussion	[2].2.
8	Chapter 4: Magnetism (Part 1)	1, 2, 3, 4	Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.
9-10	Midterm				
11-12	Chapter 4: Magnetism (Part 2)	1, 2, 3, 4	Quiz 3/ Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.
13-14	Chapter 5: Electromagnetic Induction	1, 2, 3, 4	Quiz 4/ Assignment Final exam	Lecture, Discussion	[3]. 10
15-16	Chapter 6: Electromagnetic Oscillations and Alternating Current	1, 2, 3, 4	Assignment Final exam	Lecture, Discussion	[2]. 4. [1]. 18.

17	Chapter 7: Maxwell's Equation and Electromagnetic Waves	1, 2, 3, 4	Final exam	Lecture	[3]. 10
18-19	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Attendance + Homework + in-class discussion (15%)				
Quizzes (Qz) / assignment (As) (15%)	Qz1, Qz3/ As.P1 50%Pass	Qz2, Qz4/ As.P2 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P3 50%Pass	Qz1, Qz2, Qz3, Qz4 / As.P4 50%Pass
Midterm exam (30%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 50%Pass
Final exam (40%)	Q1, Q2, Q3 50%Pass	Q4, Q5 50%Pass	Q3, Q5 50%Pass	Q3, Q5 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in

	response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: January 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of Physics

COURSE SYLLABUS

Course Name: Physics 3 Laboratory (Electricity and magnetism laboratory)

Course Code: **PH016IU**

1. General information

Course designation	*This course provides students with basic knowledge of electricity and magnetism in laboratory, consists of: Ohm's law, LRC circuit, RC circuit, LR circuit, magnetic fields of coils….*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Msc. Lê Thị Quế Msc. Trịnh Thanh Thủy
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, assignment.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (lecture, exercise, laboratory session, etc.): lecture: 37.5 Private study including examination preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Physics 3 (PH015IU)</td></tr>
<tr><td>Course objectives</td><td>This course will provide students with:
1. The basic concepts in electricity and magnetism. Have laboratory experiences.
2. Skills to solve problems in engineering environment by applying both theoretical and experimental techniques
3. Skill to present scientific report in writing, and better understand the relations between theory and experiment.
4. Confidence and fluency in discussing physics in English.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the basic concepts in electricity and magnetism.</td></tr>
<tr><td>Skill</td><td>CLO2. Approach and solve problems in Electricity and magnetism experiments
CLO3. Write scientific report, have understanding the relations between theory and experiment</td></tr>
<tr><td>Attitude</td><td>CLO4. An ability to communicate effectively in writing English manner</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: experimental session (4 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Ohm’s law</td><td>1</td><td>T, U</td></tr>
<tr><td>Resistances in Circuits</td><td>1</td><td>T, U</td></tr>
<tr><td>LRC Circuits</td><td>1</td><td>T, U</td></tr>
<tr><td>Kirchhoff’s laws</td><td>1</td><td>T, U</td></tr>
<tr><td>RC circuit</td><td>1</td><td>T, U</td></tr>
<tr><td>LR circuit</td><td>1</td><td>T, U</td></tr>
<tr><td>Magnetic fields of coils</td><td>1</td><td>T, U</td></tr>
<tr><td>The e/m experiment</td><td>1</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Short-answer questions, taking experiment, write report</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Halliday D., Resnick R. and Walker, J. (2011) *Fundamentals of Physics*, 9th edition, John Willey and Sons, Inc. [2] Labguide

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO									
CLO	1	2	3	4	5	6	7	8	9	10
1	x									
2	x									
3										
4										

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Ohm's law	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
2	Resistances in Circuits	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
3	LRC Circuits	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
4	Kirchhoff's laws	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
5	RC circuit	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
6	LR circuit	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
7	Magnetic fields of coils	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
8	The e/m experiment	1, 2	Prelab answer, Lab report	Taking experiment	[1]. [2].
9	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Prelab (20%)	Prelab1-8 60%Pass			Prelab1-8 60%Pass
Lab report (30%)	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass	Labreport 1-8 50%Pass
Attendance (20%)				
Final exam (30%)	Part I.1 50%Pass	Part I.2 50%Pass	Part II.1,2 50%Pass	Part II.3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: January 12, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Biotechnology**

COURSE SYLLABUS

Course Name: Chemistry for Engineers

Course Code: **CHE011IU**

1. General information

Course designation	*This one-semester course is designed for students who are pursuing an engineering degree (e.g., information technology, biotechnology, civil, biomedical, electronic, and telecommunication engineering) and chemistry-related ones (e.g., applied chemistry and chemical engineering). The course will introduce the basic principles of chemistry and connect those principles to issues in the engineering profession. The related lab work is not included in this course.*
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	Assoc.Prof. Dr. Huynh Kim Lam Dr. Vũ Bảo Khánh Dr. Phùng Thanh Khoa
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, project, and seminar (optional).
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload:127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 lectures Private study including examination preparation, specified in hours[1]: 90 hrs
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	
Course objectives	Upon successful completion of this course, the students should be able to demonstrate knowledge of: ● The role of chemistry for engineers ● Measurements in chemistry ● Matter and state of matter ● Structure of atoms, molecules and ions ● Periodicity ● Chemical bonds ● Intermolecular forces, liquid and solid ● Gases, liquids, solids and their properties ● Types and rates of chemical reactions ● Chemical equilibrium ● Electrolytes, acid-base, *pH*, buffer ● Thermochemistry and thermodynamics
Course learning outcomes	**CLO1:** Be able to apply mathematics and science knowledge to solve chemistry-related problems and explain many aspects of everyday life using chemistry concepts. **CLO2:** Be able to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. **CLO3:** Be able to acquire and apply new knowledge as needed, using appropriate learning strategies.

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
Introduction to General Chemistry for Engineers	**0.2**	**I, T**
Introduction to Matter	**0.3**	**I, T**
Measurements in Chemistry	**0.5**	**I, T**
Atoms, Molecules and Ions	**1**	**I, T**
Periodicity	**1**	**I, T**
Chemical Bonds	**2**	**I, T**
Intermolecular Forces	**1**	**I, T**
Gases and Their Properties	**0.5**	**I, T**
Solutions and Their Properties	**0.5**	**I, T**
Solids and Their Properties	**0.5**	**I, T**
Chemical Reactions	**0.5**	**I, T**
Chemical Kinetics	**1**	**I, T**
Chemical Equilibrium	**1**	**I, T**
Electrolytes, Acid- Base, pH and Buffer	**2**	**I, T**
Thermochemistry and Thermodynamics	**2**	**I, T**

Examination forms	Multiple-choice questions, written test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] "Chemistry: A Molecular Approach" by Nivaldo J. Tro (2nd Ed., 2008). Pearson. [2] "General Chemistry" by Darrell Ebbing and Steven D. Gammon (9th Ed., 2010). Brooks/Cole, USA. [3] "Chemistry for Engineers – An Applied Approach" by Mary Jane Shultz (2007). Houghton Mifflin. [4] "Chemistry, Principles and Reactions" by Masterton and Hurley (6th Ed., 2009). Cengage learning, USA.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (1-8) is shown in the following table:

	ILO							
CLO	1	2	3	4	5	6	7	8
1	x							
2							x	
3		x						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities
1	Introduction to General Chemistry for Engineers Introduction to Matter Measurements in Chemistry	1		- Lecture - Class discussion
2	Atoms, Molecules and Ions	1,7	Homework/ Quiz	- Lecture - Class discussion
3	Periodicity	1,7	Homework/ Quiz	- Lecture - Class discussion
4, 5	Chemical Bonds	1,7	Homework/ Quiz	- Lecture - Class discussion
6	Intermolecular Forces	2,7	Homework/ Quiz	- Lecture - Class discussion
7	Gases and Their Properties Solutions and Their Properties	2,7	Homework/ Quiz	- Lecture - Class discussion
8	Solids and Their Properties Chemical Reactions	1,2,7	Homework/ Quiz	- Lecture - Class discussion
9-10	Midterm			
11, 12	Chemical Kinetics and Chemical Equilibrium	1,2,7	Homework/ Quiz	- Lecture - Class discussion
13, 14	Electrolytes, Acid-Base, *pH* and Buffer	1,2,7	Homework/ Quiz	- Lecture - Class discussion
15, 16	Thermochemistry and Thermodynamics	1,2,7	Homework/ Quiz	- Lecture - Class discussion
17	Revision	1,2,7	Homework/ Quiz	- Class discussion
18-20	Final exam			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/homework/quizzes (30%)	Qz1, 2, 3, 4, 5 50%Pass	Qz1, 2, 3, 4, 5 50%Pass	Homework 50%Pass
Midterm exam (30%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass
Final exam (40%)	Part I 50%Pass	Part II.1 50%Pass	Part II.2 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: August 10, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Biotechnology**

COURSE SYLLABUS

Course Name: Chemistry Laboratory

Course Code: **CH012IU**

1. General information

Course designation	This one-semester course is designed for engineering students those who are pursuing a nonchemistry engineering degree such as information technology, bio-technology, civil, biomedical, electronic and telecommunication engineering. The course will introduce students to basic laboratory safety, techniques and apparatus, and complement the information gained in lecture. Prior to each lab, students must read the lab manual about the experiment and complete a prelaboratory report. All students must complete mandatory safety training to participate in the course, which will be provided at the first day of the class. Students are expected to come to each lab on time and be prepared to carry out the day's tasks.
Semester(s) in which the course is taught	1, 2, and summer (optional)
Person responsible for the course	
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lab, Lecture
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (whether lecture, exercise, laboratory session, etc.): 25h for lab, 12.5h for lecture Private study including examination preparation, specified in hours[1]: 30

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Credit points	**1 credit/2.45 ECTS**
Required and recommended prerequisites for joining the course	None
Course objectives	To introduce students to general chemistry laboratory and to provide students with a firm foundation in chemistry laboratory for careers in science and engineering
Course learning outcomes	Upon the successful completion of this course students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	**CLO1: Applying chemical concepts to draw logical conclusions about the applicability of data to real world problems.**
Skill	**CLO2. Being able to perform lab-work: perform experiment, analyze data, answer questions, make conclusion, research assignments, report writing.** **CLO3: Using collected data to calculate physical or chemical quantities to the experiment being performed.**
Attitude	**CLO4: Developing teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting.**

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (5 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Chemical Reactions	**1**	**T, U**
pH and buffers	**1**	**T, U**
Redox titration	**1**	**T, U**
Chemical Equilibrium	**1**	**T, U**
Factors affecting reaction rate	**1**	**T, U**

Final evaluation	Multiple choice questions

Study and examination requirements	Attendance: An attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Lab manual for chemistry laboratory (internal use only)

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (ILO) (1-8) is shown in the following table:

	ILO							
CLO	1	2	3	4	5	6	7	8
1		x						
2							x	
3				x				
4					x			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Orientations		Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
2	Chemical Reactions	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
3	pH and buffers	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
4	Redox titration	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
5	Chemical Equilibrium	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	
6	Factors affecting reaction rate	1-4	Pre-lab Experiment performance Report	Short lecture Experiment Class discussion	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/pre-lab (10%)		Prelab 1, 2, 3, 4, 5 50%Pass	Prelab 1, 2, 3, 4, 5 50%Pass	
Lab report (60%)	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass	Report 1, 2, 3, 4, 5 50%Pass
Final exam (30%)	Q1 50%Pass	Q2 50%Pass	Q3 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. **HW/Assignment: …….** **Date: ……** **Evaluator: ……**			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content			
Introduction demonstrates thorough knowledge of relevant background and prior work			
Analysis and discussion demonstrate good subject mastery			
Summary and conclusions appropriate and complete			
Organization (10%)			
Distinct introduction, body, conclusions			
Content clearly and logically organized, good transitions			
Presentation (20%)			
Correct spelling, grammar, and syntax			
Clear and easy to read			
Quality of Layout and Graphics (10%)			
TOTAL SCORE			

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: August 10, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Construction Management**

COURSE SYLLABUS

Course Name: Engineering Ethics and Critical Thinking

Course Code: **PE022IU**

1. General Information

Module designation	**PE020IU – Engineering Ethics and Critical Thinking** This course is designed to introduce engineering students to the concepts, theory and practice of engineering ethics. It will allow students to explore the relationship between ethics and engineering, and apply classical moral theory and decision making for engineering issues encountered in academic and professional careers. Further, this course also provides the nature and techniques of thought as a basis for our claims, beliefs, and attitudes about the world. Specifically, the course includes the theory and practice of presenting arguments in oral and written forms, making deductive and inductive arguments, evaluating the validity or strength of arguments, detecting fallacies in arguments, and refuting fallacious arguments.
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Nguyen, Hoai Nghia, Dr. Huynh, Vo Trung Dung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45

<table>
<tr><td></td><td>Private study including examination preparation, specified in hours[1]: 90</td></tr>
<tr><td>Credit points</td><td>3</td></tr>
<tr><td>Required and recommended prerequisites for joining the module</td><td>None</td></tr>
<tr><td>Module objectives/intended learning outcomes</td><td>Overall objectives are to equip IU students with knowledge about the philosophies of ethics, professional practice, and world culture.

Students who complete the course will be able to perform the following tasks:

(1) Having knowledge of the definition of engineering ethics, codes of ethics, ethic philosophies, intellectual property, copyright, fair use of copyrighted materials and research data, and critical thinking.
(2) Using different problem-solving techniques to solve ethical dilemmas in considering social, environmental, legal aspects, safety and sustainability issues of engineering activities.
(3) Identify, construct, and evaluate deductive and inductive arguments in spoken and written forms to avoid barriers to critical thinking in various contexts.
(4) Develop professional skills including team working, presentation, and critical thinking to defend personal/group beliefs in respectful manners</td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction to engineering professionalism and ethics
Engineers in Society</td><td>1</td><td>I</td></tr>
<tr><td>Moral choices and codes of ethics</td><td>1</td><td>T, U</td></tr>
<tr><td>Philosophical ethics
Ethical problem-solving techniques</td><td>2</td><td>I, T, U</td></tr>
</table></td></tr>
</table>

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	Engineers at the Workplaces - Leadership	1	T, U
	Truth in actions and words in Academic and Research Ethics	1	T
	Internet ethics, Privacy Issues and Intellectual Property Rights Commitment to Safety	2	T
	Environmental ethics Sustainable engineering	1	T
	Introduction to critical thinking	1	T
	Basic logical concepts	1	T, U
	Logical fallacies	1	T, U
	Recognizing, analyzing, evaluating arguments	2	T, U
Examination forms	Constructed-response test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	Textbook: [1] M. W. Martin and R. Schinzinger (2010). *Introduction to engineering ethics* McGraw-Hill Education 2nd edition [2] Bassham, Irwin, Nardone, and Wallace, *Critical Thinking: A Student's Introduction*, 6th edition, McGraw-Hill Education, 2020 References: [1] C. B. Fleddermann. (2011). *Engineering Ethics*, Pearson 4th edition [2] Moore, B.N. et al. (2009). *Critical Thinking*, 9th ed. McGraw-Hill.		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program/Student Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Having knowledge of the definition of engineering ethics, codes of ethics, ethic philosophies, intellectual property, copyright, fair use of copyrighted materials and research data, and critical thinking.

(2) CLO2: Using different problem-solving techniques to solve ethical dilemmas in considering social, environmental, legal aspects, safety and sustainability issues of engineering activities.
(3) CLO3: Identify, construct, and evaluate deductive and inductive arguments in spoken and written forms to avoid barriers to critical thinking in various contexts.
(4) CLO4: Develop professional skills including team working, presentation, and critical thinking to defend personal/group beliefs in respectful manners.

No.	**Program Learning Outcome**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1				x							
CLO2				x	x		x			x	
CLO3				x						x	
CLO4				x	x		x				

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics and natural sciences to represent it in pursuing and establishing research by the use of quantitative and quantitative methods.

(b) Understanding the fundamentals of the civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction)

(c) Ability to analyze and prepare investment projects and understand their economic, environmental, and social impacts

(d) Awareness of professional and ethical responsibilities of a civil engineer; ability to make rational decisions based on an ethical argumentation, think critically in order to find innovative and effective solutions for interdivision aqualitative and quantitative problems.

(e) Ability to function as a member of a multidisciplinary team (including multi-national and mixed-gender teams) as well as having good knowledge of management and organization to be able to take on leadership roles

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies emerge regularly, as well as take part in developing new technologies by engaging in research works having the ability to interpret and use empirical datasets, integrate technical literature and databases to solve specific civil engineering problems or fill knowledge gaps.

(g) Ability to communicate matters related to civil engineering to colleagues in the same profession or the general public, effectively using oral, written, and other forms of communication.

(h) A broad education necessary to understand the impacts of civil engineering solutions in a global and social context

(i) A broad understanding of contemporary issues in civil engineering in the national, regional,

and global level

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and daily life situations

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to engineering professionalism and ethics Engineers in Society	1		Lecture, Discussion	[1] Chapter 1, 4
2	Moral choices and codes of ethics	1	HW1 and/or Quiz1	Lecture, HW1 and/or Quiz1	[1] Chapter 2
3, 4	Philosophical ethics Ethical problem-solving techniques	1, 2	HW2 and/or Quiz2	Lecture, Presentation1	[1] Chapter 3, 4
5	Engineers at the Workplaces - Leadership	1	Quiz3	Lecture, Discussion Quiz3	[1] Chapter 6
6	Truth in actions and words Academic and Research Ethics	1, 2	Quiz4	Lecture, Quiz4	[1] Chapter 7
7, 8	Internet Ethics, Privacy Issues and Intellectual Property Rights Commitment to Safety	1	Quiz5 Presentation 1	Lecture, Discussion Quiz5	[1] Chapter 5, 6, 13
9-10	FINAL EXAM				
11	Environmental ethics Sustainable engineering	1	Quiz6	Lecture, Discussion Quiz6	[1] Chapter 9
12	Introduction to critical thinking	1,3	Quiz7	Lecture, Discussion Quiz7	[2] Chapter 1
13	Basic logical concepts	1,3	Quiz8	Lecture, Discussion Quiz8	[2] Chapter 3
14	Logical fallacies	3, 4	Quiz9	Lecture, Discussion Quiz9	[2] Chapter 5, 6
15, 16	Recognizing, analyzing, evaluating arguments	3, 4	Quiz10 Presentation 2	Lecture, Discussion Quiz10	[2] Chapter 2, 7, 8
17	Review				

18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (10%)	Qz1, Qz3,Qz5, Qz6 50%Pass	Qz2, Qz4 50%Pass	Qz5, Qz6, Qz7, Qz8, 50%Pass	Qz5, Qz6, Qz7, Qz8, 50%Pass
Homework exercises/ Presentation (20%)	Presentation 1 50%Pass	Presentation 2 50%Pass		
Midterm exam (20%)	MCQ, Case study 50% Pass	MCQ, Case study 50% Pass		
Final exam (50%)			MCQ, Case study 50% Pass	

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: 06/06/2023

Ho Chi Minh City, 06/062023
Dean of School
(Signature)

Dr. Nguyen Hoai Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of English

COURSE SYLLABUS

Course Name: Writing AE1 (Academic Writing)

Course Code: **EN007IU**

1. General information

Course designation	*This course provides students with comprehensive instructions and practice in essay writing, including transforming ideas into different functions of writing such as process, cause-effect, comparison-contrast, and argumentative essays.*
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, exercise): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	Students must fulfil ONE of the following requirements to attend this course: • hold TOEFL iBT certificate with score ≥ 61 • hold IELTS certificate with score ≥ 5.5 • have completed IE2 course
Course objectives	Throughout the whole course, students are required to read university-level texts to develop the ability to read critically and to respond accurately, coherently and academically in writing. Through providing them with crucial writing skills such as brainstorming, paraphrasing, idea developing, revising, and editing, this course prepares the students for research paper writing in the next level of AE2 writing.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand and follow different steps in the writing process to produce a complete essay
CLO2. Employ different methods to improve their writing such as peer feedback and teacher comments</td></tr>
<tr><td>Skill</td><td>CLO3. Read critically, analyze and annotate an academic text
CLO4. Use different functions of writing to successfully communicate their purposes to the audience (describe a process, discuss the causes and effects, compare and contrast, make arguments, paraphrase and summarize)</td></tr>
<tr><td>Attitude</td><td>CLO5. Reason around ethical issues in writing academic essays and avoid committing plagiarism</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>The process of Academic Writing</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Using Outside Sources</td><td>3</td><td>T, U</td></tr>
<tr><td>From Paragraph to Essay</td><td>4</td><td>T, U</td></tr>
<tr><td>Process Essays</td><td>4</td><td>T, U</td></tr>
<tr><td>Cause/Effect Essays</td><td>4</td><td>T, U</td></tr>
<tr><td>Comparison/ Contrast Essays</td><td>4</td><td>T, U</td></tr>
<tr><td>Argumentative Essays</td><td>6</td><td>T, U</td></tr>
<tr><td>Summarizing</td><td>2</td><td>U</td></tr>
<tr><td>Review & Correction</td><td>2</td><td>U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Essay writing</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance
Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination.

Missed Tests
Students are not allowed to miss any of the tests (both Mid-term and Final). There are very fewexceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination.</td></tr>
</table>

	Class Behaviors Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE1 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below: - Prepare thoroughly for each class in accordance with the course syllabus and complete home assignments as the instructor's request. - Participate fully and constructively in all course activities and discussions (if any). - Display appropriate courtesy to all involved in the class. - Provide constructive feedback to faculty members regarding their performance. *Plagiarism* Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination. *Writing Center (Room 509)* Students are encouraged to visit the Writing Center to schedule an appointment for additional help with essay writing.
Reading list	[1] Oshima, A., & Hogue, A. (2017). *Longman Academic Writing Series, Level 4: Essays* (5th ed.).New Jersey, NJ: Pearson Longman. [2] Oshima, A., & Hogue, A. (2006). *Longman Academic Writing Series, Level 4: Essays* (4th ed.).New Jersey, NJ: Pearson Longman.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

Week	Coursebook		Homework
	Chapter	***Pages***	
1	**The process of Academic Writing** Step 1: Creating (Prewriting) Step 2: Planning (Outlining) Step 3: Writing Step 4: Polishing ***Using Outside Sources*** Paraphrasing Plagiarism and how to avoid plagiarism	[2] pp. 265-279 [1] pp. 58-65	• Do revising & editing exercises • Read pp. [1] pp. 66-72
2	***Using Outside Sources (Cont'd)*** Strategies for writing a successful summary	[1] pp. 58 - 72	• Do paraphrasing exercises • Read [1] pp.74-100. Read, take notes and write the summary of ONE of the following articles: ○ The Challenge of Many Languages (p. 280) ○ Nice by Nature? (p. 281) ○ Marital Exchanges (pp. 283-4) ○ Why We Should Send a Manned Mission to Mars (pp. 286-7) ○ Let's Not Go to Mars (pp. 288-9)
3 & 4	**Review/ Correction**: Lecturergives feedback to one or two students' writings in class. **From Paragraph to Essay** The introductory paragraph: • General statements & Introductory techniques • Thesis statements & Logical division of ideas Body paragraphs: • Topic sentences The concluding paragraph: • Restatement • Final thoughts Outlines of essays	[1] pp. 74 – 100	• Read pp. 101-15 • Do exercises on: ○ Writing thesis statements ○ Writing topic sentences fromthe thesis statement provided ○ Writing restatements

5	**Process Essays** Introduction Analyzing the models Thesis statements for process essays Transitional signals **Write together:** Writing from a diagram (p.115)	[1] pp. 101 - 115	• Write a short essay (150-200 words) describing how hydroelectric power is generated (or a topic of the lecturer's choice)
6	**Process Essays (Cont'd) Review/ Correction**: Lecturer gives feedback to one or two students' writings in class. ***<u>In-class Assignment:</u>*** Write a process essay about one of these topics or a topic of the lecturer's choice: • How to cook a favorite food • How to do a favorite hobby • How to succeed in your majorarea or professional field • How to accomplish an academic task (register for classes, apply for a scholarship, pass an exam, etc.)	[1] pp. 101 - 115	• Read [1] pp. 116-132
7	**Cause/ Effect Essays** Introduction Analyzing the models Organization Signal words and phrases **Write together:** Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice: • The cause of obesity • The effects of involvement in sports on young children • The causes of stress in college students • The effects of regular reading on students' lives	[1] pp. 116 - 132	• Practice 4, 5,6 /pp. 127-9 • Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: ○ The cause of obesity ○ The effects of involvement in sports on young children ○ The causes of stress in college students o The effects of regular readingon students' lives

8	**Cause/ Effect Essays (Cont'd)** **Review/ Correction:** Lecturer gives feedback to one or two students' writings in class. ***<u>In-class Writing:</u>*** Write the introduction, ONE body paragraph and the conclusion on one of the two topics left (except for the ones that has been worked on in class and assigned as homework) or a topic of the lecturer's choice: • The cause of obesity • The effects of involvement in sports on young children • The causes of stress in college students The effects of regular reading on students' lives		• Give peer-feedback using the rubric provided
MID-TERM EXAMINATION			
9	**Comparison/ Contrast Essays** Introduction Analyzing the modelsOrganization: • Points of comparison • Point-by-point organization • Block organization Comparison and Contrast signalwords **Write together:** Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice: • Compare and contrast the relationship between parentsand children in two different cultures. • Compare and contrast the university culture in two different countries. • Compare and contrast the culture of a small town and a big city.	[1] pp. 133 - 151	• Practice 3, 4, 6, 7/pp.142-6 • Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice. The topic should be different from the one that has been used in class: o Compare and contrast the relationship between parents and children in two different cultures. o Compare and contrast the university culture in two different countries. o Compare and contrast the culture of a small town and abig city.

10	**Comparison/ Contrast Essays (Cont'd)** **Review/ Correction:** Lecturergives feedback to one or two students' writings in class. ***<u>In-class Assignment:</u>*** Write a compare and contrast essay on the topic left or a topic ofthe lecturer's choice: • Compare and contrast the relationship between parentsand children in two different cultures • Compare and contrast the university cultures in two different countries • Compare and contrast the cultures of a small town and a big city	[1] pp. 133 - 151	• Read [1] pp. 152-168
11 & 12	**Argumentative Essays** Introduction Analyzing the model	[1] pp. 152-168	• Write an argumentative essay (300 – 350 words) on ONE of the following topics or a topic
	Organization: Block vs. Point-by-point pattern The elements of an argumentative essay: • An explanation of the issue • A clear thesis statement • A summary of the opposing arguments • Rebuttals to the opposing arguments • Your own arguments The introductory paragraph: Thesis Statement Statistics as support **Write together:** Write the introduction, ONE body paragraph and the conclusion on one of the topics below or a topic of the lecturer's choice: • Can same-sex parenting negatively influence a child's mentality? • Do famous artists have an innate talent, or do they put in great effort to improve their skills? • Is homework helpful?		of the lecturer's choice: ○ Can same-sex parenting negatively influence a child's mentality? ○ Do famous artists have an innate talent, or do they put ingreat effort to improve their skills? ○ Is homework helpful?

13	**Argumentative Essays (Cont'd)** **Review/ Correction:** Lecturer gives feedback to one or two students' writings in class. **In-class Writing:** Write an argumentative essay onthe topic left or a topic of the lecturer's choice: • Can same-sex parenting negatively influence a child's mentality? • Do famous artists have an innate talent, or do they put in great effort to improve their skills? • Is homework helpful?		• Give peer-feedback using the rubric provided
14	Review & Practice: Summarizing		Sample final test
15	**Review/Correction:** Lecturer gives feedback to one or two students' argumentative essays +sample final test in class. Lecturer has students check their own assignment scores.		
FINAL EXAMINATION			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Homework completion (10%)	80% Pass	80% Pass	80% Pass		
Week 6: In-class writing assignment: Process essay (10%)				80% Pass	
Week 10: In-class writing assignment: Compare & Contrast essay (10%)				80% Pass	
Midterm exam (30%)	80% Pass			80% Pass	80% Pass
Final exam (40%)				80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Midterm exam rubrics (100 points)

TASK 1: Write 3 topic sentences and the restatement from a thesis statement: 40 points

Parts/ Points	Answers/ Criteria	CLO
Topic sentence 1 10 pts	○ The topic sentence introduces the topic and the controlling idea (1), starting with a transition signal*.	CLO 1
Topic sentence 2 10 pts	○ The topic sentence introduces the topic and the controlling idea (2), starting with a transition signal*.	CLO 1
Topic sentence 3 10 pts	○ The topic sentence introduces the topic and the controlling idea (3), starting with a transition signal*.	CLO 1
Restatement 10 pts	○ The 3 subtopics are well paraphrased: different words and structures while the meaning kept the same.	CLO 1

Notes:

The students are supposed to use **a variety of connecting devices (single word, phrase, clause, or sentence) to show their flexibility and expertise in writing.*

TASK 2: Write a Cause/Effect essay: 60 points

Answers/ Criteria	Parts/ Points	CLO
Language use and Mechanics A wide variety of sentence patterns and vocabulary are presented correctly. Language used for *Cause-Effect Essay* is good and Meaning is clear. Spelling, capitalization, punctuation are correct.	**10**	CLO 1,4

Content The essay fulfills the requirements of the assignment & the topic is fully addressed. (15) The essay is interesting to read and originally written by the student. (5)	**20**	CLO 1,4,5
Organization ***Introduction***: The introduction ends with a thesis statement. (10) ***Body***: Each paragraph discusses a particular point and begins with a clear topic sentence. (5) Each paragraph has specific supporting details (fact, examples, etc.) (5) Each paragraph has cohesion and coherence. (5) ***Conclusion***: The conclusion summarizes the main points/paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's thoughts on the topic. (5)	**30**	CLO 1,4
Total	**60**	

5.2. Final exam rubrics: Write an argumentative essay: 100 points

Criteria/ word count	**300-350 words (100%)**	**200-299 words (80%)**	**Under 200 words (60%)**	**CLO**
Language use and mechanics (20) A wide variety of sentence patterns and vocabulary arepresented correctly. Language control is good, and meaning is clear. Spelling, capitalization and punctuation are correct.	20	16	12	CLO 1,4
Content: (20) The essay fulfills the task requirements, and the topic is fullyaddressed. The content is originally created by the students.	20	16	12	CLO 1,4,5
Organization: (60) ***Introduction***: The introduction has a thesis statement. (10) ***Body***: At least one paragraph discusses the counter-arguments. (10)	10 10	8 8	6 6	CLO 1,4

Each paragraph discusses a particular point and begins with aclear topic sentence. (10)	10	8	6	
Each paragraph has specific supporting details (fact, examples, etc.). There are no sentences that are off-topic. (10)	10	8	6	
Each paragraph has cohesion and coherence. There are transition signals to show the relationship among ideas and to link paragraphs. (10)	10	8	6	
Conclusion:				
The conclusion summarizes the main points and paraphrases the thesis statement, begins with a conclusion signal, and leaves the readers with the writer's final thought on the topic. (10)	10	8	6	
Total	**100**	**80**	**60**	

Date revised: 15 August, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of English

COURSE SYLLABUS

Course Name: Listening AE1 (Listening & Note-takingg)

Course Code: **EN008IU**

1. General information

Course designation	*The course is designed to prepare students for effective listening and note-taking skills, so that they can pursue the courses in their majors without considerable difficulty. The course is therefore lecture-based in that the teaching and learning procedure is built up on lectures on a variety of topics such as business, science, and humanities.*
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, exercise): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	Students must fulfil ONE of the following requirements to attend this course: • hold TOEFL iBT certificate with score ≥ 61 • hold IELTS certificate with score ≥ 5.5 • complete IE2 course

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>There are a number of objectives embedded in various teaching activities in Listening AE1 course:

Pre-listening activities: aim to activate students' current knowledge of the topic, and to provide them with lecture language and effective strategies in listening and note-taking to prepare themselves for the coming lecture. These activities include reading (this can be done before class meetings), discussing and reviewing what they have learned from the reading.

While-listening and post-listening activities: aim to enable students to put their newly activated knowledge and acquired strategies into work by taking notes on the lecture, using the outline given by the teacher or prepared by themselves. They are later on asked to assess their understanding based on their notes and discuss them with their classmates. Finally, as an optional activity, depending on time and students' needs, students are asked to summarize the lecture.

Follow-up activities: students are required to discuss the lecture topic and to prepare arguments for or against the topic in the debate. The purpose is to enhance students' comprehension of the lecture, and to allow them to put their acquired academic language into practice, and to experience the atmosphere of a university lecture class.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Remember different strategies and techniques in listening to academic lectures and taking notes.
CLO2. Improve their specialized knowledge of academic lectures</td></tr>
<tr><td>Skill</td><td>CLO3. Respond to academic lectures with appropriate strategies
CLO4. Communicate effectively with their classmates and professors.</td></tr>
<tr><td>Attitude</td><td>CLO5. Respond to academic lectures with confidence</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (2 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Orientation & Introduction of strategies and techniques in note-taking</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 1: New Trends in Marketing Research</td><td>3</td><td>T, U</td></tr>
<tr><td>Chapter 2: Business Ethics</td><td>3</td><td>T, U</td></tr>
<tr><td>Chapter 3: Trends in Children’s Media Use</td><td>2</td><td>T, U</td></tr>
<tr><td>Chapter 4: The Changing Music Industry</td><td>2</td><td>T, U</td></tr>
<tr><td>Chapter 5: The Placebo Effect</td><td>2</td><td>T, U</td></tr>
<tr><td>Midterm Sample Test & Review</td><td>2</td><td>T, U</td></tr>
<tr><td>Chapter 6: Intelligent Machines</td><td>3</td><td>T, U</td></tr>
<tr><td>Chapter 7: Sibling Relationships</td><td>3</td><td>T, U</td></tr>
<tr><td>Chapter 8: Multiple Intelligences</td><td>3</td><td>T, U</td></tr>
<tr><td>Chapter 9: The Art of Graffiti</td><td>3</td><td>T, U</td></tr>
<tr><td>Final Sample Test & Review</td><td>2</td><td>T, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Paper and pen tests: Correct the mistakes, Fill in the blanks, Write short answers, Write a summary paragraph.</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance

Regular on-time attendance in this course is expected. It is compulsory that students attend atleast 80% of the course to be eligible for the final examination.

Missed tests

Students are not allowed to miss any of the tests (both on-going assessment and final test). There are very few exceptions. (Only with extremely reasonable excuses, e.g. certified paper from doctors, may students re-take the tests.)

Class behavior

Students are supposed to:

prepare thoroughly for each class in accordance with the syllabus and complete allassignments upon the instructor’s request

participate fully and constructively in all class activities (and discussions if any)

display appropriate courtesy to all involved in the class

provide constructive feedback to faculty members regarding their performance

</td></tr>
<tr><td>Reading list</td><td>

[1] Frazie, L., & Leeming, S. (2013). *Lecture ready 3.* Oxford: Oxford University Press.References:

[2] Frazie, L., & Leeming, S. (2013). *Lecture ready 1, 2.* Oxford: Oxford University Press.

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	P.	Chapter	Listening oriented activities	Speaking oriented activities
WEEK 1	2	ORIENTATION		
WEEK 2	2	**Chapter 1** **New Trends in Marketing Research**	Recognizing topic introducing and lectureplan presenting expressions Organizing ideas by outlining	Expressing ideas during a discussion
WEEK 3	2	**Chapter 2** **Business Ethics**	Recognizing transition expressions Using symbols and abbreviations	Asking for clarification and elaboration during a discussion
WEEK 4	2	REVIEW		
WEEK 5	2	**Chapter 3** **Trends in Children's Media Use**	Recognizing generalization and support expressions	Giving opinions andasking for opinions during a discussion
WEEK 6	2	**Chapter 4** **The Changing Music Industry**	Recognizing expressions for clarification or emphasis Organizing notes byusing a split-page format	Expressing interest and asking for elaboration during a discussion
WEEK 7	2	**Chapter 5** **The Placebo Effect**	Recognizing cause andeffect expressions Noting causes and effects	Agreeing and disagreeing during a discussion
WEEK 8	2	Sample test correction WRAP-UP AND REVIEW		

MID-TERM EXAMINATION				
WEEK 9	2	**<u>Chapter 6</u>** **Intelligent Machines**	Recognizing expressions used topredict causes and effects Using arrows to showthe relationship between causes and effects	Learning to compromise and reach a consensus during a discussion
WEEK 10	2	REVIEW		
WEEK 11	2	**<u>Chapter 7</u>** **Sibling Relationships**	Recognizing expressions of comparison and contrast Noting comparison and contrast	Expanding on ideas during a discussion
WEEK 12	2	**<u>Chapter 8</u>** **Multiple Intelligences**	Recognizing non-verbalsignals indicating important information Representing information in list form	Keeping the discussionon topic
WEEK 13	2	REVIEW		
WEEK 14	2	**<u>Chapter 9</u>** **The Art of Graffiti**	Recognizing expressions of definition Reviewing and practicing all note taking strategies	Indicating to other when preparing to speak or pausing to collect thoughts
WEEK 15	2	WRAP-UP AND REVIEW		
FINAL EXAMINATION				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
On-going assessment (30%) (participation,individual work, group work, assignments, etc.)	80% Pass	80% Pass	80% Pass	80% Pass	80% Pass
Midterm exam (30%)	80% Pass		80% Pass		
Final exam (40%)	80% Pass		80% Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

Date revised: 15 August, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of English

COURSE SYLLABUS

Course Name: Writing AE2 (Research Paper Writing)

Course Code: **EN011IU**

1. General information

Course designation	*This course introduces basic concepts in research paper writing, especially the role of generalizations, definitions, classifications, and the structure of a research paper to students who attend English- medium college or university. It also provides them with methods of developing and presenting an argument, a comparison or a contrast.*
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, exercise): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	Students must complete Writing AE1 course

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>Students are required to work on the tasks selected to maximize their exposure to written communication and are expected to become competent writers in the particular genre: the research paper.
As writing is part of an integrated skill of reading and writing where reading serves as input to trigger writing, this course is designed to familiarize non-native students with academic literature in their major study by having them read and critically respond to texts of a variety of topics ranging from natural sciences such as biology to social sciences and humanities like education, linguistics and psychology.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the structure of a research paper and employ appropriate academic language in writing a research paper</td></tr>
<tr><td>Skill</td><td>CLO2. Read critically, analyze, and annotate academic articles and journals
CLO3. Employ the research writing skills obtained to work on their own paper in their major study.</td></tr>
<tr><td>Attitude</td><td>CLO4. Reason around ethical issues in writing research paper and avoid committing plagiarism</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Unit 1: The Academic Writing Process Introduction</td><td>4</td><td>I, T, U</td></tr>
<tr><td>Unit 2: Researching and Writing</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 3: Fundamentals & Feedback</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 4: Definitions, Vocabulary & Clarity</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 5: Generalizations, Facts and Honesty</td><td>4</td><td>T, U</td></tr>
<tr><td>Unit 6: Seeing Ideas and Sharing Texts</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 7: Description, Methods & Reality</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 8: Results, Discussion & Relevance</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 9: The Whole Academic Text</td><td>2</td><td>T, U</td></tr>
<tr><td>Unit 10: Creating the Whole Text</td><td>4</td><td>T, U</td></tr>
<tr><td>Course Review</td><td>2</td><td>U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Essay writing</td></tr>
</table>

Study and examination requirements	*Attendance* Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination. *Assignment (Literature review)* Purpose: Students will use the knowledge of paraphrasing, summarising, developing arguments, andAPA styles to write a 1,000-word literature review on a research scope of their choice. Task: – Follow guidelines on how to write a literature review. – Use relevant academic writing skills such as paraphrasing, summarising, developing arguments,and APA 7th Style Guidelines – see https://www.apastyle.org/ – Develop arguments in relation to the research scope and identify the research gap **Notes:** All papers should be typed, double-spaced, in 13-pt font, and with 1-inch margins. All papersmust be original for this class. Criterion-referenced grading is used in this course. *Missed Tests* Students are not allowed to miss any of the tests (both Mid-term and Final). There are very fewexceptions. Only with extremely reasonable excuses (eg. certified paper from doctors), students may re-take the examination. *Class Behaviors* Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Writing AE2 course with approximately 8-10 hours per week (both in class and self- study). Accordingly, students are supposed to follow the obligations below: - Prepare thoroughly for each class in accordance with the course syllabus and complete homeassignments as the instructor's request. - Participate fully and constructively in all course activities and discussions (if any). - Display appropriate courtesy to all involved in the class. - Provide constructive feedback to faculty members regarding their performance. *Plagiarism* All forms of plagiarism and unauthorised collusion are seriously regarded and could result in penalties. Plagiarism occurs when students copy or reproduce people's words or ideas and then present them as students' own work without proper acknowledgement, including when students copy the work of their fellow students. Plagiarism in student submissions can be detected by: · some web-based programs such as SafeAssign or Turnitin, or · examiner's judgments with evidence of originals

<table>
<tr>
<td></td>
<td>
The rater will review the paper to check if citations or references are provided properly. Penalties dueto improper citations or references include:
<table>
<tr><th>Degree of magnitude</th><th>Description</th></tr>
<tr><td>Below 15%</td><td>Marked as it is.</td></tr>
<tr><td>15% - 25%</td><td>The score is deducted by 25%.</td></tr>
<tr><td>25% - 40%</td><td>The score is deducted by 50%</td></tr>
<tr><td>Over 40%</td><td>The score is 0.</td></tr>
</table>
Notes: Part of the test is marked as it is if no plagiarism is detected. Students who plagiarize over 40%twice will be prohibited from sitting the final examination.

Writing Center (Room 509)
Students are encouraged to visit the Writing Center or to schedule an appointment for additional help.
</td>
</tr>
<tr>
<td>Reading list</td>
<td>
[1] Hamp-Lyons, L., & Heasley, B. (2006). Study Writing. Cambridge, UK: Cambridge University Press

[2] Articles and Essays taken from The Allyn and Bacon Guide to Writing by Ramage et al (2009),Pearson Longman.

[3] Cormack, J. & Slaught, J. (2009). English for academic study: Extended writing and research skills.Cambridge: Cambridge University Press. Garnet Education

[4] Folse, K. S. & Pugh, T. (2010). Great writing 5: Greater essays. Boston: Heinle, Cengage Learning.

[5] Keezer, S. (Ed.) (2003). Write your research report: A real-time guide. New Jersey: PearsonLearning Group.

[6] Kumar, R. (2019). Research methodology: A step-by-step guide for beginners. Sage Publications
</td>
</tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	CONTENT—SUGGESTED TASKS	ASSIGNMENT/ HOMEWORK
1	**Orientation of the Course** **<u>Unit 1:</u> The Academic Writing Process** **Introduction**	
2	**<u>Unit 1:</u> The Academic Writing Process (Cont.)** Thinking about writing processes Distinguishing between academic and personal styles of writing Grammar of academic discourse	HW: Task 10
3	**<u>Unit 2:</u> Researching and Writing** Recognizing categories and classification The language of classification The structure of a research paper	HW: Task 17
4	**<u>Unit 3:</u> Fundamentals & Feedback** Exploring comparison and contrast structuresThe language of comparison and contrast Using comparisons and contrasts to evaluate and recommend	HW: Task 12
5	**<u>Unit 3:</u> Fundamentals & Feedback (Cont.)** The research paper Identifying a research gap The writing process	**Assignment 1: Task 20**
6	**<u>Unit 4:</u> Definitions, Vocabulary & Clarity** The clarity principle The language of definition The place of definition The writing process	HW: Task 15
7	**<u>Unit 5:</u> Generalizations, Facts and Honesty** Honesty principle The language of generalization	HW: Task 13
8	**<u>Unit 5:</u> Generalizations, Facts and Honesty (Cont.)** Writing a literature review The writing process Brainstorming and clustering APA 7th Style Guidelines – see https://www.apastyle.org/	**Assignment 2: Writing Literature review**
MID-TERM EXAMINATION		
9	**<u>Unit 6:</u> Seeing Ideas and Sharing Texts** Writing about events in time Connecting events Learning about peer reviews	HW: Tasks 12 & 13

10	**<u>Unit 7:</u> Description, Methods & Reality** Describing processes and products The language for writing about processes Writing the Methods section Giving and getting formal peer feedback	HW: Tasks 9 & 11
11	**<u>Unit 8:</u> Results, Discussion & Relevance** What is an argument? The language of argument The Results and Discussion sections Finding an academic voice	HW: Task 9
12	**<u>Unit 9:</u> The Whole Academic Text** S-P-S-E: Focus on structure S-P-S-E in the introduction The language of coherence and connection Teacher evaluation	HW: Task 9
13	**<u>Unit 10:</u> Creating the Whole Text** Structure of the research paper Creating your own research	
14	**<u>Unit 10:</u> Creating the Whole Text** Plagiarism Creating citations Paraphrase and summary Authorial identity	
15	**Course Review**	**Submitting Literature review**
FINAL EXAM		

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Class participation and Assignments (30%)	80% Pass	80% Pass	80% Pass	
Midterm exam (30%)	80% Pass		80% Pass	80% Pass
Final exam (40%)	80% Pass		80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics

5.1. Midterm exam sample rubrics (100 points)

TASK 1: 30 points

CATEGORIES	CRITERIA	POINTS	CLO
Category	Farm animals seem to have more complex cognitive and social skills	**7.5**	CLO 1,2
Sub-category 1	1. Sheep experience stress a. increase stress (when isolated from the flock) b. reduce stress (when seeing familiar sheep faces)	**7.5**	
Sub-category 2	2. Cows' co-operative partnerships & physiological response on learning something new a. Those learning tasks experience an increase in heart rate (when facing same situation). b. Those not learning tasks do not experience a heart rate increase.	**7.5**	CLO 1,2
Sub-category 3	3. Pigs' different reactions react differently based on past experience a. avoid the place where they have been shut for long b. go for the place where they were released from quickly.	**7.5**	CLO 1,2
	Total	**30**	

TASK 2: 70 points

CATEGORIES	CRITERIA	POINTS	CLO
Content	All main points relevant to topic Essay question fully answers	**20**	CLO 1,3,4
Organization	Topic and purpose of the essay discussed in the introduction Each main point discussed in a paragraph All main points summarized and rephrased in the conclusion	**20**	CLO 1,3,4
Coherence	Paragraphs ordered in a systematic manner based on, for example, importance, priority, etc. Comparison/contrast transitions are properly used.	**15**	CLO 1,3,4
Style and Tone	Formal writing with full forms Polite writing Academic vocabulary	**15**	CLO 1,3,4
	Total	**70**	

5.2. Final exam rubrics: 100 points

CATEGORIES	CRITERIA	POINTS	CLO
Content	• Presenting his/her view on the question clearly and persuasively	**20**	CLO 1,3,4
Structure of ideas	• Introduction with thesis statement, and conclusion with summary and comment • Topic sentences well supported with explanations, examples, etc.	**40**	CLO 1,3,4
Convincing argumentative techniques, e.g., counterargument		**20**	CLO 1,3,4
Language use: *use vocabulary and grammatical structures*		**20**	CLO 1,3,4
	Total	**100**	

Date revised: 15 August, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
Department of English

COURSE SYLLABUS

Course Name: Speaking AE2 (Effective Presentations)

Course Code: **EN012IU**

1. General information

Course designation	*Giving presentations today becomes a vital skill for students to succeed not only in university but also at work in the future. Speaking AE2, therefore, provides students with the knowledge and skills needed to deliver effective presentations (informative and persuasive presentations).*
Semester(s) in which the course is taught	1, 2, 3
Person responsible for the course	Lecturers of Department of English
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, mini presentations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, exercise): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	Students must complete AE1 courses
Course objectives	Speaking AE2 aims at introducing an training students many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language, and so on.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand many aspects of giving a presentation: building up confidence, preparing and planning, using the appropriate language, applying effective visual aids, applying delivery techniques, dealing with questions and responding, performing body language</td></tr>
<tr><td>Skill</td><td>CLO2. Prepare and deliver effective, formal, structured presentations that are appropriate to the specific environment and audience.</td></tr>
<tr><td>Attitude</td><td>CLO3. Deliver both informative and persuasive speech with confidence</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Orientation & Introduction
Needs analysis</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Building up confidence</td><td>2</td><td>T, U</td></tr>
<tr><td>The first few minutes</td><td>2</td><td>T, U</td></tr>
<tr><td>Organizing what you want to say</td><td>2</td><td>T, U</td></tr>
<tr><td>Summarizing and concluding</td><td>2</td><td>T, U</td></tr>
<tr><td>Using equipment</td><td>2</td><td>T, U</td></tr>
<tr><td>Delivery techniques: Putting it all together</td><td>2</td><td>T, U</td></tr>
<tr><td>Group presentations for the instructor’s evaluation and advice</td><td>2</td><td>U</td></tr>
<tr><td>Introduction to persuasive speeches</td><td>2</td><td>T, U</td></tr>
<tr><td>Methods of persuasion</td><td>2</td><td>T, U</td></tr>
<tr><td>Maintaining interest</td><td>2</td><td>T, U</td></tr>
<tr><td>Dealing with problems and questions</td><td>2</td><td>T, U</td></tr>
<tr><td>Body language</td><td>2</td><td>T, U</td></tr>
<tr><td>Individual presentations for the instructor’s evaluation and advice</td><td>4</td><td>U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Oral Presentations</td></tr>
</table>

Study and examination requirements	*Attendance* Regular on-time attendance in this course is expected. A student will be allowed no more than three absences. It is compulsory that the students attend at least 80% of the course to be eligible for the final examination. *Missed Tests* Students are not allowed to miss any of the tests (both Mid-term and Final). There are very fewexceptions. Only with extremely reasonable excuses (e.g. certified paper from doctors), students may re-take the examination. *Class Behaviors* Students are required to treat their studying in college as a full-time job and spend an adequate amount of time for this Speaking AE2 course with approximately 8-10 hours per week (both in class and self-study). Accordingly, students are supposed to follow the obligations below: • Prepare thoroughly for each class in accordance with the course syllabus and completehome assignments as the instructor's request. • Participate fully and constructively in all course activities and discussions (if any). • Display appropriate courtesy to all involved in the class. • Provide constructive feedback to faculty members regarding their performance. *Plagiarism* Students are warned not to copy from other books or from their peers for all assessment tasks. Committing plagiarism will result in 0 point for the task. Students who plagiarize twice will be prohibited from sitting the final examination.
Reading list	[1] Lowe, S, & Pile, L. (2010). *Presenting.* Singapore*:* Cengage Learning [2] Comfort, J. (1997). *Effective presentations*. Oxford: Oxford University Press [3] Lucas, S. (2014). *The art of public speaking* (12th edition). New York: McGraw-HillEducation. [4] Harrington, D., & Lebeau, C. (2009). *Speaking of speech*. Macmillan

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

WEEK	Content	MATERIAL(S) COVERED	ACTIVITIES
WEEK 1	· **Orientation &Introduction** · **Needs analysis**	[1] *Presenting*, p. 5	Students will: • receive an introduction to effective presentation • think about their strength and weaknesses in presenting in English • identify and prioritize their immediate and future needs for presenting • share tips on improving weaknesses
WEEK 2	**Building up confidence**		Student will: - give a short speech about themselves to help them overcome initial shyness of standing up and speaking in public
WEEK 3	**Unit 1: The first few minutes**	• *Presenting*, pp. 8-13 • *Effective Presentations*: p.7 + video clip; p.13+ video clip	Students will: • learn the importance of making a good first impression • learn useful phrases for greeting the audience, introducing themselvesand others, and giving the purpose of their presentation
WEEK 4	**Unit 3: Organizing what you want to say**	• *Presenting*, pp. 22-27) • *Effective Presentations*: p.19 + video clip	Students will: • look at the importance of structuring their presentation • learn the useful phrases for outlining their presentation, organizing ideas and moving between different sections of their presentation
WEEK 5	**Unit 6: Summarizing and concluding**	• *Presenting*, pp. 40-45 • *Effective Presentations*: p.41 + video clip	Students will: • look at ways of finishing a presentation effectively • learn useful phrases for ending their presentation, summarizing, handing over and thanking

WEEK 6	**Unit 2: Using equipment**	• *Presenting*, pp. 14-21) • *Effective Presentations*: p.31 + video clip	Students will: • use equipment and visuals to support their presentation • learn useful phrases for referringto visuals, ensuring their audience can see and expanding on notes
WEEK 7	**Delivery techniques: Putting it alltogether**	[2] *Effective Presentations*: p.50 + video clip Assignment: Topic(s) for group presentation)	Students will: • watch a model presentation and discuss do's and don'ts for effective delivery • pick group members and plan their presentations for Week 8
WEEK 8	Group presentations for the instructor's evaluation and advice		Students will: • take turn to deliver a presentationon the topic(s) assigned by the instructor • consult the instructor for advice on the mid-term exam preparation
MIDTERM EXAMINATION Students will give a five-to-six minute informative presentation on a topic to be determined.			
WEEK 9	**Introduction to persuasive speeches**	[3] *The art of public speaking*, Chapter 15 (Handout given by the instructor)	Students will: • know types of persuasive speeches • know typical organizations of a persuasive speech
WEEK 10	**Methods of persuasion**	[3] *The art of public speaking*, Chapter 16 (Handout given by the instructor)	Students will learn to persuade the audience by: • building credibility • using evidence • reasoning • appealing to emotions
WEEK 11	**Unit 4: Maintainin ginterest**	• *Presenting*: pp. 28-33) • *Effective Presentations*: p.25 + video clip)	Students will: • look at maintaining interest through effective delivery • learn useful phrases for clarifying what you mean, checking if the audience is following and involving the audience

WEEK 12	**Unit 5: Dealing with problems and questions**	○ *Presenting*: pp. 34-39) ○ *Effective Presentations*: p.44 (Question time)	Students will: • learn strategies for coping in unexpected situations • learn useful phrases for dealing with problems and questions
WEEK 13	**Unit 6: Body language**	[2] *Effective Presentations* : pp.36-39	Students will: • practise using language and body language to communicate the message clearly and persuasively • watch video clips about body language • learn how to control posture, eye contact, gestures and voice inflection
WEEK 14	**Practice**	(to be determined by the instructor)	Students will: - deliver individual or group presentations (assigned by the instructor)
WEEK 15	**Wrap-up andadvice**	(to be determined by the instructor)	Students will: • consult the instructor for advice onthe final exam preparation • continue to deliver individual or group presentations (if any)
FINAL EXAMINATION Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined			

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**
On-going Assessment (30%) (discussion, group presentation, individualpresentation, and so on) *(It is requested that lecturers collect students' scripts or any type of evidence of their participation for possiblefact check).*	80% Pass	80% Pass	80% Pass
Midterm exam (30%) (Students will give a five-to-six-minute informative presentation on a topic to be determined)	80% Pass	80% Pass	80% Pass
Final exam (40%) (Students will deliver a seven-to-eight-minute persuasive presentation on a topic to be determined.)	80% Pass	80% Pass	80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics & Marksheets

5.1.Midterm exam rubrics and marksheets

	Very Poor	Poor	Average	Good	Excellent
Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, Etc)	– Mumbles, often mispronounces, very difficult to understand. – Dead person talking, voice to text software does better	– Slurred speech, mispronounces some words. Difficult to understand. – Quiet, monotone, sing/song, little or no expression, boring.	– Clear voice, few pronunciation errors. Some slurring Most can understand the presentation – Some use of voice to show interest	– Crisp, clear voice, correct, precise pronunciation, all can understand. – proper volume; steady rate; enthusiasm; confidence	– Native like
Grammar& Vocabulary (Usage And Appropriateness For Audience)	– Frequent grammar or spelling errors – Inappropriate level. for the audience, Misuse vocabulary	– Noticeable Errors – Often too simple or sophisticated, inconsistent. Some vocabulary incorrectly used	– Minor errors – Generally appropriate, little variation or creativity	– No errors, but simple language – Always appropriate for the audience. Excellent use of vocabulary	– No errors. Excellent use of grammar to support ideas – Creative use of language
Body Language, Gestures, Eye Contact (Turns back to audience and reads screen – 0)	– Dead person on stage – Almost no eye contact, reads notes/screen	– Excessive movement or many distracting gestures – Occasionally eye contact, mostly reads notes/screen	– Some distracting gestures, and some movement and useful gestures – Generally maintains eye contact frequently reads notes/screen	– No distracting gestures. Body language supports speech – Excellent eye contact, seldom uses notes	– Excellent use of body language – Constant eye contact, no use of notes
Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST)	– Difficult to follow as disorganized	– Generally follows outline, poor introduction or conclusion.	– Follows outline, material generally well organized. Some use of transitions and linkage of ideas. Conclusion acceptable	– Follows outline, material well organized. – Ideas clearly linked. Some use of transitions	– Excellent, clear linkage of ideas. – Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion
Content: Relevant/ Interesting/ Accurate	– Several errors or lacks critical information	– Some errors and has irrelevant information	– Information is generally accurate, minor errors, generally meets needs of the audience	– Accurate information, related to needs of audience	– No errors, answers all needs of the audience
Visual Aids: Appropriate, Clear (Movies, sound – 0)	– Slides consist of full paragraphs of text, no or superfluous graphics – Tiny font	– Slides have full sentences and occasional superfluous graphics, Difficult to read	– Slides have short phrases, Graphics relate to text and presentation. Easily read	– Attractive, informative graphics, only key words, easily understood, Good use of masking	– Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation
Overall effectiveness	– Ineffective, alienated audience	– Little positive effect or exchange of info.. Audience bored	– Audience learned something, no change in attitude	– Audience generally positive and learned from presentation	– Audience was kept interested and would remember key points

INTERNATIONAL UNIVERSITY
DEPARTMENT OF ENGLISH

SPEAKING AE2 - **MIDTERM** EXAMINATION
RATING CHECKLIST

ACADEMIC YEAR 2021 - 2022
DATE: _____

Student name : _____ Student ID : _____
Topic : _____

Wtg.	*Criteria*	*Very poor*	*Poor*	*Average*	*Good*	*Excellent*	*Comments*
15	**Pronunciation & Voice Techniques (Pause, Volume, Speed Change, Stress, Tone, etc.)**	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
15	**Language use: Grammar & Vocabulary (usage and appropriateness for audience)**	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
10	**Body Language: Gestures, Eye contact, Facial expressions** (turns back to the audience and reads from screen: 0 pt)	*(1-2)*	*(3-4)*	*(5-6)*	*(7-8)*	*(9-10)*	
20	**Organization: Intro, Body, Ending, Coherence** (see below)	*(1-4)*	*(5-8)*	*(9-12)*	*(13-16)*	*(17-20)*	
20	**Content: Relevance, Accuracy**	*(1-4)*	*(5-8)*	*(9-12)*	*(13-16)*	*(17-20)*	
10	**Visual aids: Appropriateness, Clarity** (Movies, sound: 0 pt)	*(1-2)*	*(3-4)*	*(5-6)*	*(7-8)*	*(9-10)*	
10	**Overall effectiveness**	*(1-2)*	*(3-4)*	*(5-6)*	*(7-8)*	*(9-10)*	
	FINAL SCORE: /100						

Negative points: ✧ Timing: <3m: *-15pts* 3m - 3m29: *-10pts* 3m30 - 3m59: *-5pts* 4m - 6m: OK >6m: *-5pts*

Organization:	*Yes*	*No*
A. Introduction		
a. Greeting, name, position *(Good morning ladies and gentlemen. My name is____. I'm a____)*	☐	☐
b. Purpose/ Objective *(The purpose of this talk is to _____)*	☐	☐
c. Connect with the audience *(I can see that all of you love to___)*	☐	☐
d. Outline/ Main part *(I've divided my presentation into ___ parts)*	☐	☐
e. Questions *(Should you have any questions, please save them until the end of my presentation)*	☐	☐
B. Body *(Transitions: Let's start with____/ That brings me to____/ Firstly, Secondly, Next, Lastly)*	☐	☐
C. Ending		
a. Signaling the end *(That brings me to the end of my presentation)*	☐	☐
b. Summary *(Let me just run over the key points again)*	☐	☐
c. Closing *(Thank you very much for your attention)*	☐	☐
d. Inviting questions *(I'd be glad to answer any questions you might have)*	☐	☐

Examiner : .....

5.2.Final exam rubrics and marksheets

	Very Poor	Poor	Average	Good	Excellent
Pronunciation, Voice Techniques (Pauses, Volume, Speed Change, Stress, Tone, etc.)	– Mumbles, often mispronounces, very difficult to understand. – Dead person talking, voice to text software does better	– Slurred speech mispronounces some words. Difficult to understand. – Quiet, monotone, sing/song, little or no expression, boring.	– Clear voice, few pronunciation errors. Some slurring Most can understand the presentation – Some use of voice to show interest	– Crisp, clear voice, correct, precise pronunciation, all can understand. – Proper volume; steady rate; enthusiasm; confidence	– Native like
Grammar & Vocabulary (Usage and Appropriateness for Audience)	– Frequent grammar or spelling errors – Inappropriate level. for the audience, Misuse vocabulary	– Noticeable Errors – Often too simple or sophisticated, inconsistent. Some vocabulary incorrectly used	– Minor errors – Generally appropriate, little variation or creativity	– No errors, but simple language – Always appropriate for the audience. Excellent use of vocabulary	– No errors. Excellent use of grammar to support ideas – Creative use of language
Body Language: Posture, Gestures, Eye contact, Facial expression (Turns back to audience and reads screen – 0)	– Dead person on stage – Almost no eye contact, reads notes/screen	– Excessive movement or many distracting gestures – Occasionally eye contact, mostly reads notes/screen	– Some distracting gestures, and some movement and useful gestures – Generally maintains eye contact frequently reads notes/screen	– No distracting gestures. Body language supports speech – Excellent eye contact, seldom uses notes	– Excellent use of body language – Constant eye contact, no use of notes
Organization: Intro, Main, Ending, Coherence (see RATING CHECKLIST**)**	– Difficult to follow as disorganized	– Generally follows outline, poor introduction or conclusion.	– Follows outline, material generally well organized. Some use of transitions and linkage of ideas. – Conclusion acceptable	– Follows outline, material well organized. – Ideas clearly linked. Some use of transitions	– Excellent, clear linkage of ideas. – Good transitions Arouses interest in Introduction, and summarizes clearly main points in conclusion
Content: Relevant/Accurate, Informative and Persuasive	– Several errors or lacks critical information	– Some errors and has irrelevant information – Just focus on giving information	– Information is generally accurate, minor errors – Give reasons with little or no emphasis on persuasion	– Accurate information, related to needs of audience – Give frequent emphasis on persuasion	– No errors, answers all needs of the audience – Persuade the audience well
Visual Aids: Appropriateness, Clarity *(Use of video clip exceeding 20 seconds – 0)*	– Slides consist of full paragraphs of text, no or superfluous graphics – Tiny font	– Slides have full sentences and occasional superfluous graphics, – Difficult to read	– Slides have short phrases; Graphics relate to text and presentation. Easily read	– Attractive, informative graphics, only key words, easily understood, good use of masking	– Professional quality, Excellent use of visual, no unrelated graphics, easily read, supports presentation
Question response	– Welcomes the question	– Listens carefully, doesn't interrupt	– Thinks before answering – Clarifies, rephrases as needed	– Answers correctly and briefly	– Checks to see if questioner is satisfied

INTERNATIONAL UNIVERSITY
DEPARTMENT OF ENGLISH

SPEAKING AE2 - **FINAL EXAMINATION**
RATING CHECKLIST

ACADEMIC YEAR 2021 – 2022
DATE: _____

Student name : ..... Student ID : .....
Topic : .....

Wtg.	*Criteria*	*Very poor*	*Poor*	*Average*	*Good*	*Excellent*	*Comments*
15	**Pronunciation & Voice Techniques (Pause, Volume, Speed Change, Stress, Tone, etc.)**	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
10	**Language use: Grammar & Vocabulary (usage and appropriateness for audience)**	*(1-2)*	*(3-4)*	*(5-6)*	*(7-8)*	*(9-10)*	
15	**Body Language: Posture, Gestures, Eye contact, Facial expression** (turns back to the audience and reads from screen: 0 pt)	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
15	**Organization: Intro, Body, Ending, Coherence** (see below)	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
20	**Content: Relevant, Accurate, Informative and Persuasive**	*(1-4)*	*(5-8)*	*(9-12)*	*(13-16)*	*(17-20)*	
15	**Visual aids: Appropriateness, Clarity** (Movies, sound: 0 pt)	*(1-3)*	*(4-6)*	*(7-9)*	*(10-12)*	*(13-15)*	
10	**Question response**	*(1-2)*	*(3-4)*	*(5-6)*	*(7-8)*	*(9-10)*	
	SCORE (max.100): _____	*BONUS (max.10): _____*				**TOTAL SCORE (max.100): _____**	

Deduction points: ✧ No references: -10 ✧ Timing: <5m: *-15pts* 5m - 5m29: *-10pts* 5m30 - 5m59: *-5pts* >8m: *-5pts*

Bonus points: *Up to **10pts for creativity**, which involves PowerPoint design, Organization of information, Presentation style ...*

Organization:	***Yes***	***No***
A. Introduction		
a. Greeting, name, position *(Good morning, ladies and gentlemen. My name is___. I'm a___)*	☐	☐
b. Connect with the audience *(I can see that all of you love to___)*	☐	☐
c. Purpose/ Objective *(The purpose of this talk is to ____)*	☐	☐
d. Time length *(My presentation should last for ___)*	☐	☐
e. Outline/ Main part *(I've divided my presentation into ___ parts)*	☐	☐
f. Questions *(Should you have any questions, please save them until the end of my presentation)*	☐	☐
B. Body *(Transitions: Let's start with___/ That brings me to___/ Firstly, Secondly, Next, Lastly)*	☐	☐
C. Ending		
a. Signaling the end *(That brings me to the end of my presentation)*	☐	☐
b. Summary *(Let me just run over the key points again)*	☐	☐
c. Closing *(Thank you very much for your attention)*	☐	☐
d. Inviting questions *(I'd be glad to answer any questions you might have)*	☐	☐

Examiner : _____

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Introduction to Civil Engineering

Course Code: **CE100IU**

1. General information

Course designation	*The course provides an outline of the long history, present status and future challenges of civil engineering. Ethics and professional responsibility and a description of different fields of civil engineering are presented. The course provides an overview of different works, and relationships between different disciplines of civil engineering such as construction materials, structural engineering, water resources engineering, geotechnical engineering, surveying, transportation, environmental and urban engineering, and construction technology…. An overview of the design process of a project such as buildings, bridges, dams, roads is provided. The national strategy and great plans for developing the infrastructure system and urban development of Vietnam are presented with related important decisions of the Government.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Phạm Nguyễn Linh Khánh A/Prof. Phạm Ngọc Msc. Phạm Nhân Hòa
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, discussion, lesson learnt from real structures
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 55 Contact and work-site hours (whether lecture, exercise, laboratory session, etc.): 25 The private study includes examination preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>No.</td></tr>
<tr><td>Parallel course</td><td>No.</td></tr>
<tr><td>Course objectives</td><td>- Provides an overview of civil engineering, the construction industry, and the profession.
- Provides an understanding of the relationship between different fields in civil engineering practice and different subjects within the curriculum of civil engineering.
- Provides an understanding of national strategy and plans to develop infrastructure systems and urban development.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1. Interpret an overview of structures in fields of civil engineering, the construction industry, and the profession.
CLO2. Interpret the relationship between different fields in civil engineering practice and different subjects within the curriculum of civil engineering.</td></tr>
<tr><td>Skills</td><td></td></tr>
<tr><td>Attitude</td><td>CLO3. Work in team, independently and professionally</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours); or work-site hours (6 hours)
Teaching levels: I (Introduce);
<table>
<tr><td>Topic</td><td>Weight</td><td>Level</td></tr>
<tr><td>Overview of Civil Engineering: its development from the past to present, its trend in the future; and how it links to different fields…</td><td>2</td><td>I</td></tr>
<tr><td>Introduction to Buildings and Industrial structures through a study tour</td><td>1</td><td>I</td></tr>
<tr><td>Introduction to Transportation and Bridges Engineering through a study tour</td><td>1</td><td>I</td></tr>
<tr><td>Introduction to Water Resource Engineering through a study tour</td><td>1</td><td>I</td></tr>
<tr><td>Final individual project</td><td>2</td><td>1</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Individual project: Students submit a report and present the project in which show comprehensive information about one civil project such as tall buildings, bridges, hydraulic structures, and so on.</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. But, for the study at the sites, absent is not allowed. Students will be assessed based on their class participation. Questions and discussions are strongly encouraged. Assignments/Examination: Students must have a GPA of more than 50/100 points overall to pass this course.
Reading list and Media employed	**Textbooks:** [1] C P Kaushik, S S Bhavikatti, Anubha Kaushik, "Basic Civil and Environmental Engineering", New Age International (P) Ltd., Publishers, 2010. [2] Pham Nhan Hoa, "Lecture Note,: STRUCTURAL ANALYSIS AND DESIGN WITH CIVIL ENGINEERING SOFTWARE", Sep 2019 [3] R.C. Hibbeler, "Structural Analysis", 9th Edition, Pearson Prentice Hall, US [4] W. H. Mosley, J. H. Bungey and R. Hulse, "Reinforced concrete design to Eurocode 2", PALGRAVE MACMILLAN, 7th Edition, 2012. [4.1] Eurocode 2: Design of Concrete Structures - Part 1-1: General rules and rules for buildings [5] Trahair, NS.; Bradford MA.; Nethercot DA. and Gardner, L. "The Behavior Design of Steel Structures to EC 3", 4th Edition, Taylor and Francis, 2007. [5.1] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-1: Design of Steel Structures - GENERAL RULES and RULES OF BUILDINGS, British Standards Institution, London, UK. [5.2] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-5: General rules - PLATED STRUCTURAL ELEMENTS, British Standards Institution, London, UK. [5.3] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-8: Design of Steel Structures - DESIGNS OF JOINS, British Standards Institution, London, UK. [6] BRAJA M. DAS, KHALED SOBHAN, "Principles of Geotechnical Engineering", 9th Edition, Cengage Learning, 2018 [7] BRAJA M. DAS, "Principles of Foundation Engineering, SI", 7th Edition, Cengage Learning, 2011. [8] Hands-on Machine Learning with Scikit-Learn & Tensorflow, Aurelien Geron, O'Reilly, 2017 [9] Ed. Wai-Fah Chen and Lian Duan, Bridge Engineering Handbook, Boca Raton: CRC Press, 2000. [10] Novak P., Moffat A.I.B., Nalluri C, and Narayanan, Hydraulic structures (4th Edition), Taylor & Francis Group. 2007.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2	x	x									
3						x					

3. Planned learning and assessment activities.

Week	**Topic**	**CLO**	**Assessments activities**	**Learning activities**	**Resources**

1	**Topic 1:** Overview Civil Engineering (CE): • Revolution of civil structures: in the past, at present and in future • The roles of CE for social-economic development • Application of AI (or artificial intelligence), Green building, and Building Information Modeling (BIM) • Buildings and Design process of building's elements	1,2,3	In class lecture: attendance Q&A	Reading materials Discussion;	[1-10]
2	**Topic 2:** Introduction to Buildings and Industrial structures through a study tour	1,2,3	Site lectures: attendance and discussion	Visting and Learning lessons at existing constructed buildings or construction site of buildings	[1-10]
3	**Topic 3:** Introduction to Transportation and Bridges Engineering through a study tour	1,2,3	Site lectures: attendance and discussion	Visting and Learning lessons at an existing constructed bridges or construction site of buildings	[11]
4	**Topic 5:** Introduction to Water Resource Engineering through a study tour	1,2,3	Site lectures: attendance and discussion	Visting and Learning lessons at an existing hydraulic structures or construction site of hydraulic structures	[12]
5	Back up			If it is needed	
6	Final individual project		In class: Attendance, presentation, Q&A	Submission of report and presentation of individual project	

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 2 components, including progress assessment and final presentation. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	Progress assessment (PA, 30%)			
1.1	Class attendance (30% of PA)			Attended 80%Pass
1.2	Work-site Activities (70% of PA)	Q&A 50%Pass	Q&A 50%Pass	Q&A 50%Pass
2	Report submitted and presentation of final individual project (Fin, 70%)	Q&A 50%Pass	Q&A 50%Pass	Q&A 50%Pass

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 6th, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Nguyen Hoai Nghia

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: INTRODUCTION TO COMPUTING FOR ENGINEERS

Course Code: **CE102IU**

1. General information

Course designation	*This course is an introduction to the key principles of programing along with the use of the available math functions given in language MATLAB. This course also covers the way of establishing and solving civil engineering problems with the help of EXCEL, and VBA*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None
Parallel course	None

Course objectives	The aim of this course is to provide - students' understanding of the concept Computers and Programming, apply the concept of Vectors and Arrays, Execution Control, Functions, Charater Strings, Cell Arrays and Structures, and Matrices to solve enginnering problems - problem solving skills using the software in civil engineering problems by using Microsoft-EXCEL software with standard tools and VBA in EXCEL
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	**Course learning outcome (CLO)/ Competency**
Knowledge	CLO1: become proficient in programming with environment MATLAB CLO2: enhance problem solving skills using the software in civil engineering problems with EXCEL and, VBA
Skills	
Attitude	CLO3: Work independently and professionally

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
MATLAB		
Introduction, Vectors and Arrays in MATLAB	1	I,T,U
Execution Control	1	I,T,U
Functions	1	I,T,U
Character Strings	1	I,T,U
Cell Arrays and Structures	1	I,T,U
Plotting	1	I,T,U
Symbolic	1	I,T,U
Matrix	1	I,T,U
EXCEL AMD VBA		
Introduction EXCEL and WORKSHEET - Mathematical operations	1	I,T,U
Functions	1	I,T,U
Graphs - Predict and Forecast tools Goal Seek and Solver Tools	1	I,T,U
Curve Fitting and 1-way and 2-way Interpolation	1	I,T,U
User defined Forms	1	I,T,U

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.

Reading list and Media employed	**Textbooks:** 1. MATLAB Programming for Engineers (Stephen J. Chapman), Thompson Books. 2. Excel 2010 Introduction: Part I and II, Stephen Moffat **Additional references:** 3. MATLAB online help. (http://www.mathworks.com)

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2	x	x									
3						x					

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1-3	Introduction, Vectors and Arrays in MATLAB	1,3	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 1,2,3
4	Execution Control	1,3	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 4
5-6	Functions	1,3	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 5
7-8	Character Strings	1,3	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 6
	Cell Arrays and Structures	1,3	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 7
	Plotting	1,3	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 8
	Symbolic	1,3	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 9
	Matrix	1,3	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture;	[1] Chapter 10

				Discussion; and doing Quiz in class	
9-10	**MIDTERM EXAMINATION**		**WRITING**		
11-12	Introduction EXCEL and WORKSHEET - Mathematical operations	2,3	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[2] Chapter 1,2
13	Functions	2,3	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[2] Chapter 3
14-15	Graphs - Predict and Forecast tools Goal Seek and Solver Tools	2,3	Attendance Q&A Homework 7	Reading materials before class;	[2] Chapter 4
16-17	Curve Fitting and 1-way and 2-way Interpolation	2,3	Attendance Q&A Homework 7	Doing the lecture; Discussion; and doing Quiz in class,	[2] Chapter 5
	User defined Forms	2,3	Attendance Q&A Homework 8	Doing the lecture; Discussion; and doing Quiz in class,	[2] Chapter 6
18-19			**WRITING**		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	**Progress Assessment (PA, 30%)**			
1.1	Class attendance (25% of PA)			Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)			Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-8, Submitted 80%Pass
2	**Midterm exam (Mid, 30%)**	Q1-4, 60%Pass		
3	**Final exam (Fin, 40%)**		Q5-7, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. **Date revised: June 06, 2023**

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: COMPUTATIONAL METHODS FOR CIVIL ENGINEERING

Course Code: CE213IU

1. General information

Course designation	*Application of computational methods to civil engineering problems. Overview of numerical methods including engineering differential equations, systems of linear and nonlinear equations, numerical differentiation, integration and interpolation. Solving differential equations by finite element method. Introduce optimization problems in civil engineering, and optimization solvers*
Semester(s) in which the course is taught	3, 4
Person responsible for the course	*Nguyễn Bá Quang Vinh (PhD)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Calculus, Mechanics of Material 1</td></tr>
<tr><td>Course objectives</td><td>The aim of this course is to
- Give an introduction to fundamental numerical methods and apply to solve various engineering differential equations.
- Developing structured computer programming using Matlab.
- Give an introduction to modern approximation techniques.
- Give students an opportunity to hone their skills in programming and problem solving.
- Analyzing and solving the problems using AI tools.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Show the fundamental numerical methods and apply to solve various engineering differential equations.
CLO2. Apply numerical methods to obtain approximate solutions to mathematical problems.</td></tr>
<tr><td>Skill</td><td>CLO3. Demonstrate an ability to develop structured computer programming using Matlab.
CLO4. Demonstrate an ability to identify, formulate, and solve CE or CM problems by means of ML.</td></tr>
<tr><td>Attitude</td><td>CLO5. Work independently and professionally.</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction</td><td>1</td><td>I</td></tr>
<tr><td>Mathematical modeling</td><td>1</td><td>T, U</td></tr>
<tr><td>Finite element method for one dimensional structures</td><td>6</td><td>T, U</td></tr>
<tr><td>Regression</td><td>1</td><td>T, U</td></tr>
<tr><td>Machine learning</td><td>1</td><td>T, U</td></tr>
<tr><td>Iterative methods for non-linear problems</td><td>2</td><td>T, U</td></tr>
<tr><td>Optimization</td><td>3</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.
Reading list	**Textbooks:** [1] S.C. Chapra, "*Applied Numerical Methods with Matlab for Engineers and Scientists*", 3rd edition, McGraw-Hill, NY, 2012. **Additional references:** [2] Jacob Fish and Ted Belytschko. *A First Course in Finite Elements*, John Wiley & Sons Ltd, Great Britain, 2007.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-5) and Program/Student Learning Outcomes (ILO) (a -k) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x										
3										x	
4		x									
5				x			x				

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction	1,2,3,4,5	Attendance Q&A	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 1 [2] Chapter 1
2	Mathematical modeling	1,2,3,4,5	Attendance Q&A Homework 1	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 2, 3 [2] Chapter 2
3-8	Finite element method for one dimensional structures	1,2,3,4,5	Attendance Q&A Homework 2-7	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 3, 5
9-10	Mid examination		Writing		
11	Regression	1,2,3,4,5	Attendance Q&A Homework 8	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 14

12	Machine learning	1,2,3,4,5	Attendance Q&A Homework 9	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 15
13-14	Iterative methods for non-linear problems	1,2,3,4,5	Attendance Q&A Homework 10-11	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 5, 6
15-17	Optimization	1,2,3,4,5	Attendance Q&A Homework 12-15	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 7
18	Final examination		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4	CLO5
1	**Progress Assessment (PA, 20%)**					
1.1	Class attendance (25% of PA)					Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)					Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-15, Submitted 80%Pass	HW1-15, Submitted 80%Pass	HW1-15, Submitted 80%Pass
2	**Midterm exam (Mid, 30%)**	Q1-5, 60%Pass	Q1-5, 60%Pass		Q1-5, 60%Pass	
3	**Final exam (Fin, 50%)**	Q1-5, 60%Pass	Q1-5, 60%Pass		Q1-5, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. **Rubrics (optional)**
   - No

6. **Date revised: June 06, 2023**

Ho Chi Minh City, June 12, 2023

Head of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Engineering Mechanics – Statics

Course Code: **CE101IU**

1. General information

Course designation	*Forces, moments, and couples; resultants of force systems; equilibrium analysis and free-body diagrams; analysis of forces acting on members of trusses, frames, etc.; Coulomb friction; centroids, center of mass, resultant of a distributed force system, moment of inertia, parallel-axis theorem, rotated-axis theorem, internal force diagrams of beams.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	Calculus 2 and Physics 1
Parallel course	None

Course objectives	The aim of this course is to provide - Analyze and apply how to solve equilibrium problems involving trusses, frames and machines. - Obtain knowledge of the laws of dry friction and apply it to solve equilibrium problems involving static friction - Apply properties of areas and be able to calculate centroids and inertia moments of an area. - Apply the concept of internal forces in members, and be able to draw shear and bending-moment diagrams for beams.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	**Course learning outcome (CLO)/ Competency**
Knowledge	CLO1: Ability to analyze engineering problems, involving equilibrium equations and to determine the internal forces and draw diagrams for beams and trusses. CLO2: An ability to calculate centroids and moments of inertia of various cross sections.
Skills	
Attitude	CLO3: Work independently and professionally

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
- Fundamental concepts - Systems of Units, - Vector overview: operations, projections	1	I
- Forces as vectors, Two-dimensional force systems, and Three-dimensional force systems. - System of forces, moment and couples - Equivalent systems.	1	T
- Conditions for equilibrium, Free-body diagrams, and Equilibrium equations for 2D and 3D. - Friction - Trusses, The method of joints, and The method of sections - Frames	1	T, U
- Center of gravity and mass - Centroid for a body - Resultant of a distributed force system - Moments of inertia for areas - Parallel-axis theorem - Rotated-axis theorem	1	T, U
- Internal forces in beams - Shear force and bending moment diagrams	1	T, U

Examination forms	Constructed-response test

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.
Reading list and Media employed	**Textbooks:** [1] R. C. Hibbeler, Static and Mechanics of Materials, 4th Edition, Pearson, 2014. **Additional references:** [2] J. L. Meriam and L.G Kraige, Engineering Mechanics—Statics, 5th edition, Wiley, 2002.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2	x	x									
3						x					

3. Planned learning and assessment activities

Week	**Topic**	**CLO**	**Assessments activities**	**Learning activities**	**Resources**
1	- **Fundamental concepts** - **Systems of Units** - **Vector overview: operations, projections**	1,2,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 1
2	- **Forces as vectors, Two-dimensional force systems, and Three-dimensional force systems.** - **System of forces, moment and couples** - **Equivalent systems.**	1,2,4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 2
3-8	- **Conditions for equilibrium, Free-body diagrams, and Equilibrium equations for 2D and 3D.** - **Friction** - **Trusses, The method of joints, and The method of sections** - **Frames**	1,2,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 3-5
9-10	MIDTERM EXAMINATION		WRITING		

11-13	- **Center of gravity and mass** - **Centroid for a body** - **Resultant of a distributed force system** - **Moments of inertia for areas** - **Parallel-axis theorem** - **Rotated-axis theorem**	1,3,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 6
14-17	- **Internal forces in beams** - **Shear force and bending moment diagrams**	1,3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 7
18-19	FINAL EXAMINATION		WRITING		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	**Progress Assessment (PA, 30%)**			
1.1	Class attendance (25% of PA)			Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)			Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-5, Submitted 80%Pass
2	**Midterm exam (Mid, 20%)**	Q1-2, 60%Pass		
3	**Final exam (Fin, 50%)**	Q1-2, 60%Pass	Q3-4, 60%Pass	Q1-4, 60%Pass

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Artificial Intelligence in Civil Engineering and Construction Management

Course Code: CE217IU

1. General information

Course designation	This course introduces how we apply artificial intelligence in civil engineering (CE) and construction management (CM). Several typical problems of applied artificial intelligence in CE and CM are introduced, such as regression/classification/segmentation/abnormality detection in experimental data, monitoring data, etc. The course introduces machine learning methods frequently utilized in CE and CM, including k-nearest neighbor, neural network, decision tree, and random forest, and explains their concepts so that students can know how to formulate a problem-solving.
Semester(s) in which the course is taught	
Person responsible for the course	Dr. Pham, Nguyen Linh Khanh; Dr. Nguyen, Ba Quang Vinh; Dr. Nguyen, Van Tiep
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, discussion, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 135 (Estimated) Contact hours: - lecture: 36 - Discussion: 9 Private study, including examination preparation, specified in hours: 90
Credit points	3

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td></td></tr>
<tr><td>Course objectives</td><td>The course provides students with basic definitions of machine learning and its implications in industry. The students have the ability to recognize and formulate the problems in CE and CM that AI can apply. Furthermore, some basis machine algorithms (e.g., neural network, support vector machine, decision tree) are introduced to aid the student in analyzing and solving real case problems. Also the impacts and contemporary issues of artificial intelligence in CE and CM are also discussed.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand basic definitions of machine learning, and its implications in the industry</td></tr>
<tr><td>Skill</td><td>CLO2. Apply mathematics and ML algorithms to solve problems.
CLO3. Design and conduct experiments, analyze and interpret CE and CM data</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction</td><td>1</td><td>I</td></tr>
<tr><td>Linear Algebra</td><td>1</td><td>T</td></tr>
<tr><td>Data analysis</td><td>2</td><td>T, U</td></tr>
<tr><td>Machine learning – Unsupervised learning algorithm</td><td>2</td><td>T</td></tr>
<tr><td>Machine learning – Supervised learning algorithm</td><td>2</td><td>T</td></tr>
<tr><td>Neural network</td><td>2</td><td>T</td></tr>
<tr><td>Machine learning issues</td><td>1</td><td>I</td></tr>
<tr><td>Case studies</td><td>1</td><td>I</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: To pass this module, students must have more than 50/100 points overall.
Reading list	[1] Deep Learning, Ian Goodfellow, Yoshua Bengio, and Aaron Courville, The MIT Press, 2016 (free online: http://www.deeplearningbook.org/) [2] Hands-on Machine Learning with Scikit-Learn & Tensorflow, Aurelien Geron, O'Reilly, 2017.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (PLO) (a-j) is shown in the following table:

	PLO									
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1		x								
2		x	x							
3				x	x					x

Program Learning Outcome:

(a) An ability to acquire and apply the foundation knowledge in terms of natural and social science to understand principles of construction management.

(b) An ability to understand basic principles of economy management, business management models, digital transformation in construction (BIM, AI), and utilize statistical tools and techniques for economic analysis.

(c) An ability to understand and utilize mathematical tools, problem-solving methods including technical and economic tasks and problems, and professional knowledge in construction management for managing and controlling variety aspects of construction projects.

(d) An ability to identify project objectives, scope and legal documents required as well as to be able to evaluate social-economic benefits of construction project investments; conduct literature research, collect and interpret data based on the methods of academic research.

(e) An ability to grasp, analyse and evaluate methods and processes in construction management to solve complex problems across time, cost and quality management as well as apply artificial intelligence and building information modelling to improve the project management performance.

(f) An ability to use tools and techniques required for identifying, analysising, and evaluating the problems as well as thinking independently, logically, and critically in seeking appropriate solutions; to work on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(g) An ability to communicate effectively with a range of audiences and actively work individually and as part of an international group as well as become accustomed to the responsibilities of leadership

(h) An ability to comprehensively use English language in construction management, express

themselves in a logical and convincing way both orally and in writing and communicate with their specialist colleague.

(i) An ability to recognize ethics and professional responsibility in civil engineering and construction management; and have suitable communication and interaction with people.

(j) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction		In-class exercise	Lecture, Discussion	
2	Linear Algebra		In-class exercise, Quiz 1	Lecture, Discussion	
3	Data analysis		In-class exercise and Midterm exam	Lecture, Discussion	
4-5	Machine learning – Unsupervised learning algorithms		In-class exercise, Quiz 1	Lecture, Discussion	
6-8	Machine learning – Unsupervised learning algorithms		In-class exercise and Midterm exam	Lecture, Discussion	
9-10	Midterm				
11-12	Neural network		In-class exercise and Final exam	Lecture, Discussion	
13	Machine learning Issues		In-class exercise and Final exam	Lecture, Discussion	
14-16	Cases studies		Presentation	Discussion/ Presentations	
17	ML in industry		In-class exercise	Discussion/ Presentations	
18-19	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/ Quiz (30%)	In-class exercises + Quiz1 50%Pass	In-class exercises 50%Pass	In-class exercises 50%Pass
Midterm exam (30%)	50% Pass	50% Pass	
Final exam (40%)		50% Pass	50% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023
Dean of School

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Computer Aided Design and Drafting

Course Code: **CE103IU**

1. General information

Course designation	This course introduces to the students a comprehensive overview of construction drawings basic. The course explains the use of lines, dimensions, specifications, symbols and standards, terminology and manufacturing process notes contained on a CAD drawing. The course also offers and expands into broader topic such as different construction drawing types and how blueprints and construction drawings are used to implement the construction process.
Semester(s) in which the course is taught	3, 4
Person responsible for the course	A/Prof. Phạm Ngọc
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, practice, group assignments/home works, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 152.5 Contact hours (lecture, laboratory session, etc.): 62.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/5.55 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Non</td></tr>
<tr><td>Course objectives</td><td>Students are able to prepare and read construction drawings; are equipped with up to date information to reflect the most recent developments in the construction industry, and to be able to interpret and deal with the technical information found in blueprint documents.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Recognize legal documents related to civil drawings.
CLO2. Present and illustrate professional 2D drawings.
CLO3. Describe and interpret blueprints, sections, elevations, site plans, architectural and structural plans, and more.</td></tr>
<tr><td>Skill</td><td>CLO4. Present skills in teamwork, communication, presentation, and drawing skills</td></tr>
<tr><td>Attitude</td><td>CLO5. Perform working activities in independently, actively and seriously</td></tr>
</table></td></tr>
</table>

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Introduction to graphics communications	1	I
Orthographic Projection	2	T,U
Dimensioning	2	T,U
Sectioning	2	T,U
Blueprints and Construction Drawings	3.5	T,U
The meaning of symbols	0.5	T,U
Understanding Schedules	0.5	T,U
Interpreting Specifications	0.5	T,U
Introduction to sustainable/green buildings	1	I, T

Examination forms	Written examination: Midterm and Final Exams
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	**Textbooks:** [1] Kirstie Plantenberg, *Engineering Graphic Essentials*, SDC Publications, Fourth Edition. [2] Sam A. A. Kubba, *Blueprint Reading: Construction Drawings for the Building Trades*, Mc Graw-Hill Higher Education, 2009 [3] Gary R Bertoline, *Introduction to Graphics Communication for Engineers*, Mc Graw-Hill Higher Education, Fourth Edition.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1		**x**									
2		**x**									

3		**x**									
4							**x**				**x**
5											

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to graphics communications: Introduction ; Traditional Drawing Tools; Computer Aided Drawing Tools	1		Lecture, Discussion,	[1] [3]
2-3	Orthographic Projection	1,2	Quiz 1 HW1	Lecture, Discussion, In-class Quiz	[1] [3]
4-5	Dimensioning	1,2	Quiz 2 HW2	Lecture, Discussion, In-class Quiz	[1] [3]
6-7	Sectioning	1,2	Quiz 3 HW3	Lecture, Discussion, In-class Quiz	[1] [3]
8	Group presentation and Review for exam	2,4,5	Group report 1	Presentation & discussion	
9	Midterm exam				
10-13	Blueprints and Construction Drawings The meaning of symbols	1, 3	Quiz 4 HW4	Lecture, Discussion, In-class Quiz	[2]
14	Understanding Schedules Interpreting Specifications	1,3	Quiz 5 HW5	Lecture, Discussion, In-class Quiz	[2]
15	Introduction to sustainable/green buildings	1,3	HW6	Lecture, Discussion In-class Quiz	[2]
16	Group presentation and Review for exam	2,4,5	Group report 2	Presentation & discussion	
17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
Class participation/In-class activities/quizzes (15%)	Qz(1-6) 50%Pass	Qz(1-3) 50%Pass	Qz(4-6) 50%Pass		
Homework exercises (10%)		HW(1-3) 60%Pass	HW(4-6) 60%Pass		HW(1-6) 60%Pass
Group report and presentation (5%)		Group report 80% pass	Group report 80% pass	Class presentation 80% pass	
Midterm exam (30%)	Q1-4 60%Pass	Q1-4 60%Pass			
Final exam (40%)	Q1-4 60%Pass		Q1-4 60%Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- No apply

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Practice CADD

Course Code: **CE104IU**

1. General information

Course designation	*The course provides to students the common skills to draw objects in 2D plane from Auto CAD software .*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Eng. Nguyen Dinh Hung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, homework, discussion
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (exercise, laboratory session, etc.): 37.5 The private study includes examination preparation, specified in hours[1]: 30
Credit points	**1 credit / 2.45 ECTS**
Required and recommended prerequisites for joining the course	Computer-Aided Design and Drafting (CADD)
Parallel course	Computer-Aided Design and Drafting (CADD)
Course objectives	This course is designed to give junior engineering students practical skills in using drawing commands, modifying commands, dimensioning commands, layer management with color and line style, printing management, and advances in auto lisp.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1. Be able to use Auto CAD software in 2D</td></tr>
<tr><td>Skills</td><td>CLO2. Draw any objects related to structures in civil engineering.
CLO3. Set printing objects with line thickness.</td></tr>
<tr><td>Attitude</td><td>CLO4. Be aware of drawing in the correct scale.</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><td>Topic</td><td>Weight</td><td>Level</td></tr>
<tr><td>Drawing commands and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Modifying commands and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Dimensioning commands and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Layer management with color and line style and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Printing management and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Advance in drawing with Auto lisp and practice</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Practice drawing steel structures</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Practice drawing reinforced concrete structures</td><td>1</td><td>I, T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Written examination: Drawing some objects on AutoCAD software</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have GPA of more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list and Media employed</td><td><u>Textbooks:</u>
[1] Help from AutoCAD software.
<u>Additional references:</u>
[3] IStructE/Concrete Society, Standard-Method-of-Concrete-Detailing, 3rd Edition, 2006.</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1				x							
2				x							
3				x							
4										x	

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1-2	- Drawing commands and practice	1, 4	Attendance and practice Q&A, Homework 1	Doing the lecture Practicing drawing some objects in the class	[1] [2]
3-4	- Modifying commands and practice	1, 4	Attendance and practice Q&A, Homework 2	Doing the lecture Practicing drawing some objects in the class	[1] [2]
5-6	- Dimensioning commands and practice	2, 4	Attendance and practice Q&A, Homework 3	Doing the lecture Practicing drawing some objects in the class	[1] [2]
7-8	- Layer management with color and line style and practice	2, 4	Attendance and practice Q&A, Homework 4	Doing the lecture Practicing drawing some objects in the class	[1] [2]
9-11	- Printing management and practice	3, 4	Attendance and practice Q&A, Homework 5	Doing the lecture Practicing drawing some objects in the class	[1] [2]
12-3	- Advance in drawing with Auto lisp and practice	3, 4	Attendance and practice Q&A, Homework 6	Doing the lecture Practicing drawing some objects in the class	[1] [2]
14	- Practice drawing steel structures	3, 4	Attendance and practice Q&A, Homework 7	Doing the lecture Practicing drawing some objects in the class	[1] [2]
15	- Practice drawing reinforced concrete structures	3, 4	Attendance and practice Q&A,	Doing the lecture Practicing drawing some objects in the class	[1] [2]
	Final examination		Practicing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 2 components, including: progress assessment and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4

1	Progress assessment (PA, 70%)				
1.1	Class attendance and practice in class (50% of PA)				Attended 80%Pass
1.2	Homework (50% of PA)	HW1-5, Submitted 80%Pass	HW1-5, Submitted 80%Pass	HW1-5, Submitted 80%Pass	HW1-5, Submitted 80%Pass
2	Final exam (Fin, 30%)	Q1 50%Pass	Q1 50%Pass	Q1 50%Pass	Q1 50%Pass

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Mechanics of Materials 1

Course Code: **CE201IU**

1. General information

Course designation	*Internal loading, axial force, shear, moment, and torque in structural members; stress, strain, and stress-strain relations; mechanical properties of material; strain energy; torsion of circular shafts; bending of singly symmetric beams.*
Semester(s) in which the course is taught	3,4
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 85 (Estimated) Contact hours: - Lecture: 19 - Discussion: 6 Private study including examination preparation, specified in hours: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the course	Calculus 2, Engineering Mechanics – Statics
Parallel course	None

<table>
<tr><td>Course objectives</td><td>The aim of this course is to
- develop an understanding of the relationship between loads (including Axial Loads and Torsion) applied to a deformable body and the internal stress, strains and deformation.
- develop an understanding of the relationship between loads (including Bending and Tranverse Shear) applied to a deformable body and the internal stress, strains and deformation.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1: Showing proficiency in the matematics and basic sciences riquired to solve structural engineering and mechanics problem.</td></tr>
<tr><td>Skills</td><td>CLO2: Demonstrating the ability to organize, approach, and solve engineering problems that are multi-step problems in which the solutions are not visible at the beginning of the process.</td></tr>
<tr><td>Attitude</td><td>CLO3: Work independently and professionally</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction</td><td>1</td><td>I</td></tr>
<tr><td>Stress and Strain</td><td>1</td><td>T,U</td></tr>
<tr><td>Mechanical Properties of Material</td><td>1</td><td>T, U</td></tr>
<tr><td>Axial Load</td><td>1</td><td>T, U</td></tr>
<tr><td>Torsion</td><td>1</td><td>T, U</td></tr>
<tr><td>Bending</td><td>1</td><td>T, U</td></tr>
<tr><td>Transverse Shear</td><td>1</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list and Media employed</td><td><u>Textbooks:</u>
[1] R.C. Hibbeler, Statics and Mechanics of Materials, SI edition, Prentice Hall, 2008.
<u>Additional references:</u>
[2] James M Gere, Berry J Goodno, Mechanics of Materials, Seventh Edition, Cengage Learning, 2009</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	1	2	3	4	5	6	7	8	9	10	11
1	x	x									
2		x		x							
3						x					

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	**Introduction**	1,2,3	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 1
2-3	**Stress and Strain**	1,2,3	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 2
4	**Mechanical Properties of Material**		Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 3
5-6	**Axial Load**		Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 4
7-8	**Torsion**	1,2,3	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 5
9-10	MIDTERM EXAMINATION		WRITING		
11-13	**Bending**	1,2,3	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 6
14-17	**Transverse Shear**	1,2,3	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 7
18-19	FINAL EXAMINATION		WRITING		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	**Progress Assessment (PA, 30%)**			
1.1	Class attendance (25% of PA)			Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)			Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-5, Submitted 80%Pass
2	**Midterm exam (Mid, 20%)**	Q1-4, 60%Pass	Q1-4, 60%Pass	
3	**Final exam (Fin, 50%)**	Q1-6, 60%Pass	Q1-6, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Mechanics of Materials 2

Course Code: **CE208IU**

1. General information

Course designation	*Combined loadings; stress and strains transformations, principal stresses and strains, stress,strain and stress-strain relationship; buckling of culums; design of beams and energy methods.*
Semester(s) in which the course is taught	4TH
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 85 (Estimated) Contact hours: - Lecture: 19 - Discussion: 6 Private study including examination preparation, specified in hours : 60
Credit points	2 credits/3.09 ECTS
Required and recommended prerequisites for joining the course	Mechanics of Materials 1
Parallel course	None
Course objectives	The aim of this course is to - An understanding of the relationship between loads (including Combined loadings) and a deformable using Stress and strain transformation - An understanding of the design of beam, Buckling of columns, and behaviour using Energy Method

Course learning outcomes	Upon the successful completion of this course students will be able to: **Categories** — **Course learning outcome (CLO)/ Competency** Knowledge — CLO1: Showing proficiency in the matematics and basic sciences riquired to solve structural engineering and mechanics problem. Skills — CLO2: Demonstrating the ability to organize, approach, and solve engineering problems that are multi-step problems in which the solutions are not visible at the beginning of the process. Attitude — CLO3: Work independently and professionally
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)
Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.
Reading list and Media employed	**Textbooks:** [1] R.C. Hibbeler, *Statics and Mechanics of Materials*, SI edition, Prentice Hall, 2008. **Additional references:** [2] James M Gere, Berry J Goodno, *Mechanics of Materials*, Seventh Edition, Cengage Learning, 2009

Topic	Weight	Level
Combined loadings	1	T,U
Stress and strain transformation	1	T, U
Design of beams	1	T, U
Buckling of columns	1	T, U
Energy Method	1	T, U

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x	x									
2		x		x							
3						x					

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources

1-5	**Combined loadings**	1,2,3	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 9
6-8	**Stress and strain transformation**	1,2,3	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 10
9-10	MIDTERM EXAMINATION		WRITING		
11-13	**Design of beams**	1,2,3	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 11
14-16	**Buckling of columns**	1,2,3	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 12
17	**Energy Method**		Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 13
18-19	FINAL EXAMINATION		WRITING		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	**Progress Assessment (PA, 30%)**			
1.1	Class attendance (25% of PA)			Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)			Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-5, Submitted 80%Pass
2	**Midterm exam (Mid, 20%)**	Q1-2, 60%Pass	Q1-2, 60%Pass	
3	**Final exam (Fin, 50%)**	Q3-5, 60%Pass	Q3-5, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. **Rubrics (optional)**
   - No

6. **Date revised: June 06, 2023**

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Mechanics of Materials Laboratory

Course Code: **CE202IU**

1. General information

Course designation	This course allows students to practice the basic mechanics of materials concepts discussed in the theory course - CE201IU Mechanics of Materials. It will also familiarize students with the different materials testing instruments. Basic mechanics of materials concepts: members subjected to tension, buckling, bending, torsion, indeterminate structures and stress-and-strain behaviors of materials.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Pre-laboratory discussions and demonstrations, laboratory experiments, writing of laboratory reports
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (laboratory exercises):37.5 Private study including laboratory reports preparation, specified in hours[1]: 30
Credit points	**1 credit/ 2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	CE101IU Engineering Mechanics - Statics
Parallel course	CE201 Mechanics of Materials 1
Course objectives	The objectives of this course is to equip the students with understanding of basic mechanics of materials concepts.
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	CLO1. perform basic testing procedures for mechanics of materials and use materials testing instruments;
Skill	CLO2. perform calculations from experimental data collected and prepare reports, and other related documents; and
Attitude	CLO3. work professionally in a team.

Content

The description of the contents should clearly indicate the weighting of the content and the level.
Weight: laboratory session (4 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
1. Introduction and Lab Orientation	1	I
2. Bending Stress in a Beam	1	T, U
3. Steel Bars under Pure Tensile Forces.	2	T, U
4. Torsion of Circular Sections	1	T, U
5. Buckling of Struts	1	T, U
6. Continuous and Indeterminate Beams	1	T, U
7. Final presentation	1	U

Examination forms	
Study and examination requirements	Students are expected to attend the practice every week. Students are divided into groups of 4-5 members. Each group performs the laboratory exercises and must prepare and submit a laboratory report one week after the laboratory exercise is done. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	[1] Experimental laboratory manuals Textbooks: [2] R.C. Hibbeler, Statics and Mechanics of Materials, SI edition, Prentice Hall, 2008.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	ILO										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1		X								X	
2		X								X	X
3					X						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction and lab orientation	1	Attendance	Discussions and demonstrations	[1]
2	Bending Stress in a Beam	1,2,3	Lab experiment 1, Lab Report L01	Pre-lab discussions and demonstrations	[1,2]
3 - 4	Steel Bars under Pure Tensile Forces.	1,2,3	Lab experiment 2, Lab Report L02	Pre-lab discussions and demonstrations	[1,2]
5	Torsion of Circular Sections	1,2,3	Lab experiment 3, Lab Report L03	Pre-lab discussions and demonstrations	[1,2]
6	Buckling of Struts	1,2,3	Lab experiment 4, Lab Report L04	Pre-lab discussions and demonstrations	[1,2]
7	Continuous and Indeterminate Beams	1,2,3	Lab experiment 5, Lab Report L05	Pre-lab discussions and demonstrations	[1,2]
8	Final presentation	3	Presentation	Reporting and Q&A	[2]

4. Assessment plan

- The final GPA of students is integrated from 2 components, including progress assessment, and final presentation. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3
1	**Progress Assessment (80%)**			
1.1	Attendance, Participation in lab experiments (50% of PA)	Lab Exer 1-5 100%Pass		Lab Exer 1-5 100%Pass
1.2	Laboratory reports (50% of PA)		L01-L05 60%Pass	L01-L05 60%Pass
2	**Final Requirement (20%)**			Presentation 60%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Fluid Mechanics

Course Code: **CE205IU**

1. General information

Course designation	Fluid mechanics is one of a principle subjects for civil engineers. Generally, fluid mechanics is the study of the mechanisms in which fluids, under all possible conditions (such as: gases and liquids) respond to forces, exert forces, and move from one place to another in physical view. This course will provide fundamental knowledge on physical properties of fluids and its characteristics as well. Moreover, students learn the laws and the governing equations representing different kinds of fluids at both static and motion state interacting to structures; and know how to solve these equations or compute physical parameters in practical meaning. In addition, the practices to measure fluid properties are introduced in this course. Therefore, fluid mechanics is involved in nearly all areas of civil Engineering either directly or indirectly. Some examples of direct involvement are those where we are concerned with manipulating the fluid, including: sea and river (flood) defenses, water distribution/sewerage (sanitation) networks, dams, irrigation, pumps and turbines, water retaining structures, and so on; and some examples where the primary object is construction - yet analysis of the fluid mechanics is essential, such as: flow of air in / around buildings; bridge piers in rivers; Ground-water flow, and so forth.
Semester(s) in which the course is taught	5, 6
Person responsible for the course	A/Prof. Phạm Ngọc
Language	English
Relation to curriculum	Compulsory

<table>
<tr><td>Teaching methods</td><td>Lecture, lesson, homework, discussion</td></tr>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>(Estimated) Total workload: 85
Contact hours (lecture, exercise, laboratory session, etc.): 25
Private study including examination preparation, specified in hours[1]: 60</td></tr>
<tr><td>Credit points</td><td>2 credits/3.09 ECTS</td></tr>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Calculus and physics</td></tr>
<tr><td>Parallel course</td><td>Fluid Mechanics Laboratory</td></tr>
<tr><td>Course objectives</td><td>- Introduce the concepts of fluid mechanics, which are more applicable for civil engineers;
- Demonstrate how these concepts are used for solving some common problems in field of civil engineering</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1. Calculate fundamental parameters of fluids
CLO2. Apply the principles of fluid static to analyze and estimate the hydrostatic pressure and force exerted on submerged surfaces or floating subjects.
CLO3. Apply the fundamental of fluid dynamic to solve some problems in field of civil engineering</td></tr>
<tr><td>Skills</td><td>CLO4. Think and work independently and professionally, solve problems</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (2 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Fluid Static</td><td>4</td><td>I, T, U</td></tr>
<tr><td>The flow of an ideal fluids</td><td>2</td><td>I, T, U</td></tr>
<tr><td>The flow of a real fluids</td><td>1</td><td>I, T, U</td></tr>
<tr><td>The flow in pipes</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Fluid measurement</td><td>1</td><td>I, T</td></tr>
<tr><td>Flow about immersed objects</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Group assignment presentation</td><td>1</td><td>I, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Written examination: Mid-term and Final examinations</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.

</td></tr>
</table>

Reading list and Media employed	**Textbooks:** [1] Bruce R. Munson, Donald F. Young, Theodore H.Okiishi, Fundamentals of fluid mechanics, John Wiley & Sons Inc. 2006. [2]. Donald F. Elger, Barbara C. Williams, Clayton T. Crowe, John A. Roberson. Engineering of Fluid Mechanics (10 Edition). Wiley. 2014 **Additional references:** [3] Bar Meir, Genick, Basic of fluid mechanics, www.potto.org [4] Nakayama, Y., Boucher, R.F.. Introduction to fluid mechanics, Butterworth-Heinemann. 2000. [5] John K. Vennard. Elementary fluid mechanics, John Wiley & Sons Inc. 1940

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x										X
2	x	x									X
3	x	x									X
4					x						

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	**Introduction:** about the course; physical properties and important characteristics of fluids.	1,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
2-3	**Fluid Statics:** Definition of pressure; Physical laws and basic equations for analyzing and determining pressure of a point in rest fluids; Methods to measure pressure.	2,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
4-5	**Fluid Statics:** Hydrostatic force acting on the submerged surface; Buoyancy phenomena and buoyant force; Stability of	2,4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]

	floating body; Rigid-body rotation.				
6-7	**The flow of an ideal fluids:** Introduction**;** Bernoulli's Equation**;** Continuity equation**;** Flow rate measurement**;** Energy line and the hydraulic grade line.	3,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] [2]
8	**The flow of a real fluids:** Laminar and Turbulent flow; Fluid flow past solid boundaries; Fluid flow between parallel plates.	3,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
9	Midterm examination		Writing		
10-11	**Fluid flow in pipes:** Energy relationships; General mechanics of fluid flow in pipes; Friction and head losses in the pipes	3,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
12	**Fluid measurements**	3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
13-14	**Flow about immersed objects** Fundamentals and definitions; Drag problems; Lift problems	3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] [2]
15	Final examination		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of score is from 0 to 100.
- The final GPA of students is integrated from 3 components, including: progress assessment, mid-term exam and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4

1	***Progress assessment (30%)***				
1.1	Class attendance (10%)				Attended 80%Pass
1.2	In class activity: Discussion and doing Quiz in class (5%)				Participated in class Q&A 60%Pass
1.3	Home works (15% of PA)				HW1-4, Submitted 80%Pass
2	***Midterm exam (Mid, 30%)***	Q1-2, 60%Pass	Q3-4 60%Pass		
3	***Final exam (Fin, 40%)***		Q1 70%Pass	Q3-5 70%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Fluid Mechanic Laboratory

Course Code: **CE206IU**

1. General information

Course designation	This course is primarily used as an undergraduate teaching lab. The experimental exercises will be provided to student for demonstrating the theory given in class lectures. These experiments are designed to examine some properties of fluids and to conduct experiments involving principle phenomena of incompressible (water) flow, such as: flow over the weir, head losses of flow in pipe
Semester(s) in which the course is taught	5,6
Person responsible for the course	A/Prof. Phạm Ngọc
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, practice, group homework, seminar
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (laboratory session, etc.): 37.5 hours in Lab Private study including examination preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td></td></tr>
<tr><td>Parallel course</td><td>Fluid Mechanics</td></tr>
<tr><td>Course objectives</td><td>- To provide practical skills to determine some properties of fluids and conduct some experiments in Lab.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Describe and explain the mechanism of some basic flow phenomena
CLO2. Demonstrate five fundamental experiments, including: Discharge over a notch; Reynolds number and transitional flow; Flow measurement apparatus; Jet trajectory and flow through an orifice; Fluid friction apparatus.
CLO3. Analyze the experiment data</td></tr>
<tr><td>Skill</td><td>CLO4. Present skills of teamwork, communication, reporting and presentation.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (4 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Introduction	1	I, T
Discharge Over a Notch	1	T, U
Reynolds Number and Transitional Flow	1	T, U
Flow Measurement Apparatus	1	T, U
Jet Trajectory and Flow Through an Orifice	1	T, U
Fluid Friction Apparatus	1	T, U

Examination forms	Report
Study and examination requirements	Attendance: attendance of 100 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	**Textbooks:** [1] Bruce R. Munson, Donald F. Young, Theodore H.Okiishi, Fundamentals of fluid mechanics, John Wiley & Sons Inc. 2006. [2]. Donald F. Elger, Barbara C. Williams, Clayton T. Crowe, John A. Roberson. Engineering of Fluid Mechanics (10 Edition). Wiley. 2014

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1		**x**					x				x
2		x					x				x
3						x	x				x
4							x				x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to the course, rules working in Lab, and using of equipment.	1		Lecture, practice	[1] [2]
2	Discharge Over a Notch	2,3, 4,5	Group report 1	Lecture, practice	[1] [2]
3	Reynolds Number and Transitional Flow	2,3, 4,5	Group report 2	Lecture, practice	[1] [2]
4	Flow Measurement Apparatus	2,3, 4,5	Group report 3	Lecture, practice	[1] [2]
5	Jet Trajectory and Flow Through an Orifice	2,3, 4,5	Group report 4	Lecture, practice	[1] [2]
6	Fluid Friction Apparatus	2,3, 4,5	Group report 5	Lecture, practice	[1] [2]
7	Make up class				
8	Group presentation and evaluation		Oral examination	Presentation and Discussion	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Class participation/In-class activities (10%)				Checklist and observe 80%Pass
Group reports (80%)	Group HW (1-5) 80%Pass	Group HW (1-5) 80%Pass	Group HW (1-5) 80%Pass	
Oral presentation (10%)	A&Q 80%pass	A&Q 80%pass	A&Q 80%pass	A&Q 80%pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- No

6. **Date revised: June 06, 2023**

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Hydrology Hydraulics

Course Code: **CE211IU**

1. General information

Course designation	This course provides students basic knowledge on hydrology and hydraulics, the fundamentals of water engineering, an important field in civil engineering. In the hydrology part of this course, the students will have a deeper understanding of the physical processes of the hydrological cycle, including an understanding of how human intervention through changes made in the environment can affect the hydrological characteristics of a catchment. The students will also learn a computer software to model the hydrology of a catchment. In the hydraulics part, the students will apply the basic principles learned from their basic fluid mechanics course in the analysis and design of open channels and other hydraulic structures. This course helps students understand basic engineering principles and enhance their analytic and problem-solving skills to address real life engineering problems. It has practical applications in the fields of water supply, hydropower, flood mitigation, and other related fields.
Semester(s) in which the course is taught	1,2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Core Major (compulsory)
Teaching methods	Lecture, class discussion, computational quizzes, computer exercises, homeworks

<table>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>(Estimated) Total workload: 127.5
Contact hours (lecture, class discussion, computation exercises, computer exercise):37.5
Private study including examination preparation, specified in hours[1]: 90</td></tr>
<tr><td>Credit points</td><td>3 credits/4.64 ECTS</td></tr>
<tr><td>Required and recommended prerequisites for joining the course</td><td>CE205IU Fluid Mechanics</td></tr>
<tr><td>Course objectives</td><td>This course aims to:
- provide students an understanding of the physical processes of the hydrological cycle;
- equip the students with computational skills involved in quantifying the physical processes of the hydrological cycle;
- fundamental knowledge in hydraulics of open channels; and
- equip the students with skills in analyzing and designing open channels.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. discuss the different physical processes of the hydrological cycle and how they are measured and estimated;</td></tr>
<tr><td>Skill</td><td>CLO2. analyze, interpret, process, and present hydrological data;
CLO3. construct a hydrological model;
CLO4. analyze and design open channels; and</td></tr>
<tr><td>Attitude</td><td>CLO5. work professionally whether independently or in a team.</td></tr>
</table></td></tr>
</table>

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
1. Introduction to Hydrology	1	I
2. Hydrologic Cycle and Water Balance	1	T, U
3. Hydrological Parameters and Presentation of Hydrological data	1	I, T, U
4. Precipitation	1	T, U
5. Evaporation	1	T, U
6. Infiltration	1	T, U
7. Runoff and Streamflow Analysis	1	T, U
8. Hydrological Modelling	1	I, T, U
9. Introduction to Open Channels	1	I
10. Uniform Flow Calculations	1	I, T, U
11. Design of Erodible and Non-erodible Channels	1	I, T, U
12. Critical Flow	1	I, T, U
13. Hydraulic Jump	1	I, T, U
14. Non-uniform Flow Calculations	1	I, T, U
15. Flow Profiles	1	I, T

Examination forms	Written examinations: Midterm and Final Exams Type: Constructed response test
Study and examination requirements	**Attendance:** Students are expected to attend the lectures every week. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. **Computation exercises, quizzes (written or oral), and homeworks:** are given regularly, whether individually or done by group, for the students to understand the concepts better and to improve their problem-solving skills. **Examinations:** A midterm exam will be given halfway through the semester and a final exam at the end. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	[1] Viessman, W. and Lewis, G. (2003). Introduction to Hydrology 5th Ed. New Jersey: Prentice Hall. [2] Mays, L. (2004). Water Resources Engineering (Chapter 5 and Chapter 7). Asia: John Wiley and Sons. [3] Bedient, P. and Huber, W. (1992). Hydrology and Floodplain Analysis 2nd ed. USA: Addison-Wesley. [4] Chanson H. (2004). The Hydraulics of Open Channel Flow: An Introduction, 2nd Ed. Elsevier.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	ILO										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	X										X
2											
3										X	
4		X								X	
5					X						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Hydrology	1, 2	Attendance, Q&A	Lecture, class discussion, self-study	[1], [2], [3]
2	Hydrologic Cycle and Water Balance	1, 2	Attendance, Q&A, Quiz1	Lecture, class discussion, self-study	[1], [2], [3]
3	Hydrological Parameters and Presentation of Hydrological data	1, 2	Attendance, Q&A, Group exercise 1	Lecture, class discussion, group work, self-study	[1], [2], [3]
4	Precipitation	1, 2	Attendance, Q&A, Group exercise 2	Lecture, class discussion, self-study	[1], [2], [3]
5	Evaporation	1, 2	Attendance, Q&A, HW1	Lecture, class discussion, self-study	[1], [2], [3]
6	Infiltration	1, 2	Attendance, Q&A, HW1	Lecture, class discussion, self-study	[1], [2], [3]
7	Runoff and Streamflow Analysis	1, 2	Attendance, Q&A, HW1	Lecture, class discussion, self-study	[1], [2], [3]
8	Hydrological Modelling	3,	Attendance, Q&A, HW2	Lecture, computer exercise, self-study	[1], [2], [3]
9 - 10	Midterm				
11	Introduction to Open Channels	4	Attendance, Q&A,	Lecture, class discussion, self-study	[2], [4]
12	Uniform Flow Calculations	4	Attendance Q&A, Group exercise3	Lecture, class discussion, self-study	[2], [4]
13	Design of Erodible and Non-erodible Channels	4	Attendance, Q&A, HW3	Lecture, class discussion, self-study	[2], [4]
14	Critical Flow	4	Attendance, Q&A, HW4	Lecture, class discussion, self-study	[2], [4]
15	Hydraulic Jump	4	Attendance, Q&A, HW4	Lecture, class discussion, self-study	[2], [4]
16	Non-uniform Flow Calculations	4	Attendance, Q&A, Quiz2	Lecture, class discussion, self-study	[2], [4]
17	Flow Profiles	4	Attendance, Q&A	Lecture, class discussion, self-study	[2], [4]
18	Review				
19-20	Final exam				

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
1	**Progress Assessment (30%)**					
1.1	Class Attendance (30% of PA)					Attended 80%Pass
1.2	In-class activities: Participation in discussion, quizzes; Other activities: homeworks, group exercise (70% of PA)	HW1, Qz1, GE1-2 60%Pass	HW1, Qz1, GE1-2 60%Pass	HW2 60%Pass	HW3-4, Qz2, GE3 60%Pass	
2	**Midterm Exam (30%)**	P1 60%Pass	P2. Q1-Q4 60%Pass			
3	**Final Exam (40%)**				Q1-4 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Water Supply & Sewerage

Course Code: **CE306IU**

1. General information

Course designation	The rapid rise in population and industrialization place an enormous challenge on the environment and the resources. This has resulted to an increase in demand for water supply and sewerage services. In this course the students will learn the basic structure of a community water supply as well as that of sewerage systems. They will learn and practice the computations and decision-making involved in the planning and design of these systems. Furthermore, they will be taught some computer softwares to model a simple water disctribution system and a stormwater sewer system. This course helps students understand basic engineering principles and enhance their analytic and problem-solving skills to address real life engineering problems.
Semester(s) in which the course is taught	1,2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Specialisation (compulsory)
Teaching methods	Lecture, class discussion, computational quizzes, computer exercises, homeworks, group reports
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload:127.5 Contact hours (lecture, class discussion, computation exercise, computer exercise):37.5 Private study including examination preparation, specified in hours[1]: 90

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	CE211IU Hydrology - Hydraulics
Course objectives	This course aims to: - provide the students the fundamentals of drinking water supply systems from the extraction of raw water from its sources to the distribution of treated water; - provide the fundamentals of sewerage systems, from learning the sources and impacts of wastewater to the different types of sewers and wastewater collection systems; - equip the students with knowledge involving the design of a simple water distribution system; and - equip the students with knowledge involving the design of sanitary sewers and stormwater sewers
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	CLO1. discuss in detail the components of water supply systems and of sewerage systems;
Skill	CLO2. perform the computations and decision-making involved in the design of community water supply system and in the design of sanitary and stormwater sewers; CLO3. construct a simple water distribution model using EPANET and a simple drainage system using SWMM; and
Attitude	CLO4. work professionally whether independently or in a team.

Content

The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
1. Introduction to Community Water Supply Systems (CWSS)	1	I, T
2. Water Consumption and Water Demand	1	I, T, U
3. Elements of CWSS	3	I, T, U
4. Pipe Flow Hydraulics	2	T, U
5. Water Distribution Network Modelling using EPANET	1	I, T, U
6. Wastewater	1	I, T
7. Sewers and Sewer Systems	2	I, T
8. Sanitary Sewer Design	1	I, T, U
9. Storm Sewer Design	1	I, T, U
10. Introduction to EPA SWMM	1	I, T, U
11. Sustainable Urban Drainage Systems	1	I

Examination forms

Written examinations: Midterm and Final Exams

Type: Constructed response test

Study and examination requirements	**Attendance:** Students are expected to attend the lectures every week. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. **Computation exercises, quizzes (written or oral), homeworks, and reports:** are given regularly, whether individually or done by group, for the students to understand the concepts better and to improve their problem-solving skills. **Examinations:** A midterm exam will be given halfway through the semester and a final exam at the end. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	**Main Reference:** [1] Terence J. McGhee (1991). Water Supply and Sewerage, 6th ed. McGraw-Hill, Inc. **Other References:** [2] Jerry A. Nathanson (2008). Basic Environmental Technology: Water Supply, Waste Management and Pollution Control, 5th ed. Prentice Hall. [3] Larry Mays (2001). Stormwater Collection Systems Design Handbook. McGraw-Hill, Inc. [4] Walski T. M. et al. Water distribution modeling. Haestad Press, 2001. **Local Codes:** [5] TCXDVN 33: 2006. Water Supply – Distribution System and Facilities Design Standard [6] TCXDVN 51: 2008. Drainage and Sewerage - External Networks and Facilities. Design Standard

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	**ILO**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1						**X**					**X**
2										**X**	
3										**X**	
4					**X**						

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Introduction to Community Water Supply Systems (CWSS)	1,4	Attendance Q&A Homework1	Lecture, class discussion, self-study	[1], [2]
2	Water Consumption and Water Demand	1,2,4	Attendance Q&A Report 1	Lecture, class discussion, self-study, group work	[1], [2], [5]
3-5	Elements of CWSS	1,2	Attendance Q&A	Lecture, class discussion, self-study	[1], [2], [4]

			Quiz 1		
6	Pipe Flow Hydraulics	2,4	Attendance Q&A Homework 2	Lecture, class discussion, self-study	[1]
7-8	Water Distribution Network Modelling using EPANET	3,4	Attendance Q&A Homework 3	Lecture, computer exercise, self-study	[4], [5]
9-10	Midterm				
11	Wastewater	1	Attendance Q&A	Lecture, class discussion, self-study	[1], [2], [3]
12-13	Sewers and Sewer Systems	1	Attendance Q&A Quiz 2	Lecture, class discussion, self-study	[1], [2], [3]
14	Sanitary Sewer Design	1,2,4	Attendance Q&A Quiz 3	Lecture, class discussion, self-study	[1], [2]
15	Storm Sewer Design	1,2	Attendance Q&A Report 2	Lecture, class discussion, self-study	[1], [2], [3]
16	Introduction to EPA SWMM	3,4	Homework 4	Lecture, class discussion, self-study	[6]
17	Sustainable Urban Drainage Systems	1,4	Attendance Q&A	Lecture, class discussion, self-study	[3]
18	Review				
19-20	Final exam				

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3	CLO4
1	**Progress Assessment (30%)**				
1.1	Class Attendance (30% of PA)				Attended 80%Pass
1.2	In-class activities: Participation in discussion, quizzes; Other activities: homeworks, group reports (70% of PA)		Qz1-3, HW1-2, 60%Pass	HW3-4 60%Pass	Reports 1-2 60%Pass
2	**Midterm Exam (30%)**	P1 60%Pass	P2. Q1-Q4 60%Pass		
3	**Final Exam (40%)**		Q1-4 60%Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Construction Materials

Course Code: **CE210IU**

1. General information

Course designation	*The course will introduce both conventional and modern construction materials that are commonly used in civil engineering construction. These are concrete, steel, asphalt concrete and other construction materials such as brick, mortar, grout, wood, fibers and so on. Properties of materials will be taught and discussed. Students will find out what properties are the advantages and disadvantages of materials. Therefore, material applications and detailing in structural and non-structural building components are explored. Construction materials should be harmonized to the environmental sustainability, resource durability, capitalizing on using local materials and less fee to strengthen and retrofit, using local materials also satisfy culture, economic and social justice. Resulting from this course, students will gain a comparative knowledge of material properties and possible applications in construction.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Eng. Nguyen Dinh Hung
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, homework, discussion
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 The private study includes examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	Mechanics of Materials 1
Parallel course	
Course objectives	The course provides students with basic definitions, the physical, chemical and mechanical properties of various construction materials that are commonly used in civil engineering construction. Students are guided to be able to appreciate the criteria for choosing the appropriate materials and indigenous resources, and various tests to control the quality of these materials in applying for stability, durability, and saving of resources, and development of practices. The course raises awareness of using suitable materials based on their properties to protect a sustainable environment, economy, and cultural awareness towards the social and societal calls.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	**Course learning outcome (CLO)/ Competency**
Knowledge	CLO1. Understand basic definitions, and physical, chemical, and mechanical properties of various construction materials for civil engineering. Students are explained, find themselves, or discuss the definition of each topic or property to clarify CLO2. Classify types of construction material based on their advantages and disadvantages properties for civil engineering that are affected the quality of structures and the environment. Understanding the meaning of each property and how to apply in fact with sustainability.
Skills	CLO3. Evaluate the suitable quality of construction materials with sustainable criteria and determine properties of materials by equipment CLO4. Design some mix proportions of some composite construction materials using local materials, industrial waste (fly ash, silica fume, Fluid catalytic cracking), and recycled materials such as types of Portland concrete, types of asphalt concrete, mortar, grout, composite materials with fibers and so on. CLO5. Able to use social network technology to find material and its properties, and its application in civil engineering.
Attitude	CLO6. Be aware of choosing construction materials for suitable purposes and economics in civil engineering. Construction materials cause problems for the environment. So, we have to consider choosing suitable materials to minimize the bad effects on the environment.

<table>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><td>Topic</td><td>Weight</td><td>Level</td></tr>
<tr><td>Introduction to construction materials</td><td>1</td><td>I, T</td></tr>
<tr><td>Types and properties of Aggregate, Sand, water</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Types and properties of cement, hydraulic action</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Admixtures</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Properties of fresh concrete</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Properties of harden concrete</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Mix proportion of normal concrete</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Lightweight concrete</td><td rowspan="3">1</td><td rowspan="3">I, T, U</td></tr>
<tr><td>Heavyweight concrete</td></tr>
<tr><td>High-performance concrete</td></tr>
<tr><td>Steel</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Asphalt concrete</td><td>3</td><td>I, T, U</td></tr>
<tr><td>Other materials</td><td>2</td><td>I, T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Written examination: Mid-term and Final examinations</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have GPA of more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list and Media employed</td><td><u>Textbooks:</u>
[1] Michael S. Mamlouk and John P. Zaniewski, Materials for Civil and Construction Engineers, Prentice Hall, 2005.
[2]. Steven H. Kosmatka, Beatrix Kerkhoff, and William C. Panarese, Design and Control of Concrete Mixtures, 14th Ed., Portland Cement Association, 2008.
<u>Additional references:</u>
[3] Neil Jackson and Ravindra K. Dhir, Civil engineering materials, 4th Ed, Palgrave Macmillan, 1996.
[4] Phùng Văn Lự và các tác giả, Giáo trình vật liệu xây dựng, NXB Giáo dục, 2000.
[5] Phạm Duy Hữu, Ngô Xuân Quảng và Mai Đình Lộc, Giáo trình Vật liệu xây dựng, NXB Giao Thông Vận Tải</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1		x									
2		x									
3										x	
4								x			
5		x									
6				x							

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	**Chapter 1: Concrete** - Introduction about concrete and ingredients - Types and properties of Aggregate, Sand, water	1,4	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1]
2-3	- Types and properties of Aggregate, Sand, water	2,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1]
4	- Types and properties of cement, hydraulic action	2,4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 1 in class	[1] [2]
5	- Types and properties of admixture - Properties of fresh concrete: How to mix concrete, introduce its properties and how to determine Slump – Flow and compaction – Air content;	3,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 2 in class,	[1]
6	- Properties of hardened concrete: Unit mass, Porous coefficient, Permeability coefficient, Introduce and how to determine Compressive, Tensile and Shear strength, Young's Modulus, Modulus of rupture, Secant Modulus, creep and shrinkage, … mixture proportion	3,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 3 in class	[1]
7	- Introduction about lightweight concrete, Applying area - Properties of lightweight concrete	1,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 3 in class	[2]
8	- Introduction about high-strength concrete - How many types of high-strength concrete? - Properties of types of high-strength concrete and mix proportion	1,4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 3 in class	[1] [2]
	Midterm examination		Writing		
9	**Chapter 2 Steel structures** - Introduction steel for construction	3,4	Attendance Q&A Homework 7	Reading materials before class;	[1]

	- Ingredients of steel for construction (Carbon, SiO2, Fe, …) - Heat treatment of steel - Steel productions: Cast iron, Alloy, normal steel and prestressed steel - Properties and geometry of steel (Grade and standards: shape, diameter, yield strength, ultimate strength, Elastic Modulus, …)			Doing the lecture; Discussion;	
10	**Chapter 3: Asphalt concrete** - Introduction about asphalt concrete, type of asphalt concrete - Ingredients (Aggregate + Sand + Bitumen + Limestone + admixture (if there is)): Introduce about types of ingredients and how to determine its properties,	3,4	Attendance Q&A Homework 8	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 4 in class	[1]
11	- Properties of fresh asphalt concrete: How to mix asphalt concrete, introduce its properties (…) and how to determine properties (…),	3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 5 in class	[1]
12	- Properties of hardened asphalt concrete: Introduce and how to determine Compressive, Tensile and Shear strength, Young's Modulus, Modulus of rupture, … - Determine mix proportion (based on some codes for road of Vietnam and in the world)	2,4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 5 in class	[1]
13	**Chapter 4: Other materials** - Introduction about Brick - Introduction about Wood - Introduction about Mortar and Grout	1,4	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1]
14	- Introduction about Fiber textile - Introduction about Composite materials - Fiber glass reinforced plate - Carbon fiber reinforced plate			Reading materials before class; Doing the lecture; Discussion; and doing Quiz 6 in class	[1]
15	Final examination		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including: progress assessment, mid-term exam and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
1	Progress assessment (PA, 30%)						
1.1	Class attendance (50% of PA)						Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)						Participated In-class Q&A 60%Pass
1.3	Homework (25% of PA)					HW1-6, Submitted 80%Pass	
2	Midterm exam (Mid, 30%)	Q1, 50%Pass	Q1,2,4 50%Pass	Q2, 50%Pass	Q3 50%Pass	Q4 50%Pass	Q1,2,3,4 50%Pass
3	Final exam (Fin, 40%)	Q1 50%Pass	Q1,2,3 50%Pass	Q2,3 50%Pass	Q4, 50%Pass	Q4 50%Pass	Q1,2,3,4 70%Pass

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** Department of Civil Engineering

COURSE SYLLABUS

Course Name: Civil Architecture

Course Code: CE214IU

1. General information

Module designation	**CE212IU – Civil Architecture** The course provides students with a concise source of core information needed to form a framework for a detailed planning of any building project. The information includes the principles of the design process, basic information on sitting, servicing and construction buildings, as well as illustrations and descriptions of a wide range of building types. Students work in teams, exploring hands-on activities to learn the characteristics of civil architecture
Semester(s) in which the module is taught	2
Person responsible for the module	Dr. Nguyen Van Tiep
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, exercise, laboratory session, etc.): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**
Required and recommended prerequisites for joining the module	N/A
Course objectives	**Overall objectives** are to equip CE students with fundamentals of civil architecture and an essential knowledge and reference for the design and

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	planning of a building project. Students who complete the course will be able to perform the following tasks: (1) identifying and solving engineering and management problems through applying principles of engineering, science, and mathematics (2) carrying out construction project feasibility study and that ensure the feasibility with the consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors (3) recognizing ethical and professional responsibilities in engineering situations; and being able to make judgments with the consideration to the impact of engineering and management solutions in the different contexts regarding global, economic, environmental, and social aspects (4) establishing an effective team that enhance members work together to establish goals, specific objectives and actional plans (5) developing and conducting appropriate construction management research including: collect the data, analyze and use engineering judgments to draw important conclusions (6) acquiring and applying new knowledge as needed, as well as using appropriate learning strategies.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	CLO1: Have basic understanding of civil architecture CLO2: Have essential knowledge for design and planning of a building project.
Skill	CLO3: Conduct basic calculations which are required for architecture design appraisal CLO4: Be able to make judgements based on ethical codes and professional responsibilities in specific engineering situations
Attitude	CL05: Be active and able to communicate with peers to plan and execute a team project

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level

	1. A History of Civil Engineering and Architecture	1	I
	2. Residential architecture styles	2	I, T
	3. Principles and Elements of Design Applied to Architecture	1	I, T
	4. Principles of architectural compositions	2	I, T, U
	5. Building Components	1	I, T
	6. Green building and Green construction	1	I, T
	7. Principles of landscape design	1	I, T
	8. Sustainable design for small landscapes	1	I, T
	9. Passive design and passive house	1	I, T
	10. Overview of Building Information Modeling (BIM)	1	I, T
	11. Introduction to Interior Design	1	I, T
Examination forms	Constructed-response test		
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.		
Reading list	[1] Ernst Neufert & Peter Neufert (2000). Ernst & Peter Neufert Architect's Data, Edited by Bousmaha Baiche and Nicholas Walliman, 3rd Edition, Backwell Science [2] Francis D.K. Ching (2014), Building Construction Illustrated, 5th Ed., John Wiley & Sons, Inc., Hoboken, New Jersey [3] Francis D.K. Ching, Steven P. Juroszek (2019) Design Drawing, 3rd Edition Wiley [4] Francis D.K. Ching (2003), Architectural graphics, 4th Ed., John Wiley &Sons, Inc., New York. [5] Francis D.K. Ching (1995), A visual dictionary of architecture, John Wiley &Sons, Inc., New York.		

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-5) and Program Intended Learning Outcomes (a-k) is shown in the following table:

	Program Intended Learning Outcomes (ILO)										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x										
2	x							x			
3		x								x	
4											
5					e		x				x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	A History of Civil Engineering and Architecture	1	Assignment 1	Lecture, Discussion	Research Collection
3-4	Residential architecture styles	1	HW1	Lecture, HW Guide	[1]
5	Principles and Elements of Design Applied to Architecture	1,2	HW2	Lecture, HW Guide	[4,5]
6	Principles of architectural compositions	1, 2	Assignment 2	Lecture, Discussion	[4,5]
7-8	Building components	1,2	Assignment 3	Lecture, Discussion	[4,5]
9	**Midterm**				
10	Green building and Green construction	1,2,3	Group Assignment	Lecture, Discussion	[2]
11	Student presentation	2,3	Discussion	Group Presentation	Lecture Guide
12	Principles of landscape design	1,2	Group Assignment	Lecture, Discussion	[1,3,4,5]
13	Sustainable design for small landscapes	1,2	HW3	Lecture, HW Guide	[1,3,4,5]
14	Passive design and passive house	1,2,3	Group Assignment	Lecture, Discussion	[1,3,4,5]
15	Overview of Building Information Modeling (BIM)	1,2	Assignment 4	Lecture, Discussion	[2]

16	Introduction to Interior Design	1,2	HW4	Lecture, HW Guide	[1,3,4,5]
17	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Individual Assignments (15%)	Ass1 50%Pass	Ass2,3,4 50%Pass	
Homework exercises/ Presentation (15%)	HW1 50%Pass	HW2, HW3,HW4 50% Pass	Presentation 60% Pass
Midterm exam (20%)	Q1 50%Pass	Q2,3 50%Pass	
Final exam (50%)	Q1 50%Pass	Q 2,3 50%Pass	

Note: %Pass: % students have scores greater than 50 out of 100.

5. Rubrics (optional)

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Surveying

Course Code: **CE307IU**

1. General information

Course designation	This course covers the basics of surveying. It includes the principles of measurements of distances, elevations, and angles. The students will become familiar with all surveying instruments as well as learn about the different types of surveying including how they are carried out, the data to collect, and how to analyze, interpret, and process the data. It also includes basic error theory in measurement and calculations, and basic principles of map making.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Specialization (compulsory)
Teaching methods	Lecture, class discussion, computation exercises
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 85 Contact hours (lecture, class discussion, computation exercise): 25 Private study including examination preparation, specified in hours[1]: 60
Credit points	**2 credits/3.09 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	
Parallel course	CE308IU Surveying Practice
Course objectives	This course aims to: - introduce students to the different techniques of data collection, layout, and presentation of field data; - make students understand all the tasks involved in a various surveying operations in order that they might have the confidence to undertake such tasks in a professional capacity; and - make students understand and perform the calculations and plottings involved in surveying.
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	CLO1. discuss the different types of surveys; CLO2. describe the different surveying tools and instruments used for different types of surveys including their evolution through time;
Skill	CLO3. perform calculations in surveying including distances, elevations, directions, coordinates, and areas; CLO4. read, interpret, as well as prepare maps, plots, reports involved in surveying; and
Attitude	CLO5. work professionally whether independently or in a team.

Content

The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
1. Introduction to Surveying	0.5	I
2. Reference Systems	0.5	I, T
3. Errors in Measurement	1	I, T, U
4. Horizontal Distance Measurement	2	I, T, U
5. Levelling	3	I, T, U
6. Control Surveys	3	I, T, U
7. Topographic Surveys	2	I, T, U
8. Setting out	1	I, T
9. GPS and GIS	2	I

Examination forms

Written examinations: Midterm and Final Exams

Type: Constructed response test

Study and examination requirements	**Attendance:** Students are expected to attend the lectures every week. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. **Computation exercises, quizzes (written or oral), and homeworks:** are given regularly, whether individually or done by group, for the students to understand the concepts better and to improve their problem-solving skills. **Examinations:** A midterm exam will be given halfway through the semester and a final exam at the end. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	Main Reference [1] Charles D. Ghilani – Paul R. Wolf. , *Elementary Surveying – An introduction to Geomatics*, 13*th*, edition, Prentice Hall, 2012. Other References [2] Lillesand, Kiefer, *Remote sensing and image interpretation*, John Wiley & Sons,1994. [3] Paul A. Longley, Michael F. Goodchild, David J. Mauire, David W. Rhind, *Geographic Information Systems and Science*, John Wiley & Sons, 2005.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	**ILO**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1		**X**									**X**
2										**X**	
3		**X**								**X**	
4										**X**	
5					**X**						

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Introduction to Surveying	1, 2	Attendance, Q&A	Lecture, class discussion, self-study	[1]
2	Reference Systems	4	Attendance, Q&A	Lecture, class discussion, self-study	[1]
3	Errors in Measurement	3	Attendance, Q&A, Quiz 1	Lecture, class discussion, self-study	[1]
4-6	Horizontal Distance Measurement	2, 3	Attendance, Q&A, Homework 1	Lecture, class discussion, self-study	[1]
7-8	Levelling	1, 2, 3, 4	Attendance, Q&A, Homework 2	Lecture, class discussion, self-study	[1]
9-10	Midterm				

11	Levelling	1, 2, 3, 4	Attendance, Q&A, Quiz 2	Lecture, class discussion, self-study	[1]
12-13	Control Surveys	1, 2, 3, 4	Attendance, Q&A, Homework 3	Lecture, class discussion, self-study	[1]
14-15	Topographic Surveys	1, 2, 3, 4	Attendance, Q&A, Quiz 3	Lecture, class discussion, self-study	[1]
16	Setting out	1, 2, 3	Attendance, Q&A, Quiz 4	Lecture, class discussion, self-study	[1]
17	GPS and GIS	2	Attendance, Q&A, Homework 4	Lecture, class discussion, self-study	[2], [3]
18	Review				
19-20	Final exam				

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5
1	**Progress Assessment (30%)**					
1.1	Class Attendance (30% of PA)					Attended 80%Pass
1.2	In-class activities: Participation in discussion, quizzes; Other activities: homeworks, group exercise (70% of PA)		HW4	Qz1-4 HW1-3 60%Pass	Qz3-4 60%Pass	
2	**Midterm Exam (30%)**	P1 60%Pass	P1 60%Pass	P2. Q1-Q4 60%Pass	P2. Q1-Q4 60%Pass	
3	**Final Exam (40%)**			Q1-4 60%Pass	Q1-4 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Surveying Practice

Course Code: **CE308IU**

1. General information

Course designation	This course allows students to practice the surveying operations discussed in the theory course – CE 307IU Surveying. It will familiarize students with the different surveying instruments; allow them to practice different surveying operations like taping, stadia survey, levelling, and control survey in a closed-loop traverse; as well as make adjustments and calculations of coordinates of control stations, perform detail surveying and mapping of points.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Specialization (Compulsory)
Teaching methods	Pre-lab discussions and demonstrations, field survey, writing of laboratory reports, map/plot preparations
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (field surveying exercises): 37.5 Private study including laboratory reports preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	
Parallel course	CE307IU Surveying
Course objectives	This course aims to: - familiarize students with the different surveying instruments; - allow the students to practice different surveying operations like angle and distance measurement, levelling, control survey, and detail surveying in a closed-loop traverse, and; - allow the students to practice adjustment and calculation of coordinates of control stations, mapping of points, and preparation of maps and reports involved in surveying.
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	Course learning outcome (CLO)
Knowledge	CLO1. conduct different types of surveys discussed in class and use various surveying tools and instruments in surveying operations;
Skill	CLO2. perform calculations from field data collected including error analysis, adjustments, and corrections to field survey data and prepare maps, plots, field reports, and other related documents; and
Attitude	CLO3. work professionally in a team.

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: laboratory session (4 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
1. Introduction, Angle Measurement	1	I, T, U
2. Horizontal Distance Measurement: Taping and Stadia	2	T, U
3. Levelling	1	T, U
4. Control Survey	2	T, U
5. Detail Surveying & Plotting	2	T, U

Examination forms

Study and examination requirements	Students are expected to attend the practice every week. Students are divided into groups of 4-5 members. Each group performs the field exercises and must prepare and submit a laboratory report one week after the field exercise is done. Each group must submit the final topographic map at the end of the course. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	Main Reference [1] Charles D. Ghilani – Paul R. Wolf. , *Elementary Surveying – An introduction to Geomatics*, 13*th*, edition, Prentice Hall, 2012.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	**ILO**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1		**X**								**X**	
2		**X**								**X**	**X**
3					**X**						

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Introduction, Angle Measurement	1,2,3	Field Survey 1, Lab Report L01	Pre-lab discussions and demonstrations	[1]
2	Horizontal Distance Measurement by Taping	1,2,3	Field Survey 2, Lab Report L02	Pre-lab discussions and demonstrations	[1]
3	Horizontal Distance Measurement by Stadia	1,2,3	Field Survey 3, Lab Report L02	Pre-lab discussions and demonstrations	[1]
4	Levelling	1,2,3,	Field Survey 4, Lab Report L03	Pre-lab discussions and demonstrations	[1]
5-6	Control Survey	1,2,3	Field Survey 5-6, Lab Report L04	Pre-lab discussions and demonstrations	[1]
7-8	Detail Surveying	1,2,3	Field Survey 7-8, Lab Report L05, Final Topographic Map	Pre-lab discussions and demonstrations	[1]

4. Assessment plan

- The final GPA of students is integrated from 2 components, including progress assessment, and final report. The contribution of each component (in percentage) is shown in the table below.

No.	**Assessment Type**	**CLO1**	**CLO2**	**CLO3**
1	**Progress Assessment (80%)**			
1.1	Attendance, Participation in Field Surveys (50% of PA)	FS 1-8 100%Pass		FS 1-8 100%Pass

1.2	Laboratory reports (50% of PA)		L01-L05 60%Pass	L01-L05 60%Pass
2	**Final Requirement (20%)**		Topographic Map 60%Pass	Topographic Map 60%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Soil mechanics

Course Code: CE302IU

1. General information

Course designation	The course provides students with a background of soil behaviors, Lateral earth pressure acting on structures, slope stability, bearing capacity of the soil, and settlement of structures above soil mechanics, which are commonly used in civil engineering construction. Properties of soil include soil formation, physical properties, classification, compaction, permeability, and seepage. Soil mechanics consist of in situ stress, stress in a soil mass, soil compressibility, and soil shear strength. Lateral earth pressures are expressed by pressure at rest based on Rankine and Coulomb, and curved failure surface
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Pham, Nguyen Linh Khanh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, discussion, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - lecture: 28.5 - Discussion: 9 Private study, including examination preparation, specified in hours: 90
Credit points	**3 credits/4.64 ECTS**

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Mechanics of Materials, Construction Materials</td></tr>
<tr><td>Course objectives</td><td>The course provides students with basic definitions physical and mechanical properties of various soils in different states, such as dry, wet, and saturated states. The methods to determine the properties of soils and the effect of groundwater on soil properties are also guided in the course. The stresses acting on the soil at any point beneath the ground caused by upper soil layers and structures constructed on the ground are mentioned. Therefore, the safety of constructed structures can be determined based on the ultimate shear strength of soils. Further, students can appreciate lateral earth pressure's effect on wall structures commonly used in civil engineering construction.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand basic definitions, and determine the physical and mechanical properties of various soils in different states.</td></tr>
<tr><td>Skill</td><td>CLO2. Analyze the soil behaviors under different conditions.
CLO3. Conduct strength analysis and settlement analysis of the soil.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Soil formation and Physical properties	1	I
Plasticity and structure of soil	2	T
Classification of soil	2	T, U
Soil compaction	2	T
Permeability	2	T
Retaining Walls	1	I
Seepage	2	T
In situ Stress	2	T, U
Stress in a Mass soil	2	T, U
Compressibility of soil	2	T, U
Shear strength of soil	2	T, U
Lateral earth pressure	1	I
Slop stability	1	I

</td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
<tr><td>Reading list</td><td>[1] Braja M. Das, Principles of Geotechnical Engineering, 7th Edition, CL - Engineering, 2005.
[2] Braja M. Das, Introduction to Geotechnical Engineering, 1st Edition, CL - Engineering, 2008.
[3] Châu Ngọc Ẩn, Cơ học đất, 5th Edition, HoChiMinh City Vietnam National University, 2012.</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2		x				x				x	
3		x								x	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Soil formation & Physical properties	1	In-class exercise, Quiz 1	Lecture, Discussion	[1] Chapter 2 & 3
2	Plasticity and structure of soil	1	In-class exercise, Quiz 1	Lecture, Discussion	[1] Chapter 4
3	Classification of soil	1, 2	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 5
4	Soil compaction	1	In-class exercise, Quiz 1	Lecture, Discussion	[3] Chapter 6
5-6	Permeability	1, 2	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 7
7	Seepage	1, 2	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 8
8	In situ Stress	1, 2	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 9
9-10	Midterm				
11	Stress in a Mass soil	1, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 10
12-13	Compressibility of soil	2, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 11
14	Shear strength of soil	2, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 12
15-16	Lateral earth pressure	2, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 12 & 13

17	Slope stability	2, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 15
18	Review				
19-20	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/ Quiz (30%)	In-class exercises + Quiz1 50%Pass	In-class exercises 50%Pass	In-class exercises 50%Pass
Midterm exam (30%)	50% Pass	50% Pass	
Final exam (40%)		50% Pass	50% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyen Hoai Nghia

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Soil Mechanics Laboratory

Course Code: **CE303IU**

1. General information

Course designation	The course provides students the knowledge and practical skills in conducting laboratory tests for determining soil properties needed in engineering design such as: the determination of water content and unit weight, particle size distribution, Atterberg limits, compaction test, and direct shear test. The course also provides knowledge on the different testing equipment, general procedures related to each test, and parameters measured in each test.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Pre-laboratory discussions and demonstrations, laboratory experiments, writing of laboratory reports
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (laboratory exercises): 37.5 Private study including laboratory reports preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	MA024IU Differential Equations
Parallel course	CE302 Soil Mechanics
Course objectives	The objective of the course is to give the students practical skills in conducting tests to determine soil properties, performing computations to determine related parameters, analyzing experimental results, and reporting of results.
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	**CLO1. conduct laboratory testing procedures to determine soil properties and use different laboratory instruments used for testing the properties of soil;**
Skill	**CLO2. perform calculations from experimental data collected and and prepare reports, and other related documents; and**
Attitude	**CLO3. work professionally in a team.**

Content

The description of the contents should clearly indicate the weighting of the content and the level.
Weight: laboratory session (4 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
1. Introduction and Lab Orientation	**1**	**I**
2. Water content and unit weight	**1**	**T, U**
3. Sieve analysis	**1**	**T, U**
4. Atterberg limits (LL and PL)	**2**	**T, U**
5. Compaction test (Proctor test)	**1**	**T, U**
6. Direct shear test	**1**	**T, U**
7. Final presentation	**1**	**U**

Examination forms	
Study and examination requirements	Students are expected to attend the practice every week. Students are divided into groups of 4-5 members. Each group performs the laboratory exercises and must prepare and submit a laboratory report one week after the laboratory exercise is done. Students must have an overall score of at least 50/100 points to pass this course.

Reading list	[1] Experimental laboratory manuals Textbooks: [2] Braja M. Das, Principles of Geotechnical Engineering, 7th Edition, CL - Engineering, 2005.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

CLO	ILO										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1		X								X	
2		X								X	X
3					X						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction and lab orientation	1	Attendance	Discussions and demonstrations	[1]
2	Water content and unit weight	1,2,3	Lab experiment 1, Lab report L01	Pre-lab discussions and demonstrations	[1,2]
3	Sieve analysis	1,2,3	Lab experiment 2, Lab report L02	Pre-lab discussions and demonstrations	[1,2]
4 - 5	Atterberg limits (LL and PL)	1,2,3	Lab experiment 3, Lab report L03	Pre-lab discussions and demonstrations	[1,2]
6	Compaction test (Proctor test)	1,2,3	Lab experiment 4, Lab report L04	Pre-lab discussions and demonstrations	[1,2]
7	Direct shear test	1,2,3	Lab experiment 5, Lab report L05	Pre-lab discussions and demonstrations	[1,2]
8	Final presentation	3	Presentation	Reporting and Q&A	[2]

4. Assessment plan

- The final GPA of students is integrated from 2 components, including progress assessment, and final presentation. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3
1	**Progress Assessment (80%)**			
1.1	Attendance, Participation in lab experiments (50% of PA)	Lab Exer 1-5 100%Pass		Lab Exer 1-5 100%Pass
1.2	Laboratory reports (50% of PA)		L01-L05 60%Pass	L01-L05 60%Pass
2	**Final Requirement (20%)**			Presentation 60%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. **Rubrics (optional)**
   - *None*

6. **Date revised: June 06, 2023**

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Foundation Engineering

Course Code: CE309IU

1. General information

Course designation	This course covers foundation analysis and design concepts for civil engineering students. Topics discussed in the courses include bearing capacity, settlement and structural design of shallow foundations and deep foundations, lateral earth pressure, retaining, and sheet pile walls. Moreover, the students will be introduced to the commercial software (e.g., Plaxis, Pier) that is broadly used in practices for foundation designs and exposed to case studies. Through this course, the students will have the background and basic skills to conduct the basic steps for foundation design, given various working conditions.
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Pham, Nguyen Linh Khanh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, discussion, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours[1]: 90

[1] When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Credit points</td><td>3 credits/ 4.64 ECTS</td></tr>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Soil Mechanics – CE302IU</td></tr>
<tr><td>Course objectives</td><td>To equip CE students with fundamentals of foundation engineering and the state-of-the-art geotechnical and structural design concepts and skills essential for professional practice.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the concepts of foundation designs and failure mechanisms.</td></tr>
<tr><td>Skill</td><td>CLO2. Analyze the geotechnical investigation results.
CLO3.Conduct basic calculations (e.g., bearing capacity, settlement, and structural designs) for shallow and deep foundations and associated geotechnical infrastructure.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Review of soil mechanics & soil investigation</td><td>1</td><td>I</td></tr>
<tr><td>Shallow foundations: Ultimate bearing capacity, Allowable bearing capacity, and Settlement</td><td>2</td><td>T</td></tr>
<tr><td>Structural Designs of Spread Footings</td><td>1</td><td>T, U</td></tr>
<tr><td>Combined Footings and Mat Foundations</td><td>1</td><td>T, U</td></tr>
<tr><td>Lateral Earth Pressure</td><td>1</td><td>T, U</td></tr>
<tr><td>Retaining Walls</td><td>1</td><td>T, U</td></tr>
<tr><td>Pile Foundations</td><td>2</td><td>T, U</td></tr>
<tr><td>Sheet Pile Walls and Braced Cuts</td><td>1</td><td>I</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this module.

</td></tr>
<tr><td>Reading list</td><td>

[1] Das, B. M. (2015). *Principles of Foundation Engineering* (7th Ed.). Cengage Learning.

[2] Coduto, D. P., Kitch, W. A., & Yeung, M. C. R. (2001). *Foundation design: Principles and Practices*. Upper Saddle River: Prentice-Hall.

[3] Bowles, L. E. (1996). *Foundation analysis and design*. McGraw-hill.

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (a -k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2		x				x					
3						x				x	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Review of soil mechanics & Soil Investigation	2	In-class exercise, Quiz 1	Lecture, Discussion	[1] Chapter 2 & 3
2	Shallow foundation: Ultimate Bearing Capacity	1, 3	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 4
3-4	Shallow foundation: Allowable Bearing capacity and Settlement	1, 3	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 7
5	Structural Design of Spread Footings	1, 3	In-class exercise and Midterm exam	Lecture, Discussion	[3] Chapter 8
6-7	Combined Footings and Mat Foundations	1, 3	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 8
8	Lateral Earth Pressure	1, 3	In-class exercise and Midterm exam	Lecture, Discussion	[1] Chapter 12
9-10	Midterm				
11-13	Pile foundations	1, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 9
14	Retaining Walls	1, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 13
15-16	Sheet pile walls and Braced Cuts	1, 3	In-class exercise and Final exam	Lecture, Discussion	[1] Chapter 14 & 15
17	Revision			Review-Discussion	

19-20	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quiz (30%)	In-class exercises 50%Pass	In-class exercises + Quiz1 50%Pass	In-class exercises 50%Pass
Midterm exam (30%)	50%Pass		50%Pass
Final exam (40%)	50%Pass		50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Structural Analysis 1

Course Code: CE209IU

1. General information

Course designation	*Define the types of structures, supports and loads. Idealization of structures and loads. Geometric stability and determinacy. Analysis of determinate trusses, frames; internal force diagrams. Displacement calculation by integration, virtual work methods, and graph multiplication method. Force method, displacement method.*
Semester(s) in which the course is taught	4
Person responsible for the course	Prof. Le Van Canh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, discussion, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	MECHANICS OF MATERIALS 1 (Code: CE201IU)
Course objectives	This course introduces computational analysis of structures and the practice of solving structural problems. Understand basic structural engineering concepts. Determine magnitude of different types of loads in accordance to the related codes. Idealization of structures and loads in relation with real structures. Determine the internal forces and draw diagrams for beams, frames and trusses.
Course learning outcomes	**Upon** the successful completion of this course students will be able to:

Competency level	Course learning outcome (CLO)
Knowledge	CLO1. An understanding of basic structural engineering concepts. CLO2. An understanding of methods for computing displacements and slopes for beams and frames using double integration, virtual work methods, and graph multiplication methods.
Skill	CLO3. An ability to determine the internal forces and draw diagrams for determinate structure. CLO4. An ability to determine the internal forces and draw diagrams for indeterminate structure.
Attitude	

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Classification of structures	**1**	**I**
Shear diagram	**1**	**T, U**
Moment diagram	**1**	**T, U**
Deflections	**1**	**T, U**
Slopes	**1**	**T, U**
Force method	**1**	**T, U**
Displacement method	**1**	**T, U**

Examination forms	**Constructed-response test**
Study and examination requirements	**Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.** **Assignments/Examination: Students must have more than 50/100 points overall to pass this module.**
Reading list	**Textbooks:** **[1] R. C. Hibbeler, Structural Analysis, Prentice-Hall.** **References:** **[2] Jacob Fish, Teb Belytschko, A First Course in Finite Elements, Willey, 2007.** **[3] T.H.G. Megson, Structural and stress analysis, Elsevier, 2005.**

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									x
2	x	x									x
3		x								x	x
4		x								x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	**Classification of structures; loads; structural design** **Idealization of structures and loads.**	**1, 3**	**Quiz 1**	**Lecture, Discussion**	**[1] Chapter 1**
2	**Geometric stability and determinacy**	**1, 3**	**Quiz 1**	**Lecture, Discussion**	**[1] Chapter 1**
3-4	**Shear and moment diagrams in frames**	**1, 3**	**Quiz 1**	**Lecture, Discussion**	**[1] Chapter 3,4**
5-7	**Deflection and slopes: integration, virtual work method, graph multiplication** **Quiz 1**	**1, 3**	**Quiz 1**	**Lecture, Discussion**	**[1] Chapter 8**

8	**Midterm**				
9-11	**Force method**	**2, 4**	**Quiz 2**	**Lecture, Discussion**	**[1] Chapter 10**
13-16	**Displacement method**	**2, 4**	**Quiz 2**	**Lecture, Quiz**	**[1] Chapter 11**
17	**REVIEW** **Quiz2**				
18-19	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes/attendance (20%)	Quiz 1 60%Pass	Quiz 2 60%Pass	Quiz 1 60%Pass	Quiz 2 60%Pass
Midterm exam (30%)	Q1 50%Pass		Q2 50%Pass	
Final exam (50%)		Q1 50%Pass		Q2 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Structural Analysis 2

Course Code: CE301IU

1. General information

Course designation	Application of finite element methods to problems in structural analysis. Emphasis on truss, beam and frame elements and interpreting calculation results. Use of commercial FEA packages. Introduction to plastic analysis of frames and slabs.
Semester(s) in which the course is taught	5
Person responsible for the course	Prof. Le Van Canh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Lecture, discussion, and assignments.
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	Structural Analysis 1 – CE209IU

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>This course introduces computational analysis of structures and the practice of using programs to solve structural problems. Background in finite element analysis is developed. Plastic analysis of frames and slabs are introduced.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. An understanding of basic concept of finite element analysis.
CLO2. An understanding of basic concept of plastic analysis of frames and slabs.</td></tr>
<tr><td>Skill</td><td>CLO3. An ability to perform matrix analysis of trusses, beams, and frames.
CLO4. An ability to analyze structures, use structural analysis as a design tool, and solve structural analysis problems using a FEA package.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction to finite element method, discretization of a structure, displacement functions</td><td>1</td><td>I</td></tr>
<tr><td>Truss element</td><td>1</td><td>T, U</td></tr>
<tr><td>Beam element</td><td>1</td><td>T, U</td></tr>
<tr><td>Frame problems</td><td>1</td><td>T, U</td></tr>
<tr><td>FEA software</td><td>1</td><td>I</td></tr>
<tr><td>Plastic hinge analysis of frames</td><td>1</td><td>T, U</td></tr>
<tr><td>Yield line analysis of slabs</td><td>1</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
</table>

Reading list	**Textbooks:** [1] R. C. Hibbeler, Structural Analysis, Prentice-Hall. **References:** [2] Jacob Fish, Teb Belytschko, A First Course in Finite Elements, Willey, 2007. [3] T.H.G. Megson, Structural and stress analysis, Elsevier, 2005.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									x
2	x	x									x
3		x								x	x
4		x								x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction, discretization of a structure, displacement functions	1, 3, 4	Quiz 1	Lecture, Discussion	[1] Chapter 12
2	Truss element	1, 3, 4	Quiz 1	Lecture, Discussion	[1] Chapter 14
3-4	Beam element	1, 3, 4	Quiz 1	Lecture, Discussion	[1] Chapter 15
5-7	Frame problems	1, 3, 4	Quiz 1	Lecture, Discussion	[1] Chapter 16
8	FEA software, **Quiz 1**	1, 3, 4	Quiz 1	Lecture, Quiz	[1] Chapter 14, 15, 16
9-10	Midterm				
11-14	Plastic hinge analysis of beam and frames	2, 4	Quiz 2	Lecture, Discussion	[3] Chapter 18
15-17	Yield line analysis of slabs, **Quiz 2**	2, 4	Quiz 2	Lecture, Quiz	[3] Chapter 19
18-19	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes/attendance (20%)	Quiz 1 60%Pass	Quiz 2 60%Pass	Quiz 1 60%Pass	Quiz 1,2 60%Pass
Midterm exam (30%)	Q1,2 50%Pass		Q1,2 50%Pass	
Final exam (50%)		Q1,2 50%Pass		Q1,2 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Reinforced Concrete 1

Course Code: **CE304IU**

1. General information

Module designation	**CE304IU – Reinforced Concrete 1** Basic design concepts: basic layout of concrete structures, loading; Basic material properties: concrete and reinforcing steel; Analysis of structures: limit state design, simplification of framed structures, moment redistribution; Analysis and design of flexural members; Shear; Bond and anchorage; Serviceability; One-way and two-way slabs; Compression members; Foundation: footings. Current building code and standards are referred to extensively in this course.
Semester(s) in which the module is taught	5
Person responsible for the module	Assoc. Prof. Cao Thanh Ngoc Tran
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the module	Structural analysis – CE209IU
Module objectives/intended learning outcomes	**Overall objectives** are to equip CE students with knowledge about reinforced concrete structures

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	Students who complete the course will be able to perform the following tasks: (1) Identify and calculate loadings to reinforced concrete structures. (2) Design reinforced concrete structures under ultimate and serviceability limit states. (3) Design and analyze the reinforced concrete members: beam, column, one-way and two-way slabs, footings.
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Introduction to reinforced concrete design	1	I
Design of singly-reinforced rectangular beams	2	T, U
Design of doubly-reinforced rectangular beams	2	T, U
Moment redistribution	1	T, U
Design for shear	1	T, U
Bond of reinforcement	1	T, U
Slabs	2	T, U
Columns	2	T, U
Footings	3	T, U

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Text book: [1] Mosley, W.H., Hulse, R. and Bungey, J.H., *"Reinforced Concrete Design to EuroCode 2"*, 6th edition, Macmillan, London, 2007

	[2] Eurocode 2: Design of Concrete Structures – Part 1-1: General rules and rules for buildings

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program/Student Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Identify and calculate loadings to reinforced concrete structures.
(2) CLO2: Design reinforced concrete structures under ultimate and serviceability limit states.
(3) CLO3: Design and analyze the reinforced concrete members: beam, column, one-way and two-way slabs, footings.

Course Learning Outcome	**Program Intended Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x	x									x
CLO2		x								x	x
CLO3		x								x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics along with natural science to represent and pursue research and establish and interpret empirical data sets by the use of quantitative and quantitative methods

(b) Understanding of fundamentals of civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction), and ability to utilize both classical and modern research methods to identify, interpret and integrate technical literature and database

(c) Ability to analyze and prepare investment projects and understand the economic, environmental, and social impact of engineering solutions

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including international and mixed gender members) as well as having good knowledge of management and organization to perform projects to grow into an appropriate and responsible leadership role

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies appear regularly

(g) Ability to communicate on content and problems of civil engineering with both professional colleagues and individuals of a wider public in foreign languages and intercultural relations efficiently, including oral, written, and others

(h) A broad education is necessary to understand the impact of engineering solutions in a global and social context, taking into account sustainability, environmental, ecological, and economic aspects

(i) Understanding of contemporary issues of national, regional, and the world with a broad vision

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and day-life situations.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to reinforced concrete design Properties of constituent materials Load combinations	1	Quiz 1	Lecture, Discussion	[1] Chapter 1,2,3
2, 3	Design of singly-reinforced rectangular beams	2	Quiz 1	Lecture, Discussion	[1] Chapter 4
4,5	Design of doubly-reinforced rectangular beams	2	Quiz 1	Lecture, Discussion	[1] Chapter 4
6	Moment redistribution	2	Quiz 1	Lecture, Discussion	[1] Chapter 3
7	Design for shear	2	Quiz 1	Lecture, Discussion	[1] Chapter 5
8	Bond of reinforcement. Curtailment of reinforcement Serviceability requirements in RC design. **Quiz 1**	2	Quiz 1	Lecture, Quiz 1	[1] Chapter 5
9-10	MIDTERM EXAM				
11-12	One-way spanning slabs Two-way spanning slabs	3	Quiz 2	Lecture, Discussion	[1] Chapter 8
13, 14	Columns – behavior and classification, Moments and forces in columns, Axially loaded columns, Columns resisting uniaxial bending and biaxial bending, Construction of column interaction diagrams	3	Quiz 2	Lecture, Discussion	[1] Chapter 9

15, 16, 17	Footings – general considerations Design of axially loaded pad footing Eccentrically loaded pad footing Design of combined footing, **Quiz 2**	3	Quiz 2	Lecture, Discussion	[1] Chapter 10
18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes/ attendance (30%)	Quiz 1 60%Pass		Quiz 2 60%Pass
Midterm exam (20%)		50%Pass	
Final exam (50%)			50%Pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Reinforced Concrete 2

Course Code: **CE310IU**

1. General information

Module designation	**CE310IU – Reinforced Concrete 2** Analysis and design of prestressed concrete members; beam; slabs. Analysis and design of composite slabs. Current building code and standards are referred to extensively in this course.
Semester(s) in which the module is taught	6
Person responsible for the module	Assoc. Prof. Cao Thanh Ngoc Tran
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/ 4.64 ECTS**
Required and recommended prerequisites for joining the module	Reinforced Concrete 1 – CE304IU
Module objectives/intended learning outcomes	**Overall objectives** are to equip CE students with knowledge about prestressed concrete and composite structures Students who complete the course will be able to perform the following tasks: (1) Identify and calculate loadings to prestressed and composite structures.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	(2) Design prestressed and composite structures under ultimate, serviceability and transfer limit states. (3) Design and analyze the prestressed and composite members: simply supported beams, continuous beams and composite slabs
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Principles of prestressing	1	I
Design for the serviceability limit state	3	T, U
Prestress losses	2	T, U
Calculation of deflection, End blocks	1	T, U
Analysis and design at the ultimate limit state	1	T, U
Design of simply supported presstressed concrete beams	2	T, U
Continuous members	2	T, U
Introduction to composite structures	1	T, U
Design of the steel beam for conditions during construction The composite section at the ultimate state: moment & shear	2	T, U

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Text book: [1] Hurst, M.K., *"Prestressed Concrete Design"*, 2nd edition. [2] Mosley, W.H., Hulse, R. and Bungey, J.H., *"Reinforced Concrete Design to EuroCode 2"*, 6th edition, Macmillan, London, 2007 [3] Eurocode 2: Design of Concrete Structures – Part 1-1: General rules and rules for buildings

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program Intended Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Identify and calculate loadings to prestressed and composite structures.
(2) CLO2: Design prestressed and composite structures under ultimate, serviceability and transfer limit states.
(3) CLO3: Design and analyze the prestressed and composite members: simply supported beams, continuous beams and composite slabs.

No.	**Program Intended Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x	x									x
CLO2		x								x	x
CLO3		x								x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics along with natural science to represent and pursue research and establish and interpret empirical data sets by the use of quantitative and quantitative methods

(b) Understanding of fundamentals of civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction), and ability to utilize both classical and modern research methods to identify, interpret and integrate technical literature and database

(c) Ability to analyze and prepare investment projects and understand the economic, environmental, and social impact of engineering solutions

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including international and mixed gender members) as well as having good knowledge of management and organization to perform projects to grow into an appropriate and responsible leadership role

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies appear regularly

(g) Ability to communicate on content and problems of civil engineering with both professional colleagues and individuals of a wider public in foreign languages and intercultural relations efficiently, including oral, written, and others

(h) A broad education is necessary to understand the impact of engineering solutions in a global and social context, taking into account sustainability, environmental, ecological, and economic aspects

(i) Understanding of contemporary issues of national, regional, and the world with a broad vision

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and

forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and day-life situations.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Principles of prestressing Methods of prestressing Analysis of concrete under working loads	1	Quiz 1	Lecture, Discussion	[1] Chapter 1,2,3
2, 3, 4	Design for the serviceability limit state • Determination of minimum section properties • Design of prestress force • Stresses under the quasi-permanent loading • Magnel diagram construction • Design of tendon profiles • Width of cable zone	2	Quiz 1	Lecture, Discussion	[1] Chapter 9
5,6	Prestress losses	2	Quiz 1	Lecture, Discussion	[1] Chapter 4
7	Calculation of deflection, End blocks,	2	Quiz 1	Lecture, Discussion	[2] Chapter 11
8	Analysis and design at the ultimate limit state, Quiz 1	2	Quiz 1	Lecture, Discussion	[1] Chapter 8
9-10	MIDTERM EXAM				
11-12	Design of simply supported presstressed concrete beams	3	Quiz 2	Lecture, Discussion	[2] Chapter 11
13, 14	Continuous members	3	Quiz 2	Lecture, Discussion	[1] Chapter 11
15	Introduction to composite structures	3	Quiz 2	Lecture, Discussion	[2] Chapter 12

	Design procedure for composite slab				
16, 17	Design of the steel beam for conditions during construction The composite section at the ultimate state: moment & shear. Quiz 2	3	Quiz 2	Lecture, Discussion	[2] Chapter 12
18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes/ attendance (30%)	Quiz 1 60%Pass		Quiz 2 60%Pass
Midterm exam (20%)		50%Pass	
Final exam (50%)			50%Pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: STEEL STRUCTURES

Course Code: **CE305IU**

1. General information

Course designation	*Introduction to students the basic principles of reading steel structural plans, elevations and sectional views, distribute loadings on structures based on architecture plans, determine factored loads for design, design structural steel beams and columns, and design bolted and welded connections.*
Semester(s) in which the course is taught	5TH
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	Mechanics of Materials 1 and Structural Analysis 1

Parallel course	None
Course objectives	The aim of this course is - to develop an understanding of Limit State Design as applied to structural steel beams based on the latest Euro Code 3 – Design of steel structures. - to develop an understanding of Limit State Design as applied to structural steel columns and connections based on the latest Euro Code 3 – Design of steel structures.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	**Course learning outcome (CLO)/ Competency**
Knowledge	CLO1: Analyzing, interpreting, and designing steel structures based on National Codes. CLO2: Analyzing, interpreting, and designing joints of steel structures based on National Codes.
Skills	
Attitude	CLO3: Work independently and professionally

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Introduction, material properties, limit state design, loading, and section classifications.	1	I,T,U
Tension members	1	I,T,U
Compression members: Its Behaviors, local and overall buckling, column slenderness and effective length concept.	1	I,T,U
Local buckling of thin-plate elements	1	I,T,U
In-plane bending of beams	1	I,T,U
Lateral buckling of beams	1	I,T,U
Beam-columns	1	I,T,U
Introduction to moment connections of bolted end plate connections, beam and column splices.	1	I,T,U

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.

Reading list and Media employed	**Textbooks:** [1] Trahair, NS.; Bradford MA.; Nethercot DA. and Gardner, L. "The Behavior Design of Steel Structures to EC 3", 4th Edition, Taylor and Francis, 2007. [2] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-1: Design of Steel Structures – General Rules and Rules for Buildings, British Standards Institution, London, UK. [3] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-5: Design of steel structures – Plated Structural Elements, British Standards Institution, London, UK. [4] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-8: Design of Steel Structures – Design of Joints, British Standards Institution, London, UK. **Additional references:** [5] Gardner, L. and Nethercot, D.A., "Designer's Guide to Eurocode 3: Design of Steel Structures", 3rd Edition, Thomas Telford, 2009.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									
2	x	x									
3						x					

3. Planned learning and assessment activities

Week	**Topic**	**CLO**	**Assessments activities**	**Learning activities**	**Resources**
1	Introduction, material properties, limit state design, loading, and section classifications.	1,2,3	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 1
2	Tension members	1,2,3	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 2
3-4	Compression members: Its Behaviors, local and overall buckling, column slenderness and effective length concept.	1,2,3	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 3
5-8	Local buckling of thin-plate elements	1,2,3	Attendance Q&A Homework 3 Quizz 1	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 4

9-10	**MIDTERM EXAMINATION**		**WRITING**		
11	In-plane bending of beams	1,2,3	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 5
12-13	Lateral buckling of beams	1,2,3	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion;	[1] Chapter 6
14-15	Beam-columns	1,2,3	Attendance Q&A Homework 6	Reading materials before class;	[1] Chapter 7
16-17	Introduction to moment connections of bolted end plate connections, beam and column splices.	1,2,3	Attendance Q&A Quizz 2	Doing the lecture; Discussion;	[1] Chapter 9
18-19	**FINAL EXAMINATION**		**WRITING**		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3
1	**Progress Assessment (PA, 30%)**			
1.1	Class attendance (25% of PA)			Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)	Quizz 1	Quizz 2	Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)	HW1-6, Submitted 80%Pass		HW1-6, Submitted 80%Pass
2	**Midterm exam (Mid, 20%)**	Q1-5, 60%Pass		
3	**Final exam (Fin, 50%)**	Q1, 60%Pass	Q2, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Construction Engineering

Course Code: **CE311IU**

1. General information

Module designation	**CE311IU – Construction Engineering** This course is designed to provide students knowledge about construction engineering, including earthwork, foundation construction, wood construction, concrete construction, masonry construction, and steel construction.
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Nguyen, Hoai Nghia
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the module	Reinforced concrete 1 – CE304IU
Module objectives/intended learning outcomes	**Overall objectives** are to equip CE students with knowledge about construction engineering, including earthwork, foundation construction, wood construction, concrete construction, masonry construction, and steel construction.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	Students who complete the course will be able to perform the following tasks: (1) Knowing the construction industry and its related matter (2) Caculating the earthwork volume and knowing earthwork construction methodology (3) Calculating the volume and knowing various construction methodology of various construction works such as: foundation, masonry, concrete works, …
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Introduction	1	I
Earthmoving materials and operation	2	T, U
Excavating and lifting	1	T, U
Loading and hauling	1	T, U
Compacting and finishing	1	T, U
Foundation	1	T, U
Wood construction	2	T, U
Concrete construction	3	T
Concrete from design	2	T, U
Masonry construction	1	T, U
Steel construction	1	T

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Text book: [1] S. W. Nunnally, (2014). *Construction Methods and Management*, Pearson, 8th edition.

	[2] R. L. Peurifoy, C. J. Schexnayder, R. L. Schmitt, and A. Shapira. (2018). *Construction Planning, Equipment, and Methods*, McGraw-Hill Education 9th edition.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program Intended Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Knowing the construction industry and its related matter
(2) CLO2: Caculating the earthwork volume and knowing earthwork construction methodology
(3) CLO3: Calculating the volume and knowing various construction methodology of various construction works such as: foundation, masonry, concrete works, …

No.	**Program Intended Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x										x
CLO2		x								x	x
CLO3		x								x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics and natural sciences to represent it in pursuing and establishing research by the use of quantitative and quantitative methods.

(b) Understanding the fundamentals of the civil engineering field (e.g. construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction)

(c) Ability to analyze and prepare investment projects and understand their economic, environmental, and social impacts

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including multi-national and mixed-gender teams) as well as having good knowledge of management and organization to be able to take on leadership roles

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies emerge regularly as well as take part in developing new technologies by engaging in research works having the ability to interpret and use empirical datasets, integrate technical literature and databases to solve specific civil engineering problems or fill knowledge gaps.

(g) Ability to communicate matters related to civil engineering to colleagues in the same profession or the general public, effectively using oral, written, and other forms of communication.

(h) A broad education necessary to understand the impacts of civil engineering solutions in a

global and social context

(i) A broad understanding of contemporary issues in civil engineering in the national, regional, and global level

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and daily life situations

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction	1	HW1	Lecture, Discussion, HW1	[1] Chapter 1
2, 3	Earthmoving materials and operation	2	HW2 and/or Quiz1	Lecture, HW2 and/or Quiz1	[1] Chapter 2
4	Excavating and lifting	2	Presentation HW3 and/or Quiz2	Lecture, HW3 and/or Quiz2	[1] Chapter 3
5	Loading and hauling	2	Presentation HW4 and/or Quiz3	Lecture, HW4 and/or Quiz3	[1] Chapter 4
6	Compacting and finishing	2	Presentation HW5 and/or Quiz4	Lecture, HW5 and/or Quiz4	[1] Chapter 5
7	Foundation	3	Quiz5	Lecture, Quiz5	[1] Chapter 10
8	Wood construction	3	Quiz6	Lecture, Quiz6	[1] Chapter 11
9-10	FINAL EXAM				
11-13	Concrete construction	3	Quiz7	Lecture, Quiz7	[1] Chapter 12
14, 15	Concrete from design	3	HW6	Lecture, HW6	[1] Chapter 13
16	Masonry construction	3	Quiz8	Lecture, Quiz8	[1] Chapter 14
17	Steel construction	3	Quiz9	Lecture, Quiz9	[1] Chapter 15

18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes/ attendance (10%)		Qz1, Qz2, Qz3, Qz4 60%Pass	Qz5, Qz6, Qz7, Qz8, Qz9 60%Pass
Homework exercises/ Presentation (20%)	HW1 50%Pass	HW2, HW3, HW4, HW5, 50% Pass Presentations 60% Pass	HW6 50% Pass
Midterm exam (20%)		Q1, Q2, Q3, Q4, Q5, Q6, Q7, 50%Pass	
Final exam (50%)			Q1, Q2, Q3, Q4, Q5, Q6, Q7 50%Pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Construction Management

Course Code: **CE401IU**

1. General information

Course designation	*This course covers a wide range of subjects, reflecting the breadth of knowledge needed to understand the dynamics of the construction industry. This course focuses on the processes and tasks required for the management of construction projects. Students will work in project teams and perform various tasks associated with construction project administration including, developing construction budgets, record keeping and documentation, interpreting contracts and specifications, and other duties necessary for efficient project operation and successful completion.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	*Phạm Văn Bảo (Msc)*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Required and recommended prerequisites for joining the course	Construction Engineering
Parallel course	None
Course objectives	The aim of this course is to provide - A basic understanding and application of construction operations and construction management. - A basic understanding of construction project management.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	**Course learning outcome (CLO)/ Competency**
Knowledge	**CLO1. Understand construction documents: drawings, technical specifications, quantity takeoff, and various construction contract forms.** **CLO2. Understand equipment ownership, construction safety, material management, and cost control.**
Skills	**CLO3. Test the application of calculation methods in construction planning & scheduling, project cash flow, construction labor, cost control, and estimating process.**
Attitude	**CLO4. Work independently and professionally**

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
History and basic concepts	**1**	**I**
Preparing the bid package	**1**	**T**
Issues during the construction phase	**1**	**T, U**
Construction contracts	**1**	**T**
Legal structure	**1**	**I, T**
Project planning	**1**	**T, U**
Project scheduling	**1**	**T, U**
Scheduling – PERT Networks and linear operations	**1**	**T, U**
Project cash flow and funding	**1**	**T, U**
Equipment Ownership	**1**	**T, U**
Construction labor	**1**	**T, U**
Estimating process	**1**	**T, U**
Cost control	**1**	**T, U**
Materials management and safety	**1**	**I, T**

</td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list and Media employed</td><td><u>Textbooks:</u>
[1] D. W. Halpin (2006), "Construction Management" Third Edition, Wiley & Sons
<u>Additional references:</u>
[2] Barry Fryer and Marilyn Fryer (1996), The practice of construction management, 3rd Edition, Blackwell Science
[3] W.J. Slater (2005), Cases in construction management, Taylor & Francis e-Library.</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**
1	**x**										
2	**x**	**x**									
3	**x**	**x**									
4						**x**					

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	**History and basic concepts**	1,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 1
2	**Preparing the bid package**	1,4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 2
3	**Issues during the construction phase**	1,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 3
4	**Construction contracts**	1,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 4
5	**Legal structure**	1,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 5
6	**Project planning**	3,4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class,	[1] Chapter 6
7-8	**Project scheduling**	3,4	Attendance Q&A Homework 7	Reading materials before class;	[1] Chapter 7

				Doing the lecture; Discussion; and doing Quiz in class	
9-10	Midterm examination		Writing		
11	**Scheduling – PERT Networks and linear operations**	3,4	Attendance Q&A Homework 8	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 8
12	**Project cash flow and funding**	3,4	Attendance Q&A Homework 9	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 9&10
13	**Equipment Ownership**	3,4	Attendance Q&A Homework 10	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 11
14	**Construction labor**	3,4	Attendance Q&A Homework 11	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 14
15	**Estimating process**	3,4	Attendance Q&A Homework 12	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 15
16-17	**Cost control**	3,4	Attendance Q&A Homework 13	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 16
18	**Materials management and safety**	2,4	Attendance Presentation	Reading materials before class; Doing the presentation; Discussion;	[1] Chapter 17&18
19-20	Final examination		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4
1	Progress assessment (PA, 30%)				
1.1	Class attendance (50% of PA)				Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)				Participated in class Q&A 60%Pass
1.3	Home works (25% of PA)				HW1-13, Submitted 80%Pass
2	Midterm exam (Mid, 20%)	Q1-3, 60%Pass	Q4-5 60%Pass		
3	Final exam (Fin, 50%)		Q1-2 60%Pass	Q3-5 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: STEEL PROJECT

Course Code: CE312IU

1. General information

Course designation	A practice construction project is carried out, including steel buildings, and water supply or transportation structures. Students are supposed to apply the knowledge in the steel structure course to this project composing of calculating loads, determining internal forces with an analysis structure software, designing with a certain code, and ultimately descripting them on a report
Semester(s) in which the course is taught	6
Person responsible for the course	MSc. Pham Nhan Hoa
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Discussion and project.
Workload (incl. contact hours, self-study hours)	Total workload: 67.5 (Estimated) Contact hours: - Lecture: 19.5 - Checking: 18 Private study including examination preparation, specified in hours: 30
Credit points	**1 credit/2.45 ECTS**
Required and recommended prerequisites for joining the course	Steel Structures – CE305IU

<table>
<tr><td>Course objectives</td><td>1. The overall objectives of this course are to develop an understanding of Limit State Design as applied to structural steel beams based on the latest Euro Code 3 – Design of steel structures.
2. The course aims to develop an understanding of Limit State Design as applied to structural steel columns and connections based on the latest Euro Code 3 – Design of steel structures.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td></td></tr>
<tr><td>Skill</td><td>CLO1: enhance problem solving skills using the software in civil engineering problems with SAP, ETABS, and EXCEL.
CLO2: develop the self-learning with respect to other softwares of civil engineering students</td></tr>
<tr><td>Attitude</td><td>CLO3: Work independently and professionally</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Intepretation of Pratical steel Structures</td><td>1</td><td>T, U</td></tr>
<tr><td>Steel-Structure Model</td><td>2</td><td>T,U</td></tr>
<tr><td>Steel Structures calculation</td><td>2</td><td>T, U</td></tr>
<tr><td>Report and Foundation structure drawings</td><td>2</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Report</td></tr>
<tr><td>Study and examination requirements</td><td>Student is expected that you will spend at least 5 hours per week on studying this course. This time should be made up of reading, working on exercises and problem, group assignment and attending class lectures and tutorials. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. Regular attendance is essential for successful performance and learning in this course, particular in view of the interactive teaching and learning approach adopted.</td></tr>
</table>

Reading list	**Textbooks:** [1] Trahair, NS.; Bradford MA.; Nethercot DA. and Gardner, L. "The Behavior Design of Steel Structures to EC 3", 4th Edition, Taylor and Francis, 2007. [2] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-1: Design of Steel Structures – General Rules and Rules for Buildings, British Standards Institution, London, UK. [3] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-5: Design of steel structures – Plated Structural Elements, British Standards Institution, London, UK. [4] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-8: Design of Steel Structures – Design of Joints, British Standards Institution, London, UK. **Additional references:** [5] Gardner, L. and Nethercot, D.A., "Designer's Guide to Eurocode 3: Design of Steel Structures", 3rd Edition, Thomas Telford, 2009.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (a -k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x										x
2	x										x
3							x			x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Intepretation of Pratical steel Structures	1	In-class excercies 1	Discussion, Group work,	
2	Steel-Structure Model	1,2,3	In-class excercies 2	Discussion, Group work,	
3	Steel Structures calculation	1,2,3	In-class excercies 3	Discussion, Group work,	
4	Report and Foundation structure drawings	1,2,3	In-class excercies 4	Discussion, Group work,	
5	Project defense	1,2,3	In-class excercies	Discussion, Group work,	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes (30%)	Excersies 1,2,3,4 60%Pass	Excersies 1,2,3,4 60%Pass	
Reports/ Presentation (70%)	Report/ Presentation (70% pass)	Report/ Presentation (70% pass)	Report/ Presentation (70% pass)

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Reinforced Concrete Project

Course Code: **CE313IU**

1. General information

Module designation	**CE313IU – Reinforced Concrete Project** In this course, students are supposed to apply the knowledge in the courses of reinforced concrete design to this project composing of calculating loads, designing reinforced concrete beams, columns and slabs, preparing drawing and writing a report..
Semester(s) in which the module is taught	6
Person responsible for the module	Assoc. Prof. Cao Thanh Ngoc Tran
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**
Required and recommended prerequisites for joining the module	Reinforced Concrete 1 – CE304IU
Module objectives/intended learning outcomes	**Overall objectives** Students who complete the course will be able to perform the following tasks:

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td></td><td>(1) Designing the structural layout of reinforced concrete building.
(2) Designing the details of beams, columns and slabs
(3) Performing the design in the calculation note, drawing, and defense.</td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Project guidance</td><td>1</td><td>I</td></tr>
<tr><td>Structural dimensions
Material characteristics</td><td>1</td><td>T, U</td></tr>
<tr><td>Load determination</td><td>1</td><td>T, U</td></tr>
<tr><td>Modelling</td><td>1</td><td>T, U</td></tr>
<tr><td>Detailings</td><td>3</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
<tr><td>Reading list</td><td>Text book:
[1] Hurst, M.K., "Prestressed Concrete Design", 2nd edition.
[2] Mosley, W.H., Hulse, R. and Bungey, J.H., "Reinforced Concrete Design to EuroCode 2", 6th edition, Macmillan, London, 2007
[3] Eurocode 2: Design of Concrete Structures – Part 1-1: General rules and rules for buildings</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program Intended Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Designing the structural layout of reinforced concrete building.
(2) CLO2: Designing the details of beams, columns and slabs.
(3) CLO3: Performing the design report.

No.	Program Learning Outcome (ILO)										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x	x									x
CLO2		x								x	x
CLO3							x			x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics along with natural science to represent and pursue research and establish and interpret empirical data sets by the use of quantitative and quantitative methods

(b) Understanding of fundamentals of civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction), and ability to utilize both classical and modern research methods to identify, interpret and integrate technical literature and database

(c) Ability to analyze and prepare investment projects and understand the economic, environmental, and social impact of engineering solutions

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including international and mixed gender members) as well as having good knowledge of management and organization to perform projects to grow into an appropriate and responsible leadership role

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies appear regularly

(g) Ability to communicate on content and problems of civil engineering with both professional colleagues and individuals of a wider public in foreign languages and intercultural relations efficiently, including oral, written, and others

(h) A broad education is necessary to understand the impact of engineering solutions in a global and social context, taking into account sustainability, environmental, ecological, and economic aspects

(i) Understanding of contemporary issues of national, regional, and the world with a broad vision

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and day-life situations.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Project guidance			Lecture	Lecture note
2	Structural dimensions Material characteristics	1,3	Attendance/ report	Project checking	[1] Chapter 4
3	Load determination	1,3	Attendance/ report	Project checking	[1] Chapter 4
4	Modelling	1,3	Attendance/ report	Project checking	[1] Chapter 3
5,6,7	Detailings	1,3	Attendance/ report	Project checking	[1] Chapter 7,8,9
	Submission			Drawings and Reports	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Drawing (50%)	Structural layout 50%Pass	Beam, Column and Slab Detailing 50%Pass	
Report (50%)			Design Report 50% pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Foundation Engineering Project

Course Code: CE402IU

1. General information

Course designation	This course provides an organizational and procedural understanding of geotechnical and foundation engineering. Topics covered in this course include subsurface soil investigation and integrated design of building foundations. In addition, this class will equip students with the knowledge necessary to apply geotechnical and foundation principles in analyzing and designing an economic substructure system.
Semester(s) in which the course is taught	4
Person responsible for the course	Dr. Pham, Nguyen Linh Khanh
Language	English
Relation to curriculum	*Compulsory*
Teaching methods	Discussion and project.
Workload (incl. contact hours, self-study hours)	Total workload: 67.5 (Estimated) Contact hours:(lecture, exercise, laboratory session, etc.): 37.5 hours Private study, including examination preparation, specified in hours: 30
Credit points	**1 credit/2.45 ECTS**
Required and recommended prerequisites for joining the course	Foundation Engineering – CE309IU

<table>
<tr><td>Course objectives</td><td>The overall objectives of this course are to develop an understanding of foundation engineering design issues in a professional substructure design project that will merge knowledge gained in prerequisite geotechnical and foundation engineering courses. After this course, students will gain proficiency in structural conceptualization, induced load determination, modeling and analysis, detailed design of substructure, and graphical communication.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td></td></tr>
<tr><td>Skill</td><td>CLO1. Analyze data from different in situ (field) tests (e.g., SPT, CPT) for use in foundation engineering.
CLO2. Design a foundation system for a given superstructure
CLO3. Generate structural drawings for construction</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Interpretation of the geotechnical report</td><td>1</td><td>T, U</td></tr>
<tr><td>Structural foundation calculation</td><td>2</td><td>T, U</td></tr>
<tr><td>Foundation structure drawings</td><td>2</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Report</td></tr>
<tr><td>Study and examination requirements</td><td>The student is expected to spend at least 5 hours per week studying this course. This time should include reading, working on exercises and problems, group assignments, and attending class lectures and tutorials. University regulations indicate that students who attend less than 80% of scheduled classes may be refused final assessment. Regular attendance is essential for successful performance and learning in this course, particularly in view of the adopted interactive teaching and learning approach.</td></tr>
<tr><td>Reading list</td><td>[1] Das, B. M. (2015). Principles of Foundation Engineering (7th Ed.). Cengage Learning.
[2] Donald P. Coduto, Foundation Design Principles and Practices, 2nd, edition, Prentice Hall, 2001.
[3] Joseph E. Bowles, Foundation Analysis and Design, 5th edition..</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1						x					
2		x				x				x	
3							x			x	

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Interpretation of geotechnical report	1	In-class exercise, report	Discussion	
2	Structural foundation calculation	2	In-class exercise, report	Discussion	
3-4	Foundation structure drawings	3	In-class exercise, report	Discussion	
5	Report	1, 2, 3	Report/ Presentation	Discussion	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Reports/ Presentation (100%)		Report/ Presentation (70% pass)	Report/ Presentation (70% pass)

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Construction Project

Course Code: **CE403IU**

1. General information

Module designation	CE311IU – Construction Engineering In this course, students are supposed to apply the knowledge in the courses of construction engineering and construction management to this project composing of calculating loads for construction, designing formwork for column, slab and beam, safety measure, preparing the schedule of concrete frame construction (optional), and finally writing a report.
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Nguyen, Hoai Nghia
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, project, and defense.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 67.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 30
Credit points	**1 credit/2.45 ECTS**
Required and recommended prerequisites for joining the module	Construction Engineering –CE311IU
Module objectives/intended learning outcomes	**Overall objectives** Students who complete the course will be able to perform the

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td></td><td>following tasks:

(1) Designing the construction formwork system for the concrete structure and the construction methodology.
(2) Designing the construction methodology for the sub-structure, including: pressed piles, bored piles, pile caps (individually).
(3) Performing the design in the calculation note, drawing, and defense.</td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Project guidance</td><td>1</td><td>I</td></tr>
<tr><td>Structure dimensions
Material characteristics
Formwork layout arrangement</td><td>1</td><td>T, U</td></tr>
<tr><td>Load determination
Slab formwork design</td><td>1</td><td>T, U</td></tr>
<tr><td>Load determination
Beam forwork design</td><td>1</td><td>T, U</td></tr>
<tr><td>Load determination
Column formwork design</td><td>1</td><td>T, U</td></tr>
<tr><td>Sub-structure methodology (individual assignment)</td><td>1</td><td>T, U</td></tr>
<tr><td>Construction methodology and safety measure</td><td>1</td><td>T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Defense</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation, report, and defense.
Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
<tr><td>Reading list</td><td>Text book:</td></tr>
</table>

	[1] S. W. Nunnally, (2014). *Construction Methods and Management*, Pearson, 8th edition. [2] R. L. Peurifoy, C. J. Schexnayder, R. L. Schmitt, and A. Shapira. (2018). *Construction Planning, Equipment, and Methods*, McGraw-Hill Education 9th edition.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program/Student Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Designing the construction formwork system for the concrete structure and the construction methodology.
(2) CLO2: Designing the construction methodology for the sub-structure, including: pressed piles, bored piles, pile caps (individually).
(3) CLO3: Performing the design in the calculation note, drawing, and defense.

No.	**Program Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x										x
CLO2	x										x
CLO3							x			x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics and natural sciences to represent it in pursuing and establishing research by the use of quantitative and quantitative methods.

(b) Understanding the fundamentals of the civil engineering field (e.g. construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction)

(c) Ability to analyze and prepare investment projects and understand their economic, environmental, and social impacts

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including multi-national and mixed-gender teams) as well as having good knowledge of management and organization to be able to take on leadership roles

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies emerge regularly as well as take part in developing new technologies by engaging in research works having the ability to interpret and use empirical datasets, integrate technical literature and databases to solve specific civil engineering problems or fill knowledge gaps.

(g) Ability to communicate matters related to civil engineering to colleagues in the same profession or the general public, effectively using oral, written, and other forms of

communication.

(h) A broad education necessary to understand the impacts of civil engineering solutions in a global and social context

(i) A broad understanding of contemporary issues in civil engineering in the national, regional, and global level

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and daily life situations

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Project guidance			Lecture	Lecture note
2	Structure dimensions Material characteristics Formwork layout arrangement	1,3	Attendance/ report	Project checking	[1] Chapter 13
3	Load determination Slab formwork design	1,3	Attendance/ report	Project checking	[1] Chapter 13
4	Load determination Beam forwork design	1,3	Attendance/ report	Project checking	[1] Chapter 13
5	Load determination Column formwork design	1,3	Attendance/ report	Project checking	[1] Chapter 13, 14
6	Sub-structure methodology (individual assignment)	2,3	Attendance/ report	Project checking	[1] Chapter 10
7	Construction methodology and safety measure	1,2,3	Attendance/ report	Project checking	[1] Chapter 11
	DEFENSE			Project defense	

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
Attendance (30%)			

Report – Calculation note (20%)	Slab. Beam , column formwork design 50%Pass	Sub-structure design 50%Pass	Calculation note performance 50% Pass
Report – Drawing (20%)	Design-based performance 50% pass	Design-based performance 50% pass	Standard compliance 50% pass
Defense (30%)	Questions related to design 50% pass	Questions related to design 50% pass	

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: DYNAMICS OF STRUCTURES

Course Code: **CE404IU**

1. General information

Course designation	*This course covers the fundamental concepts of structural dynamics. Formulations of the equation of motion. Free and forced vibrations of linear, single, and multiple degrees of freedom systems. Damping. Mode superposition. Analysis of dynamic response for structures subjected to time-varying, including earthquake, wind, and blast loading.*
Semester(s) in which the course is taught	6
Person responsible for the course	*Phạm Nhân Hòa (Msc)*
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, presentation, discussion, and assignments
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 (Estimated) Contact hours: - Lecture: 28.5 - Discussion: 9 Private study including examination preparation, specified in hours: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	Engineering Mechanics – Dynamics, Structural Analysis 2

Parallel course	None
Course objectives	The aim of this course is - to develop the fundamental concepts of structural dynamics. - to develop analytical and problem solving skills for free and forced vibrations of single and multiple degree of freedom structures under dynamic loading including earthquake, wind and blast loading.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Categories	Course learning outcome (CLO)/ Competency
Knowledge	CLO1: Developing the fundamental concepts of structural dynamics. CLO2: Developing analytical and problem solving skills for free and forced vibrations of single and multiple degree of freedom structures under dynamic loading including earthquake, wind and blast loading.
Skills	CLO3: Problem resolution. Systematically analyze the problem and apply the appropriate technique to solve the problem.
Attitude	CLO4: Work independently and professionally

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
SINGLE DEGREE OF FREE DOOM		
Overview	1	I,T,U
Analysis of free vibration	1	I,T,U
Reponse to harmonic loading	1	I,T,U
Response to periodic loading	1	I,T,U
Response to implusive loading	1	I,T,U
MULTI-DEGREE OF FREE DOOM		
Undamped free vibration	1	I,T,U
Dynamic analysis and response of linear systems	1	I,T,U

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.
Reading list and Media employed	**Textbooks:** [1] R.W.Clough, J.Penzien, Dynamics of Structures, 3th edition, Computers & Structures Inc., 1995 [2] A. K. Chopra, Dynamics of Structures - Theory and Applications to Earthquake Engineering, 3th edition, Pearson Prentice Hall, 2007

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	1	2	3	4	5	6	7	8	9	10	11
1	x	x									
2	x	x									
3	x	x						x	x		
4						x					

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	**Overview**	1,2,3,4			[1] Chapter 1 [2] Chapter 1
2-3	**Analysis of free vibration**	1,2,3,4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 2 [2] Chapter 2
4-5	**Reponse to harmonic loading**	1,2,3,4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 3 [2] Chapter 3
6	**Response to periodic loading**	1,2,3,4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 4 [2] Chapter 4
7-8	**Response to implusive loading**	1,2,3,4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 5 [2] Chapter 5
9-10	**MIDTERM EXAMINATION**		**WRITING**		
11-14	**Undamped free vibration**	1,2,3,4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 6,7 [2] Chapter 6,7
15-17	**Dynamic analysis and response of linear systems**	1,2,3,4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion; and doing Quiz in class	[1] Chapter 8 [2] Chapter 8
18-19	**FINAL EXAMINATION**		**WRITING**		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.

- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4
1	**Progress Assessment (PA, 30%)**				
1.1	Class attendance (25% of PA)			Attended 80%Pass	Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)			Participated in class Q&A 60%Pass	Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-6, Submitted 80%Pass	HW1-6, Submitted 80%Pass
2	**Midterm exam (Mid, 20%)**	Q1-4, 60%Pass	Q1-4, 60%Pass		
3	**Final exam (Fin, 50%)**	Q5-6, 60%Pass	Q5-6, 60%Pass		

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: Hydraulic structures

Course Code: **CE405IU**

1. General information

Course designation	Water demand for economic development is dramatically increasing; but available water resources is limited. Recently, it tends to be declining as the result of climate change and man-made pollutant. Therefore, a sustainable approach for water resources development and protection is needed. This course will offer students the knowledge to design of some typical hydraulic structures supporting for sustainable water resources engineering. In this course, the application of fluid mechanics, hydrology and open channel hydraulics for designing some common types of water infrastructures are introduced and practiced, which includes storage structures, control structures, energy dissipation structures, coastal protection structures and so forth. Beside of that conventional procedures, students also are provided the sustainable solutions and environmental impact assessment (EIA) practices for the typical structures, which strongly impact on society and natural environment, such as: dam, hydro-power plants, urban drainage systems, and so forth
Semester(s) in which the course is taught	7,8
Person responsible for the course	A/Prof. Phạm Ngọc
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, lesson, project, seminar.

Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credit/4.64 ECTS**
Required and recommended prerequisites for joining the course	CE205IU (Fluid Mechanics) and CE211IU (Hydrology and Hydraulic)
Course objectives	Students will be provided with technical procedures, and will be practiced to design sustainable hydraulic structures, targeting to sustainable water resources engineering and water related disaster prevention structures.
Course learning outcomes	Upon the successful completion of this course students will be able to:

Competency level	**Course learning outcome (CLO)**
Knowledge	CLO1. Recognize and describe the different type of hydraulic structures together with their functions, and application conditions CLO2. Propose the structural measures for sustainable water resources development in a sustainable approach harmonizing technical, social, economic and environmental criteria CLO3. Design some common the hydraulic structures by integrating the fundamental knowledge and skills studied previously, and the concept of sustainable development
Skill	CLO4. Present skills in teamwork, communication, planning, critical thinking, use of English in technical environment, identification and solving the real problems
Attitude	

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Introduction to hydraulic structures	1	I
Conceptually design the reservoirs	2	T, U
Conceptually design the dams	2	T, U
Conceptually design the spillways and dissipaters	2	T, U
Field trip to visit a multi purposed dam/reservoir or coastal defense project	1	I
Introduction to fish passage	2	I
Introduction to coastal engineering and management	2	I
Introduction to Environmental Impact Assessment (EIA)	2	T
Group project presentation	1	I, U

</td></tr>
<tr><td>Examination forms</td><td>

Written examinations: Midterm and Final Exams

Type: Identify and solve problems, discussions

</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance: Students are expected to attend the lectures every week. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment.

Computation exercises, quizzes (written or oral), home works, and reports: are given regularly, whether individually or done by group, for the students to achieve CLOs.

Examinations: A midterm exam will be given halfway through the semester and a final exam at the end. Students must have an overall score of at least 50/100 points to pass this course.

</td></tr>
</table>

Reading list	**Textbooks:** [1] Novak P., Moffat A.I.B., Nalluri C, and Narayanan, Hydraulic structures (4th Edition), Taylor & Francis Group. 2007. **Additional references:** [2] Larry W. Mays, Hydraulic design handbook, MacGraw - Hill Companies, 2004 [3] Khatsuria R.M, Hydraulic of spillways and energy dissipaters. Marcel Dekker, 2005. [4] QCVN 04-05: 2012/BNNPTNT "Quy chuẩn kỹ thuật quốc gia công trình thủy lợi – các quy đinh chủ yếu về thiết kế " [5] Tiêu chuẩn ngành 14TCN157-2005 "Tiêu chuẩn thiết kế đập đất đầm nén" [6] Bộ Nông nghiệp và Phát triển Nông thôn. "Tiêu chuẩn kỹ thuật thiết kế đê biển". 2012

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO, from 1 to 4) and Program Intended Learning Outcomes (ILO, from a to k) is shown in the following table:

CLO	ILO										
	a	b	c	d	e	f	g	h	i	j	k
1		x									x
2		x							x		x
3		x					x			x	x
4											x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to hydraulic structures	1	Quiz1	Lecture, Discussion, Inclass-Quiz	[1] [4]
2-3	Conceptually design the reservoirs	1,2,3	Quiz2 HW1	Lecture, Discussion Inclass-Quiz, HW	[1] [4]
4-5	Conceptually design the dams	1,2,3	Quiz3 HW2	Lecture, Discussion Inclass-Quiz, HW	[1] [5]
6-7	Conceptually design the spillways and dissipaters	1,2,3	Quiz4 HW3	Lecture, Discussion Inclass-Quiz, HW	[1] [3]
8	Field trip to visit a multi purposed dam/reservoir or coastal defense project	1,4	Group report	Teamwork	
9	Midterm				

10-11	Introduction to fish passage	1	Quiz5	Lecture, Discussion Inclass-Quiz	[1] [2]
12-13	Introduction to coastal engineering and management	1	Quiz6	Lecture, Discussion Inclass-Quiz	[1] [2] [6]
14-15	Introduction to Environmental Impact Assessment (EIA)	2,3	Quiz7	Lecture, Discussion Inclass-Quiz	[1] [2] [6]
16	Group project presentation	3,4	Group project report	Self-study, Discussion, presentation	
17	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Class participation/In-class activities/quizzes (10%)	Qz(1-6) 50%Pass	Qz(2-4) 50%Pass	Qz(2-4) 50%Pass	
Homework exercises (5%)		HW(1-3) 60%Pass	HW(1-3) 60%Pass	
Field trip (5%)	Group report 80% pass			Group report 80% pass
Group project report and presentation (10%)		Group report 80% pass	Group report 80% pass	Class presentation 80% pass
Midterm exam (30%)	Q1, 60%Pass	Q2-4 60%Pass	Q2-4 60%Pass	
Final exam (40%)	Q1, 60%Pass	Q2-4 60%Pass	Q2- 60%Pass	

5. Rubrics (optional)

- *None*

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Tall Buildings

Course Code: **CE407IU**

1. General information

Module designation	**CE407IU – Tall Buildings** The course aims at the development of ability for design of high-rise buildings. It offers the student with an opportunity to gain real life design experience, and to develop the ability to identify and solve civil engineering problems in a feasible and creative way, and to apply design procedures, codes of practice and computer software to design conventional steel and concrete high-rise buildings
Semester(s) in which the module is taught	3
Person responsible for the module	Assoc. Prof. Cao Thanh Ngoc Tran and Dr. Nguyen Linh Khanh Pham
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ETCS**
Required and recommended prerequisites for joining the module	Reinforced Concrete 2 – CE310IU Foundation Engineering – CE309IU Foundation Project – CE402IU

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Module objectives/intended learning outcomes	**Overall objectives** are to equip CE students with knowledge about the design of high-rise buildings. Students who complete the course will be able to perform the following tasks: (1) Identify and calculate lateral loadings to superstructures of tall buildings. (2) Calculate the lateral loading to each structural member. (3) Conduct basic calculations on various foundation designs and supporting structures
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Introduction	1	I
Wind Loadings	3	T, U
Earthquake Loadings	2	T, U
Lateral resistance systems	2	T, U
Sheet pile wall	1	T
Braced cut	1	T
Foundation design	2	T, U
Foundation failure and Repair: Residential and Light Commercial Buildings	2	T
Foundation failure and Repair: High rise and heavy construction	2	T

Examination forms	Constructed-response test
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this module.
Reading list	Text book: [1] Taranath, B.S. 2012, Reinforced Concrete Design of Tall Buildings, CRC Press, Boca Raton, FL.

	[2] Das, B. M. (2015). Principles of Foundation Engineering (7th ed.). Cengage Learning [3] Brown, R. W. (2001). Practical foundation engineering handbook. McGraw-Hill Education

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program Intended Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Identify and calculate lateral loadings to superstructures of tall buildings
(2) CLO2: Calculate the lateral loading to each structural member.
(3) CLO3: Conduct basic calculations on various foundation designs and supporting structures

No.	**Program Intended Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1	x	x									x
CLO2		x								x	x
CLO3		x								x	x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics along with natural science to represent and pursue research and establish and interpret empirical data sets by the use of quantitative and quantitative methods

(b) Understanding of fundamentals of civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction), and ability to utilize both classical and modern research methods to identify, interpret and integrate technical literature and database

(c) Ability to analyze and prepare investment projects and understand the economic, environmental, and social impact of engineering solutions

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including international and mixed gender members) as well as having good knowledge of management and organization to perform projects to grow into an appropriate and responsible leadership role

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies appear regularly

(g) Ability to communicate on content and problems of civil engineering with both professional colleagues and individuals of a wider public in foreign languages and intercultural relations efficiently, including oral, written, and others

(h) A broad education is necessary to understand the impact of engineering solutions in a global and social context, taking into account sustainability, environmental, ecological, and economic aspects

(i) Understanding of contemporary issues of national, regional, and the world with a broad vision

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and day-life situations.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction	1	Quiz 1	Lecture, Discussion	[1] Chapter 1
2, 3, 4	Wind Loadings • Static wind loadings • Dynamic wind loadings	1	Quiz 1	Lecture, Discussion	[1] Chapter 4
5,6	Earthquake Loadings: • Linear SDF systems • Inelastic SDF systems • MDF systems • Design Codes	1	Quiz 1	Lecture, Discussion	[1] Chapter 5
7, 8	Lateral resistance systems	2	Quiz 1	Lecture, Discussion	[1] Chapter 3
9-10	MIDTERM EXAM				
11-12	Sheet pile wall	3	Quiz 2	Lecture, Discussion	[2] Chapter 9
13, 14	Braced Cut	3	Quiz 2	Lecture, Discussion	[2] Chapter 10
15	Foundation design (Focus on structural designs)	3	In-class exercise	Lecture, Discussion	[2] Chapter 5& 11
16, 17	Foundation failure and Repair	3	Presentation	Lecture, Discussion	[3] Chapter 2&3
18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes/ attendance (30%)	Quiz 1 60%Pass		Quiz 2 60%Pass
Midterm exam (20%)		50%Pass	
Final exam (50%)			50%Pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Bridge Engineering

Course Code: **CE406IU**

1. General information

Course designation	*The course will introduce a modern method of highway bridge analysis, design, and evaluation based on TCVN 11823:2017 that is referred by on American Association of State Highway and Transportation Officials LRFD Bridge Design Specification, 8th edition 2017. Course topics will include types of bridges, site design overview, Highway bridge loading, bridge analysis, bridge deck slab, prestressed concrete bridge design, and substructures design.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Eng. Nguyen Dinh Hung
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, lesson, homework, discussion
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (, exercise, laboratory session, etc.): 37.5 The private study includes examination preparation, specified in hours[1]: 90
Credit points	**3 credit/4.64 ECTS**
Required and recommended prerequisites for joining the course	Construction materials, Reinforced concrete 1, Reinforced concrete 2
Parallel course	

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>The course will help the students to develop an understanding of an appreciation for basic concepts in proportioning and design of bridges in terms of aesthetics, geographical location, and functionality. It also helps the student develop an intuitive feeling about the sizing of bridge elements, i.e. developing a clear understanding of conceptual design. The students will understand the load flow mechanism and identify loads on bridges and carry out a design of bridge starting from conceptual design, selecting suitable bridge, geometry to sizing of its elements.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand basic definitions and design loads acting on bridge structures
CLO2. Determine moment and shear forces at design states acting on any sections caused by design loads.</td></tr>
<tr><td>Skills</td><td>CLO3. Design component structures of concrete bridges.</td></tr>
<tr><td>Attitude</td><td>CLO4. Be aware of design in the economy, technology, and architecture.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction to bridge engineering, historical perspective, bridge types and span length, selection of site</td><td>2</td><td>I, T</td></tr>
<tr><td>Introduction to cross-section: Geometric design, hydraulics scour, clearance</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Bridge loads, load combinations and dynamics, design lanes</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Influence lines for statically determinate structures, and Distribution factors</td><td>2</td><td>I, T, U</td></tr>
<tr><td>AASHTO prestressed girder design criteria for moment:
• Prestressed losses
• Steel and concrete stress limits
• Ultimate strength</td><td>3</td><td>I, T, U</td></tr>
<tr><td>Prestressed concrete girder design criteria for shear</td><td>2</td><td>I, T, U</td></tr>
<tr><td>1. Bridge substructure – pier
• Abutment types
• Loading
• Load combinations</td><td>1</td><td>I, T, U</td></tr>
<tr><td>2. Bridge substructure –abutment
• Abutment types
• Loading
• Load combinations</td><td>1</td><td>I, T, U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Written examination: Mid-term and Final examinations</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have GPA of more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list and Media employed</td><td><u>Textbooks:</u>
[1] American Association of State Highway and Transportation Officials LRFD Bridge Design Specification, 8th edition 2017.
[2] TCVN 11823-1:2017: Highway Bridge Design Specification, 2017
<u>Additional references:</u>
[3] Ed. Wai-Fah Chen and Lian Duan, Bridge Engineering Handbook, Boca Raton: CRC Press, 2000
[4] Ed. Wai-Fah Chen and Lian Duan, Bridge Engineering, Substructure design, 2003 by Taylor & Francis Group</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1										x	
2									x		
3										x	
4								x			

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1-2	- Introduction to bridge engineering, historical perspective, bridge types and span length, selection of site	1, 4	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1] [2]
3-4	- Introduction to cross-section: Geometric design, hydraulics scour, clearance	1, 4	Attendance Q&A Homework 1	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 1 in class	[1] [2]
5-6	- Bridge loads, load combinations and dynamics, design lanes	2, 4	Attendance Q&A Homework 2	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 2 in class	[1] [2]
7-8	- Influence lines for statically determinate structures, and Distribution factors	2, 4	Attendance Q&A Homework 3	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 3 in class,	[1] [2]
	Midterm examination		Writing		
9-11	AASHTO prestressed girder design criteria for moment: • Prestressed losses • Steel and concrete stress limits - Ultimate strength	3, 4	Attendance Q&A Homework 4	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 4&5 in class	[1] [2]
12-3	- Prestressed concrete girder design criteria for shear	3, 4	Attendance Q&A Homework 5	Reading materials before class; Doing the lecture; Discussion; and doing Quiz 6 in class	[1] [2]
14	3. Bridge substructure – pier • Pier types • Loading • Load combinations	3, 4	Attendance Q&A Homework 6	Reading materials before class; Doing the lecture; Discussion;	[1] [2]
15	4. Bridge substructure – abutment • Abutment types • Loading • Load combinations	3, 4	Attendance Q&A	Reading materials before class; Doing the lecture; Discussion;	[1] [2]
	Final examination		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including: progress assessment, mid-term exam and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4
1	Progress assessment (PA, 30%)				
1.1	Class attendance (50% of PA)				Attended 80%Pass
1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)				Participated In-class Q&A 60%Pass
1.3	Homework (25% of PA)				HW1-4, Submitted 80%Pass
2	Midterm exam (Mid, 30%)	Q1,2 60%Pass	Q1,2 60%Pass	Q3 60%Pass	Q1,2,3 60%Pass
3	Final exam (Fin, 40%)		Q1,2 60%Pass	Q1 70%Pass	Q1,2 70%Pass

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Building Information Management

Course Code: **CM310IU**

1. General information

Course designation	Face to Face
Semester(s) in which the course is taught	Semester V and/or Semester VI
Person responsible for the course	Dr. Nguyễn Văn Tiếp Dr. Trần Thanh Hà
Language	English
Relation to curriculum	Compulsory
Teaching methods	Student-centred approach
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 150 hours Contact hours (lecture, in class discussions): 45 hours Private study including examination preparation, specified in hours[1]: 105
Credit points	3

1 When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>N/A</td></tr>
<tr><td>Course objectives</td><td>The aim of the course is to provide students with the insight of Building Information Modeling and its development. The applications of BIM in different partnerships of construction industry are also provided.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Have sufficient knowedege regarding BIM fundamentals and its historical development stages
CLO2. Have acquired well-founded knowledge regarding applications of BIM with the involvements of stakeholders including owners, architects, engineers, contractors, subcontractors, and fabricators</td></tr>
<tr><td>Skills</td><td>CL03. conduct construction management research, analyze and interpret BIM data, and use engineering judgments to draw conclusions</td></tr>
<tr><td></td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The course will provide students with knowledge in terms of characteristics of Building Information Modeling and its application in construction industry.</td></tr>
<tr><td>Examination forms</td><td>Quiz
Presentation
Multiple choice questions
Case-based exams</td></tr>
</table>

Study and examination requirements

Requirements for successfully passing the module:

To pass this course, the students must:

- Achieve a composite mark of at least 50; and
- Make a satisfactory attempt at all process assessment tasks.

GRADING POLICY

Grades can be based on the following:

Assessment Component	Assessment form	Percentage %
A1. Process assessment	A1.1 Quiz	10
	A1.2 Presentation	10
	A1.3 Attendance	10
A2. Midterm assessment	A2.1 Mid-term exam	20
A3. Final assessment	A3.1 Final exam	50

COURSE POLICIES

Attendance

Regular and punctual attendance at lectures and seminars is expected in this course. University regulations indicate that if students attend less than eighty percent of scheduled classes, they may be refused final assessment. Exemptions may only be made on eligible medical grounds.

Workload

It is expected that the students will spend at least *six* hours per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where they need to complete assignments or prepare for examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. They should take the required workload into account when planning how to balance study with part-time jobs and other activities.

General Conduct and Behaviour

The students are expected to conduct themselves with consideration and respect for the needs of fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students will be asked to leave the class. The use of laptops is also encouraged during law lessons only to search for materials online. More information on student conduct is available on the university webpage.

Keeping informed

The students should take note of all announcements made in lectures or on the course's Blackboard, and another announced mean of communications. From time to time, the university will send important announcements to

	their university e-mail addresses without providing a paper copy. The students will be deemed to have received this information. **Academic honesty and plagiarism** Plagiarism is the presentation of the thoughts or work of another as one's own. Students are also reminded that careful time management is an important part of the study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items. The university regards plagiarism as a form of academic misconduct and has very strict rules regarding plagiarism. **Special consideration** Requests for special consideration (for final examination only) must be made to the Office of Academic Affairs within one week after the examination. General policy and information on special consideration can be found at the Office of Academic Affairs. Absence on the Mid-term is not allowed, or in special cases approved by Lecturer can be replaced with relevant Assignment. **Meeting up with the lecturers after classes** Students must make an appointment via emails if they want to meet up with the lecturer after classes and be on time. If there are any changes to the scheduled time, students must inform the lecturer immediately.
Reading list	**Textbooks:** 1. Rafael Sacks, Chuck Eastman, Ghang Lee, Paul Teicholz, (2018). *BIM Handbook, A guide to building information modelling for owners, managers, designers, engineers and contractors and Facility Managers*, 3rd edition, , Wiley ~~1.~~2. Holzer, D. (2015). The BIM Manager's Handbook: Guidance for professionals in architecture, engineering, and construction. West Sussex: John Wiley & Sons. ~~2.~~3. Brad Hardin and Dave McCoo (2015*). BIM and Construction Management: Proven Tools, Methods, and Workflows*, 2nd edition, Wiley. ~~3.~~4. Karen Kensek and Douglas Noble (2014). *Building Information Modelling: BIM in Current and Future Practice,* Wiley. **References:** 1. Dzambazova, T, Krygiel, E., and Demchak, G. (2009). *Introducing Revit Architecture 2010 – BIM for beginners*. New Jersey: John Wiley & Sons.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-3) and Program/Student Learning Outcomes (SLO) (1 -10) is shown in the following table:

	SLO									
CLO	a	b	c	d	e	f	g	h	i	j

1			x		x					
2			x		x					
3					x					x

3. Planned learning activities and teaching methods

Week	Topics	Learning Outcome	Assessment	Teaching and learning activities	Resources
1-2	**BIM introduction** Introduction The Current AEC Business Model BIM: New Tools and New Processes BIM as a Lifecycle Platform What Is Not BIM Technology? What Are the Benefits of BIM? What Challenges Can Be Expected? Future of Designing and Building With BIM	CL01		Lecture Class discussion	Lecture Room
3-5	**BIM tools and parametric modeling** The Evolution to Object-Based Parametric Modeling Beyond Parametric Shapes BIM Environments, Platforms, and Tools BIM Model Quality and Model Checking BIM Platforms Design Review Applications Conclusion	CL01, CL02	Quiz	Lecture Class discussion	Lecture Room
6-7	**BIM for owners and facility managers** Introduction An Owner and Facility Manager's Building Model Leading the BIM Implementation on a Project Barriers to Implementing BIM: Risks and Common Myths Issues for Owners to Consider when Adopting BIM	CL02, CL03	Quiz	Lecture Class discussion	Lecture Room

Week	Topics	Learning Outcome	Assessment	Teaching and learning activities	Resources
8-9	**BIM for architects and engineers** Introduction Scope of Design Services BIM Use in Design Processes Building Object Models and Libraries Considerations in Adoption for Design Practice	CL02, CL03	Quiz Presentation		Lecture Room
10-14	**BIM for contractors** Introduction BIM-Enabled Process Change Developing a Construction Building Information Model Using a Contractor Building Information Model 3D: Visualization and Coordination 4D: Construction Analysis and Planning 5D: Quantity Takeoff and Cost Estimating Production Planning and Control Off-site Fabrication and Modular Construction BIM in the Field Cost and Schedule Control and Other Management Functions Commissioning and Turnover	CL02, CL03	Quiz Presentation	Lecture Class discussion	Lecture Room
15	**Related Vietnamese laws and regulations** **Reviews**		Quiz	Lecture Class discussion	

4. Assessment plan

Assessment Type	CLO1	CLO2	CL03
In class evaluation (30%)	50% pass	50% pass	50% pass
Midterm examination (20%)	50% pass	50% pass	50% pass
Final examination (50%)	50% pass	50% pass	50% pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

N/A

6. **Date revised:** 06/06/2023

Ho Chi Minh City, 06/06/2023

School of Civil Engineering and Management

(Signature)

Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: ADVANCED ARTIFICIAL INTELLIGENCE IN CIVIL ENGINEERING AND CONSTRUCTION MANAGEMENT

Course Code: CE412IU

1. General information

Course designation	*The objective of this course is to provide the students with the advanced information of machine learning (ML) and analysis tools with their applications in civil engineering (CE) and construction management (CM). The course will emphasize on 1) traditional supervised algorithms such as support vector machines, 2) ensemble machine learning algorithms including bagging and boosting, 3) deep learning algorithms such as convolution neural networks, 4) fundamentals of tools used to handle large-scale data, and 5) tools used to handle ML algorithms. Fundamentals of these algorithms and tools and their applications in different problems related to CE and CM will be covered along with a course project.*
Semester(s) in which the course is taught	
Person responsible for the course	*Nguyễn Bá Quang Vinh (PhD)*
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, presentation, discussion, and assignments

<table>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>(Estimated) Total workload: 180
Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45
Private study including examination preparation, specified in hours[1]: 135</td></tr>
<tr><td>Credit points</td><td>3</td></tr>
<tr><td>Required and recommended prerequisites for joining the course</td><td>Calculus, Mechanics of Material 1, Artificial Intelligence In Civil Engineering And Construction Management</td></tr>
<tr><td>Course objectives</td><td>The aim of this course is to
- Recognizing problems in CE and CM that AI can be applied.
- Have the ability to formulate the problems.
- Analyzing and solving the problems using AI tools.
- Conducting case study to utilize AI for solving practical problems in CE or CM.
- Evaluating the impacts and limitations of different schemes</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><td>Competency level</td><td>Course learning outcome (CLO)</td></tr>
<tr><td>Knowledge</td><td>CLO1. an ability to understand the basic concepts in the field.
CLO2. an ability to apply mathematics and AI tools to solve CE and CM problems</td></tr>
<tr><td>Skill</td><td>CLO3. an ability to design and conduct experiments, to analyze and interpret CE and CM data, as well as to clean data to apply AI.
CLO4. an ability to identify, formulate, and solve CE or CM problems by means of ML.</td></tr>
<tr><td>Attitude</td><td>CLO5. Work independently and professionally.</td></tr>
</table></td></tr>
</table>

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction</td><td>1</td><td>I</td></tr>
<tr><td>Representations, measurements, data types</td><td>1</td><td>T, U</td></tr>
<tr><td>Traditional supervised algorithms ML</td><td>2</td><td>T, U</td></tr>
<tr><td>Ensemble learning</td><td>3</td><td>T, U</td></tr>
<tr><td>Deep learning</td><td>4</td><td>T, U</td></tr>
<tr><td>Case studies</td><td>1</td><td>T, U</td></tr>
<tr><td>Course project</td><td>3</td><td>T, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>

Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have GPA more than 50/100 points overall to pass this course.

</td></tr>
<tr><td>Reading list</td><td>

Textbooks:

[1] Deep Learning, Ian Goodfellow, Yoshua Bengio, and Aaron Courville, The MIT Press, 2016 (free online: http://www.deeplearningbook.org/)

[2] Hands-on Machine Learning with Scikit-Learn & Tensorflow, Aurelien Geron, O'Reilly, 2017.

Additional references:

[1] Hands-on Machine Learning with Scikit-Learn & Tensorflow, Aurelien Geron, O'Reilly, 2017.

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-5) and Program/Student Learning Outcomes (SLO) (a-j) is shown in the following table:

	PLO									
CLO	a	b	c	d	e	f	g	h	i	j
1		x								
2		x	x							
3				x	x					
4			x	x	x					
5						x	x			

Program Learning Outcome:

(a) An ability to acquire and apply the foundation knowledge in terms of natural and social science to understand principles of construction management.

(b) An ability to understand basic principles of economy management, business management models, digital transformation in construction (BIM, AI), and utilize statistical tools and techniques for economic analysis.

(c) An ability to understand and utilize mathematical tools, problem-solving methods including technical and economic tasks and problems, and professional knowledge in construction management for managing and controlling variety aspects of construction projects.

(d) An ability to identify project objectives, scope and legal documents required as well as to be able to evaluate social-economic benefits of construction project investments; conduct literature research, collect and interpret data based on the methods of academic research.

(e) An ability to grasp, analyse and evaluate methods and processes in construction management to solve complex problems across time, cost and quality management as well as apply artificial intelligence and building information modelling to improve the project management performance.

(f) An ability to use tools and techniques required for identifying, analysising, and evaluating the problems as well as thinking independently, logically, and critically in seeking appropriate solutions; to work on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

(g) An ability to communicate effectively with a range of audiences and actively work individually and as part of an international group as well as become accustomed to the responsibilities of leadership

(h) An ability to comprehensively use English language in construction management, express themselves in a logical and convincing way both orally and in writing and communicate with their specialist colleague.

(i) An ability to recognize ethics and professional responsibility in civil engineering and construction management; and have suitable communication and interaction with people.

(j) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	**Introduction**: ML in modern CE and CM, Real-world application examples. Recapitulation of linear algebra required for ML	1,2,3,4, 5	Attendance Q&A Homework 1	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 1 [2] Chapter 1
2	**Representations, measurements, data types:** Tools for data exploratory analysis and correlation analysis	1,2,3,4, 5	Attendance Q&A Homework 2	Reading materials before class;	[2] Chapter 2

				Attending the lecture; Discussion;	
3	**Traditional supervised algorithms ML:** Concept and implement in Python: - Linear Regression - Logistic regression,	1,2,3,4, 5	Attendance Q&A Homework 3	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 4
4	**Traditional supervised algorithms ML (cont.):** Concept and implement in Python: - Support vector machine, - Decision tree	1,2,3,4, 5	Attendance Q&A Homework 4	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 5, 6
5	**Ensemble learning:** Concept and implement in Python of bagging model	1,2,3,4, 5	Attendance Q&A Homework 5	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 7
6	**Ensemble learning (cont.):** Concept and implement in Python of boosting model	1,2,3,4, 5	Attendance Q&A Homework 6	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 7
7	**Ensemble learning (cont.):** Concept and implement in Python of typical Ensemble Learning models	1,2,3,4, 5	Attendance Q&A Homework 7	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 7
8	**Deep learning:** Concept and implement in Python of simple Artificial Neural Networks	1,2,3,4, 5	Attendance Q&A Homework 8	Reading materials before class; Attending the lecture; Discussion;	[1] Chapter 6
9-10	**Midterm exam**		Writing		
11	**Deep learning (cont.):** Concept and implement in Python of Multi-Layer Perceptron Neural Networks	1,2,3,4, 5	Attendance Q&A Homework 11	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 11
12	**Deep learning (cont.):**	1,2,3,4, 5	Attendance Q&A Homework 12	Reading materials before class;	[2] Chapter 13

	Concept and implement in Python of Convolutional Neural Networks			Attending the lecture; Discussion;	
13	**Deep learning (cont.):** Concept and implement in Python of Recurrent Neural Networks	1,2,3,4, 5	Attendance Q&A Homework 13	Reading materials before class; Attending the lecture; Discussion;	[2] Chapter 14
14	**Case studies:** Invited speaker for new application of ML and DL	1,2,3,4, 5	Attendance Q&A Homework 14	Reading materials before class; Attending the lecture; Discussion;	
15	**Course project**	1,2,3,4, 5	Attendance Q&A Presentation	Reading materials before class; Attending the lecture; Discussion;	
16	**Course project (cont.)**	1,2,3,4, 5	Attendance Q&A Presentation	Reading materials before class; Attending the lecture; Discussion;	
17	**Course project (cont.)**	1,2,3,4, 5	Attendance Q&A Presentation		
18	**Final exam**		Writing		

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	Assessment Type (% contribute to GPA)	CLO1	CLO2	CLO3	CLO4	CLO5
1	**Progress Assessment (PA, 40%)**					
1.1	Class attendance (25% of PA)					Attended 80%Pass

1.2	In-class activity: Discussion and doing Quizzes in class (25% of PA)					Participated in class Q&A 60%Pass
1.3	Homeworks (50% of PA)			HW1-14, Submitted 80%Pass	HW1-14, Submitted 80%Pass	HW1-14, Submitted 80%Pass
2	**Midterm exam (Mid, 30%)**	Q1-5, 60%Pass	Q1-5, 60%Pass		Q1-5, 60%Pass	
3	**Final exam (Fin, 30%)**	Q1-5, 60%Pass	Q1-5, 60%Pass		Q1-5, 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023
Dean of School

Dr. Nguyễn Hoài Nghĩa

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: GIS Applications in Civil Engineering

Course Code: **CE413IU**

1. General information

Course designation	CE413IU is a practical GIS course with particular reference to applications in Civil Engineering. This course does not require prior knowledge of GIS. The first part of the course will include introductory concepts and will cover basic topics in GIS including data types and common GIS processing and analysis tools, thematic mapping, etc. In the second part of the course, GIS procedures and techniques that are relevant to Civil Engineering will be covered through a series of case studies and exercises.
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Cabaltica Doliente Angeli, *MSc.*
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, class discussion, computer exercises
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload:135 Contact hours (lecture, class discussion, computer exercise): 45 Private study including examination preparation, specified in hours[1]: 90

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Credit points	3
Required and recommended prerequisites for joining the course	Recommended: CE307IU Surveying
Parallel course	
Course objectives	This course aims to: - introduce students to GIS and its applications in civil engineering - make students learn spatial data handling, analysis and presentation
Course learning outcomes	Upon successful completion of this course, students will be able to:

Competency level	Course learning outcome (CLO)
Knowledge	**CLO1. create, acquire, and display spatial data GIS datasets**
Skill	**CLO2. use GIS tools to analyse spatial data** **CLO3. perform modelling, analysis and presentation for different GIS applications in civil engineering**
Attitude	

Content

The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (2 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	Weight	Level
1. Basic introduction to GIS concepts	**1**	**I,T**
2. Projections and Coordinate Systems	**1**	**I,T,U**
3. Common GIS data types	**1**	**I, T, U**
4. Symbolizing features	**1**	**I, T, U**
5. Acquiring spatial data, Digitization	**1**	**I, T, U**
6. Spatial Operations	**2**	**I, T, U**
7. Spatial Analysis	**2**	**I, T, U**
8. Map making	**1**	**I, T, U**
9. Case Studies & Exercises	**5**	**U**

Examination forms	Written examinations: Midterm and Final Exams Type: Constructed response test
Study and examination requirements	**Attendance:** Students are expected to attend the lectures every week. University regulations indicate that if students attend less than 80% of scheduled classes they may be refused final assessment. **Computer exercises:** are given regularly for the students to understand the concepts better and to improve their problem-solving skills. **Examinations:** A midterm exam will be given halfway through the semester and a final exam at the end. Students must have an overall score of at least 50/100 points to pass this course.
Reading list	References [1] Bernhardsen, Tor. *Geographic information systems: An introduction*. New York: John Wiley & Sons, 2001. [2] Paul A. Longley, Michael F. Goodchild, David J. Mauire, David W. Rhind. *Geographic Information Systems and Science*, John Wiley & Sons, 2005.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Learning Outcomes (ILO) is shown in the following table:

CLO	**ILO**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1							**X**				
2										**X**	
3						**X**	**X**			**X**	

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Basic introduction to GIS concepts	01	Attendance, Q&A	Lecture, class discussion, computer practice	[1], [2]
2	Projections and Coordinate Systems	01	Attendance, Q&A	Lecture, class discussion, computer practice	[1], [2]
3	Common GIS data types	01	Attendance, Q&A	Lecture, class discussion, computer practice	[1], [2]
4	Symbolizing features	01	Attendance, Q&A, Exercise 1	Lecture, class discussion, computer practice	[1], [2]
5	Acquiring spatial data, Digitization	01	Attendance, Q&A, Exercise 2	Lecture, class discussion, computer practice	[1], [2]
6-7	Spatial Operations	02	Attendance, Q&A, Exercise 3	Lecture, class discussion, computer practice	[1], [2]
8	Spatial Analysis	02	Attendance, Q&A,	Lecture, class discussion, computer practice	[1], [2]
9-10	Midterm				
11	Spatial Analysis	02	Attendance, Q&A, Exercise 4	Lecture, class discussion, computer practice	[1], [2]

12	Map making	03	Attendance, Q&A, Exercise 5	Lecture, class discussion, computer practice	[1], [2]
13-17	Case Studies & Exercises	03	Attendance, Q&A, Exercise 6-8	Lecture, class discussion, computer practice	
18	Review				
19-20	Final exam				

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No.	Assessment Type	CLO1	CLO2	CLO3
1	**Progress Assessment (30%)**			
1.1	Class Attendance (30% of PA)			
1.2	In-class activities: Participation in discussion, quizzes; Other activities: homeworks, group exercise (70% of PA)	Ex1, Ex2, Ex5 60%Pass	Ex3, Ex4 60%Pass	Ex6, Ex7, Ex8 60%Pass
2	**Midterm Exam (30%)**	Q1 60%Pass		
3	**Final Exam (40%)**	Q1 60%Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

- *None*

6. Date revised: June 06 2023

Ho Chi Minh City, June 12, 2023
Dean of School of Civil Engineering and Management

Dr. Nguyen Hoai Nghia

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Construction Project Management

Course Code: **CE414IU**

1. General Information

Module designation	**CE414IU – Construction Project Management** In this course, students will study roles, responsibilities, and authority of project participants. They also study how to manage project participants, material, safety, waste, and environment. The jobsite layout design and control are also a part of the course.
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Nguyen, Hoai Nghia, MSc. Nguyen, Pham Duy Phương
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, presentation, and assignments.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 135 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 Private study including examination preparation, specified in hours[1]: 90
Credit points	3
Required and recommended prerequisites for joining the module	None
Module objectives/intended learning outcomes	**Overall objectives** are to equip IU students with knowledge of jobsite management including jobsite layout design and control; labor management, material management, safety management,

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td></td><td>waste management, and environment management; and meeting skills.

Students who complete the course will be able to perform the following tasks:

(1) Having knowledge of project participants' roles, responsibilities, and authority
(2) Having enhanced ability to design and control jobsite layout
(3) Manage labor, material, safety, waste, and environment.</td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Construction project team</td><td>2</td><td>I</td></tr>
<tr><td>Jobsite layout and control</td><td>3</td><td>T, U</td></tr>
<tr><td>Meeting, negotiations, and dispute resolution</td><td>2</td><td>T</td></tr>
<tr><td>Jobsite labor relations and control</td><td>2</td><td>T</td></tr>
<tr><td>Material management</td><td>1</td><td>T</td></tr>
<tr><td>Personnel and safety management</td><td>3</td><td>T</td></tr>
<tr><td>Waste and environmental management and sustainable construction practices</td><td>2</td><td>T</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Constructed-response test</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this module.</td></tr>
<tr><td>Reading list</td><td>Textbook:

[1] Minks, W.R. and Johnston, H. (2017). Construction Jobsite Management, 4th ed. Boston: Cengage Learning.

[2] Thomas, H.R. and Ellis, R.D. Jr. (2017). Construction Site Management and Labor Productivity Improvement, Virginia: ASCE Press.

References:</td></tr>
</table>

	[1] Howarth, T. and Greenwood, D. (2018). C*onstruction Quality Management – Principle and Practice*, 2nd ed. New York: Routledge. [2] Fisk, E.R. and Reynolds, W.D. (2014). *Construction Project Administration,* 10th ed. New Jersey: Pearson

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-3) and Program/Student Learning Outcomes (a-j) is shown in the following table:

(1) CLO1: Having knowledge of project participants' roles, responsibilities, and authority
(2) CLO2: Having enhanced ability to design and control jobsite layout
(3) CLO3: Manage labor, material, safety, waste, and environment.

No.	**Program Learning Outcome**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1		x									
CLO2		x				x					
CLO3					X	x					

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics and natural sciences to represent it in pursuing and establishing research by the use of quantitative and quantitative methods.

(b) Understanding the fundamentals of the civil engineering field (e.g., construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction)

(c) Ability to analyze and prepare investment projects and understand their economic, environmental, and social impacts

(d) Awareness of professional and ethical responsibilities of a civil engineer; ability to make rational decisions based on an ethical argumentation, think critically in order to find innovative and effective solutions for interdivision aqualitative and quantitative problems.

(e) Ability to function as a member of a multidisciplinary team (including multi-national and mixed-gender teams) as well as having good knowledge of management and organization to be able to take on leadership roles

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies emerge regularly, as well as take part in developing new technologies by engaging in research works having the ability to interpret and use empirical datasets, integrate technical literature and databases to solve specific civil engineering problems or fill knowledge gaps.

(g) Ability to communicate matters related to civil engineering to colleagues in the same profession or the general public, effectively using oral, written, and other forms of communication.

(h) A broad education necessary to understand the impacts of civil engineering solutions in a global and social context

(i) A broad understanding of contemporary issues in civil engineering in the national, regional, and global level

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and daily life situations.

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	**Construction project team** Roles, responsibilities, and authority of project participants Traditional contract project delivery system Construction management delivery system Design-Build delivery system	L.O. 1	Quiz1	Lecture Class discussion	[1] Chapter 1
3-5	**Jobsite layout and control** Material Handling Labor productivity Equipment management Site constraints Jobsite security Organizing jobsite layout	L.O. 2	Quiz2	Lecture Class discussion	[1] Chapter 2
6-7	**Meeting, negotiations, and dispute resolution** Partnering meeting and workshop session Contractor's preconstruction planning and organization meeting Project meeting Post project review and evaluation Negotiations Dispute resolution	L.O. 1	Quiz3 Presentation	Lecture Class discussion	[1] Chapter 3, 4

Week	Topic	CLO	Assessments	Learning activities	Resources
8	**Jobsite labor relations and control** Labor productivity Jobsite labor organization	L.O. 3	Quiz4 Presentation	Lecture Class discussion	[1] Chapter 7
9-10	MIDTERM EXAM				
9	**Jobsite labor relations and control** Labor agreements Supervision and control of labor	L.O. 3	Quiz 5	Lecture Class discussion	[1] Chapter 8
10	**Material management** Material management plans Material procurement Delivery and receiving Storing Distribution	L.O. 3	Quiz 6	Lecture Class discussion	[1] Chapter 9
11-13	**Personnel and safety management** Safety policy Accident prevention Substance abuse Personal protective equipment Hazardous materials communication Safety communication Accident reporting and investigation Environmental protection and safety	L.O. 3	Quiz7	Lecture Class discussion	[1] Chapter 10
14-15	**Waste and environmental management and sustainable construction practices** Jobsite environmental management plans Waste management in construction phase Storm water management Indoor air quality and requirements during construction	L.O. 3	Quiz 8 Presentation 2	Lecture Class discussion	[1] Chapter 11

Week	Topic	CLO	Assessments	Learning activities	Resources
16, 17	**The Economy and construction** Measuring economic activity From circular flow model to reality Manipulating the level of economic activity Supply-side economic Inflation and how it is measured Causes of inflation Cures for inflation	3	Quiz 9	Lecture Class discussion	[1] Chapter 12
18-19	FINAL EXAM				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3
In-class exercises/quizzes (10%)	Qz1, Qz3 50%Pass	Qz2 50%Pass	Qz4 – Qz9 50%Pass
Homework exercises/ Presentation (20%)		Presentation 1 50%Pass	Presentation 1 50%Pass
Midterm exam (20%)	50% Pass	50% Pass	
Final exam (50%)		50% Pass	50% Pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: Principles of Marketing

Course Code: **BA003IU**

1. General information

Course designation	*The course named "Principles of Marketing" provides the students with necessary information on the basic concepts of marketing and its principles. It focuses on the understanding of Market Demand and Customers Behaviors as well as Marketing strategies developed by firms in terms of Pricing, Product, Place, Promotion, etc. The course also mentions various methods to market research and environmental factors that affects the marketing activities.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Ms. Dang Thi Uyen Thao
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, projects, quizzes, examinations.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours: 38 (15 classes, 1 class = 3 periods, 1 period = 50 minutes) Private study including examination preparation, specified in hours: 90
Credit points	**03 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None

<table>
<tr><td>Course objectives</td><td>This course is an introduction to the field of marketing. In this course, the students will start to examine the most basic concepts in marketing – customer needs, wants, and demand to understand the marketplace. Next, main steps in designing a customer-driven marketing strategy are also explored. This course specially focuses on constructing an integrated marketing program that delivers superior value by using the marketing mix (the four Ps) – product/service design, pricing, distribution, and promotion. At last, other new contents of modern marketing, such as customer relationship management and partner relationship management are also briefly mentioned.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><td>Competency level</td><td>Course learning outcome (CLO)</td></tr>
<tr><td>Knowledge</td><td>CLO1. Understand marketing terminology and concepts and the principles used in developing marketing programs in a firm.
CLO6. Understand basic characteristic of B2B and B2C marketing.
CLO7. Understand the differences of goods and service characteristic in marketing</td></tr>
<tr><td>Skill</td><td>CLO2. Identify wants, environmental factors and personal factors that shape marketing activities for certain target markets
CLO3.Demonstrate knowledge of the individual components of a marketing mix
CLO4.Demonstrate knowledge of key business communication strategies within the marketing field
CLO5. Identify the organizational processes involved in the planning, implementation and control of marketing activities</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Chapter 1: Creating and Capturing Customer Value</td><td>1</td><td>I, T</td></tr>
<tr><td>Chapter 2: Company and Marketing Strategy- Partnering to Build Customer Engagement, Value, and Relationships</td><td>1</td><td>I, T</td></tr>
<tr><td>Chapter 3: Analysing the marketing environment</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Chapter 5: Understanding consumer buyer behaviour</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 6: Business Markets and Business Buying Behavior</td><td>1</td><td>I, T</td></tr>
<tr><td>Chapter 7: Customer-Driven Marketing Strategy: Creating Value for Target Customers</td><td>2</td><td>I, T, U</td></tr>
<tr><td>Chapter 8: Product, Services, and Brands: Building Customer Value</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Chapter 10: Pricing: Understanding and Capturing Customer Value</td><td>1</td><td>I, T</td></tr>
<tr><td>Chapter 12: Marketing Channels: Delivering Customer Value</td><td>1</td><td>I, T</td></tr>
<tr><td>Chapter 14: Communicating Customer Value: Integrated Marketing Communications Strategy</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Chapter 15: Advertising and Public Relations</td><td>1</td><td>I, T, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Essay questions, case studies</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list</td><td>[1] Textbook: Philip Kotler and Gary Armstrong (2015), Principles of Marketing, 16th Edition, Prentice Hall, Upper Saddle River, New Jersey

[2] Slides and other materials are provided in the Blackboard</td></tr>
</table>

2. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Chapter 1: Creating and Capturing Customer Value	1	Individual Writing Assignment	Lecture, Discussion	[1], [2]
2	Chapter 2: Company and Marketing Strategy- Partnering to Build Customer Engagement, Value, and Relationships	1	Individual Writing Assignment	Lecture, Discussion	[1], [2]
3	Chapter 3: Analysing the marketing environment	2	Group assignment	Lecture, Discussion	[1], [2]
4, 5	Chapter 5: Understanding consumer buyer behaviour	2	Case Analysis	Lecture, Discussion	[1], [2]
6	Chapter 6: Business Markets and Business Buying Behavior	6	Quizzes	Lecture, Discussion	[1], [2]
7, 8	Chapter 7: Customer-Driven Marketing Strategy: Creating Value for Target Customers	1, 5	Case Analysis	Lecture, Discussion	[1], [2]
9	Midterm				
10, 11	Chapter 8: Product, Services, and Brands: Building Customer Value	3, 7	Case Analysis	Lecture, Discussion	[1], [2]
12	Chapter 10: Pricing: Understanding and Capturing Customer Value	3	Individual Writing Assignment	Lecture, Discussion	[1], [2]
13	Chapter 12: Marketing Channels: Delivering Customer Value	3	Quizzes	Lecture, Discussion	[1], [2]
14	Chapter 14: Communicating Customer Value: Integrated Marketing Communications Strategy	3, 4	Individual Writing Assignment	Lecture, Discussion	[1], [2]
15	Chapter 15: Advertising and Public Relations	3, 4	Group assignment	Lecture, Discussion	[1], [2]
16	Revision				
17	Final exam				

3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
Quizzes (5%)			Qz1 60%Pass			Qz2 60%Pass	
Individual Writing Assignment (5%)	Asgmt 1 60%Pass		Asgmt 2 60%Passs	Asgmt 3 60%Passs			
Case Analysis (5%)							
Class participation and preparation (5%)							
Group assignment (10%)		60%Pass	60%Pass	60%Pass			

Mid-term Exam (30%)	Q1 50%Pass	Q1 50%Pass			Q2 50%Pass	Q3 60%Pass	
Final exam (40%)			Q1 50%Pass	Q2 50%Pass			Q3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

4. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**

Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

5. Date revised: July 17th, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: Business Communication

Course Code: BA006IU

1. General information

Course designation	*This course is designed to provide students with a strong foundation in communicating at the workplace, focusing on: (1) communicating in the digital-age workplace, (2) developing business writing skills, (3) embracing professionalism at work, (2) developing business presentation skills, (4) preparing for sucessful job search, resumes, cover letters, and job interviews.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	MSc. Pham Thanh Huyen
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, presentation.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (lecture, exercise, laboratory session, etc.): 37.5 Self-study includes examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>None</td></tr>
<tr><td>Course objectives</td><td>This course is designed to give students a comprehensive view of communication, its scope and importance in business, and the role of communication in establishing a favourable outside the firm environment, as well as an effective internal communications program. The various types of business communication media are covered. This course also develops an awareness of the importance of succinct written expression to modern business communication.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Identify the role and process of communication as a means of achieving organizational objectives.
CLO2. Define communication and explain communication barriers.
CLO3. Identify the different types of writing performed by business professionals in each of the various functional areas of business.</td></tr>
<tr><td>Skill</td><td>CLO4. Strengthen perception skills by embracing professionalism; by recognizing nonverbal responses; by improving listening skill; and by analyzing personal value systems; role and status, and cultural differences in organizational communication.
CLO5. Apply a clear, concise, convincing, and correct style of writing for business purposes.
CLO6. Complete an accurate, complete resume and cover letter.</td></tr>
<tr><td>Attitude</td><td>CLO7. Conduct well-prepared interviews and complete follow-up employment correspondence.
CLO8. Demonstrate the ability to present effective oral reports.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Communicating in the Digital-Age Workplace	1	I
Professionalism at Work: Business Etiquette, Ethics, Teamwork, and Meetings	1	T
Business Presentations	1	T, U
Planning Business Messages	0.5	I, T
Organizing and Drafting Business Messages	0.5	I, T
Revising Business Messages	0.5	I, T
Short Workplace Messages and Digital Media	0.5	I, T
Positive Messages	1	T, U
Negative Messages	1	T, U
Persuasive and Sales Messages	1	T, U
Informal Reports	1	I, T
Proposals and Formal Reports	1	I, T
The Job Search and Resumes in the Digital Age	1	T, U
Interviewing and Following Up	1	T, U

</td></tr>
<tr><td>Examination forms</td><td>Short-answer questions, Messages writing questions</td></tr>
<tr><td>Study and examination requirements</td><td>

. Attend more than 80% of class meetings in order to take the final exam (Your name will be called randomly to answer questions during class disscusion. If you do not show up to answer the question, you will be marked as absent for that class.)

. Show respect to the instructor and classmates.

. Actively participate in class activities

. Fulfil tasks given by instructor after class

. Access Blackboard for announcements, assignments, and materials of the course

</td></tr>
<tr><td>Reading list</td><td>

Main textbooks:

Mary Ellen Guffey & Dana Loewy, Essentials of Business Communication, 11th edition, Thompson South Western.

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1	x	x		x	x	
2	x	x			x	
3	x	x				
4	x	x	x	x		
5	x	x	x			
6				x	x	x
7				x		x
8	x	x			x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Chapter 1: Communicating in the Digital-Age Workplace	1,2		Lecture	Textbook, Blackboard
2	Chapter 11: Professionalism at Work: Business Etiquette, Ethics, Teamwork, and Meetings	4	Assignment 1	Lecture	Textbook, Blackboard
3	Chapter 12: Business Presentations	8		Lecture	Textbook, Blackboard
4	Chapter 2: Planning Business Messages Chapter 3: Organizing and Drafting Business Messages	3, 5		Lecture	Textbook, Blackboard
5	Chapter 4: Revising Business Messages Chapter 5: Short Workplace Messages and Digital Media	3,5		Lecture	Textbook, Blackboard
6	Chapter 6: Positive Messages	3,5	Assignment 2	Lecture	Textbook, Blackboard
7	Chapter 7: Negative Messages	3,5		Lecture	Textbook, Blackboard
8	Midterm Review	1,2,3,4, 5,8	Presentation	Tutorial	
9	Midterm		Examination		
10	Chapter 8: Persuasive and Sales Messages	3,5	Assignment 3 Presentation	Lecture	Textbook, Blackboard

11	Chapter 9: Informal Reports	3,5	Presentation	Lecture	Textbook, Blackboard
12	Chapter 10: Proposals and Formal Reports	3,5	Presentation	Lecture	Textbook, Blackboard
13	Chapter 13: The Job Search and Resumes in the Digital Age	6	Presentation	Lecture	Textbook, Blackboard
14	Chapter 14: Interviewing and Following Up	7	Presentation	Lecture	Textbook, Blackboard
15	Group Presentation	1,2,4,8	Presentation		
16	Group Presentation	1,2,4,8	Presentation		
17	Final exam		Examination		

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**	**CLO7**	**CLO8**
Assignments (50%)	A1 70%Pass	A1 70%Pass	A2 70%Pass	A3 70%Pass	A2, 3 70%Pass	A1 70%Pass		Presentation 70%Pass
Midterm exam (20%)	Q1 60%Pass	Q1 60%Pass	Q3 60%Pass	Q2 60%Pass	Q3 60%Pass			
Final exam (30%)				Q1 60%Pass	Q3 60%Pass	Q2 60%Pass	Q2 60%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)
6. Date revised: Jully 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: Business Ethics

Course Code: **BA020IU**

Semester … – Academic Year 202…-202…

1. General information

Course description	This course introduces students to the relevance and importance of ethics and social responsibility in business. It aims to increase student's awareness and understanding of ethical issues in business and to provide them with useful conceptual tools to guide analysis and decisions. After the completion of the course, students are expected to identify, think critically, and suggest solutions to ethical issues encountered at the individual, organizational, and societal levels.
Semester(s) in which the course is taught	1, 2
Lecturer	
Language	English
Relation to curriculum	R (Reinforced), M (Mastered) → focus on Comprehension, Application, and Analysis in the Bloom taxonomy (levels 2, 3, 4).
Teaching methods	Lecture, presentation, discussion
Workload (incl. contact hours, self-study hours)	Total workload: 127.5 hours (estimated) Teaching hours (including lectures, in-class discussions, assignments, quizzes, and presentations): 37.5 Self-study (including take-home assignments, individual or teamwork after class hours, and preparation for examinations): 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None

<table>
<tr><td>Course objectives</td><td>The aim of the course is to communicate theoretical and practical insights and developments in the fields of business ethics and sustainable business. Students learn the characteristics of ethical issues in business. They become acquainted with the theoretical basis of business ethics: stakeholder-theory, theories of responsibility and normative ethical theory, intercultural ethics; as well as with theories and practices on the implementation of business ethics.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge: Bloom 4 - Analyze
Skill: Oral communication</td><td>CLO1. Analyze ethical issues and corporate social responsibility in oral form (M)</td></tr>
<tr><td>Knowledge: Bloom 2 - Understand
Skill: Written communication</td><td>CLO2. Recognize ethical issues that arise in business and social situations in written form (R)</td></tr>
<tr><td>Knowledge: Bloom 3 – Apply
Skill: Oral and written communication</td><td>CLO3. Employ various ethical theories and ethical concepts to interpret actions taken in business ethics (R)</td></tr>
<tr><td>Attitude (Affective: Bloom 3)
Skill: Oral and written communication</td><td>CLO4. Propose appropriate ethical behaviors in business and society context. (M)</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)</td></tr>
<tr><td>Examination forms</td><td>Short questions; essay</td></tr>
</table>

<table>
<tr>
<td>Study and examination requirements</td>
<td>
Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Understanding Ethics</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Defining Business Ethics</td><td>1</td><td>I, T</td></tr>
<tr><td>Organizational Ethics</td><td>1</td><td>I, T</td></tr>
<tr><td>Corporate Social Responsibility</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Corporate Governance</td><td>1</td><td>I, T</td></tr>
<tr><td>The Role of Government</td><td>1</td><td>I, T</td></tr>
<tr><td>Blowing the Whistle</td><td>1</td><td>I, T</td></tr>
<tr><td>Ethics and Technology</td><td>1</td><td>I, T</td></tr>
<tr><td>Ethics and Globalization</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Making It Stick:
Doing What’s Right in a Competitive Market</td><td>1</td><td>I, T</td></tr>
<tr><td>Workshop “Ethical considerations in reality”</td><td>1</td><td>T, U</td></tr>
</table>
</td>
</tr>
<tr>
<td>Reading list</td>
<td>
Main textbook:

G Ghillyer, A. W. (2021) Business Ethics Now. 6th edn. New York: McGraw-Hill Education.

Reference book:

Ferrell, O. C., Fraedrich, J. and Ferrell, L. (2022) Business Ethics: Ethical Decision Making and Cases. 13th edn. Cengage.
</td>
</tr>
</table>

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-9) is shown in the following table:

	ILO								
CLO	1	2	3	4	5	6	7	8	9
1				M					
2				R					
3				R					
4					M	R			

3. Planned learning activities and teaching methods

Week	Topic	Reading	CLO	Learning activities	Sources
1	Class introduction and Group registration		1, 2, 3, 4		(Ghillyer, 2021) (Ferrell, Fraedrich and Ferrell, 2022)
2	Understanding Ethics	Textbook – Chapter 1		Lecture, Discussion	
3	Defining Business Ethics	Textbook – Chapter 2		Lecture, Presentation, Discussion	
4	Organizational Ethics	Textbook – Chapter 3		Lecture, Presentation, Discussion	
5	Corporate Social Responsibility	Textbook – Chapter 4		Lecture, Discussion	
6	Corporate Governance	Textbook – Chapter 5		Lecture, Presentation, Discussion	
7	Workshop "Ethical considerations in reality"			Discussion	
8	Review for Midterm Exam				
9 - 10	***Midterm exam***	***No class***			
11	The Role of Government	Textbook – Chapter 6		Lecture, Presentation, Discussion	
12	Blowing the Whistle	Textbook – Chapter 7		Lecture, Presentation, Discussion	
13	Ethics and Technology	Textbook – Chapter 8		Lecture, Presentation, Discussion	
14	Ethics and Globalization	Textbook – Chapter 9		Lecture, Discussion	
15	Making It Stick: Doing What's Right in a Competitive Market	Textbook – Chapter 10		Lecture, Presentation, Discussion	
16	Workshop "Ethical considerations in reality"			Discussion	
17	Review for Final Exam				
18	Reserved week				
19-20	***Final exam***	***No Class***			

4. Assessment plan

Assessment Type	Weight	CLO1	CLO2	CLO3	CLO4
Attendance, class participation, group presentation, group assignments, individual assignments	30%	70% Pass	70% Pass	70% Pass	70% Pass
Midterm exam	30%	70% Pass	70% Pass	70% Pass	70% Pass
Final exam	40%	70% Pass	70% Pass	70% Pass	70% Pass

Note: %Pass: Target that % of students having scores achieving the CLO.

5. Rubrics

	Levels of quality			
Criteria	**Inadequate (0 – 39)**	**Adequate (40 – 69)**	**Good (70 – 84)**	**Excellent (85 – 100)**
Ability to identify and explain ethical issues and/or affected stakeholders *(30%)*	Central ethical issues/involved stakeholders are not defined appropriately. Misunderstanding of issues related to the question.	Central ethical issues/some involved stakeholders are identified but not clearly explained.	Central ethical issues/ various involved stakeholders are identified and explained clearly.	Central ethical issues/all potential involved stakeholders are identified and explained completely.
Application of ethical principles *(30%)*	Missing or inappropriate use of ethical principles or ethical concepts.	Some relevant ethical principles are employed, which link to the question. But the discussion does not demonstrate multiple perspectives of a particular ethical principle when applied in a case.	Some relevant ethical principles are employed, which link to the question. The discussion demonstrates multiple perspectives of a particular ethical principle when applied in a case.	All relevant ethical principles are employed. All aspects of ethical principles are explicitly completely articulated.

Proposals for ethical issues and sustainability ***(30%)***	An incomplete analysis; possible solutions are not explored fully. Analysis was not carried out sufficiently and is fundamentally flawed. Solutions are illogical.	Acceptable actions are stated but may not be clear or complete. Solutions and ethical analysis are logical but still be superficial at some level.	Possible solutions are explored and articulated clearly. Solutions and ethical analysis are logical and clearly presented.	Possible and creative actions that stay within acceptable ethical boundaries have been presented in detail. Solutions and ethical analysis are articulated at a level that demonstrate extensive reflection and insight.
Presentation of ideas (coherent organization/structure in oral and/or written form, grammar, punctuation, word-use effectiveness) ***(10%)***	Carelessly focus on presenting information, organization is not logical, many spelling and grammar mistakes.	Organization is sometimes not logical or not coherent. May contain a few spelling and grammar mistakes.	Presentation of ideas is clear, coherent, and logical. Rarely found spelling or grammar mistakes.	Presentation of ideas is extremely clear, coherent, and logical. There is almost no spelling or grammar mistakes while the word use is fluent and effective.

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: INTRODUCTION TO BUSINESS ADMINISTRATION

Course Code: BA115IU

1. General information

Course designation	*Employing the interactive learning and problem-based teaching approach, this course emphasises the interaction between lecturers and students. The lecture materials will be uploaded in Blackboard to help the students to preview the materials and to concentrate on listening and critical thinking during the lecture. This will help students to interact with the lecturer during the classroom. The sessions for presentations and discussions comprise company case studies as well as answering some theoretical and conceptual questions, which help the students to see how the concepts are applied in the real business context. Students will present the case to the class and discuss with the peers. Guest speakers are invited to talk about selected topics or real life experiences.*
Semester(s) in which the course is taught	**7, 8**
Person responsible for the course	
Language	**English**
Relation to curriculum	***Elective***
Teaching methods	**Lecture, discussion, and assignments.**

Workload (incl. contact hours, self-study hours)	**Total workload: 127.5 (Estimated)** **Contact hours:** **- lecture: 28.5** **- Discussion: 9** **Private study including examination preparation, specified in hours[1]: 90**
Credit points	**3 credits/4.64ECTS**
Required and recommended prerequisites for joining the course	**No**
Course objectives	*This course is designed to provide the student with the below objectives* *- To provide knowledge of functional areas of business management and the integration among them.* *- To give students a strong awareness of global issues, including an understanding of approaches to business ethics, business environment and multinational issues.* *- To develop students' basic research, analysis, writing, teaming, and presentation skills.* *- To develop students' applied critical thinking skills and communication through the development of a portfolio of a firm in an industry in which they are interested.*

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course learning outcomes	**Upon the successful completion of this course students will be able to:**

Competency level	Course learning outcome (CLO)
Knowledge	**CLO1.** *Explain how rapidly the business world is changing and the importance of life long learning***.** **CLO2.** *Explain how global issues influence business entities.* **CLO3.** *Understanding forms of business of ownership***.** **CLO4.** *Develop a high level of familiarity with four function of business management.* **CLO5.** *Understaing basic characteristic of production and operation management.* **CLO6.** *Explain theories about motivation.* **CLO7.** *Understanding basic characteristic of HRM in an organisation.* **CLO8.** *Understanding basic characteristic of marketing mix.*

Content	***The description of the contents should clearly indicate the weighting of the content and the level.*** **Weight: lecture session (3 hours)** **Teaching levels: I (Introduce); T (teach); U (Utilize)**

Topic	Weight	Level
Classification of structures Managing Within The Dynamic Business Environment	**1**	**T, U**
How Economics Affects Business	**1**	**T, U**
Choosing a Form of Business Ownership	**1**	**T, U**
Management, Leadership, And Employee Empowerment	**1**	**T, U**
Adapting Organizations To Today's Markets	**1**	**T, U**
Producing World-Class Goods and Services	**1**	**T, U**
Motivating Employees And Building Self-Managed Teams	**1**	**T, U**
HRM: Finding and Keeping the Best Employees	**1**	**T, U**
Marketing: Building Customer Relationships	**1**	**T, U**
Developing and Pricing Products and Services	**1**	**T, U**
Distributing Products Quickly and Efficiently	**1**	**T, U**
Using Effective Promotional Techniques	**1**	**T, U**

Examination forms	**Constructed-response test**

Study and examination requirements	*1. Attend more than 80% of contact hours in order to be accepted to the final examination* *2. Actively participate in class activities.* *3. Fulfill tasks given by instructor after class.* *4. Use their own laptop in class only for learning purpose.* *5. Read the textbook in advance.* *6. Access the Blackboard for up-to-date information and material of the course, for online supports from teachers and other students and for practicing and assessment.*
Reading list	**Textbooks:** **[1] William G. Nickels, James M. McHugh, Susan M.McHugh – Understanding Business, 11th edition , McGraw-Hill**

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									x
2	x	x									x
3		x								x	x
4		x								x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	**Managing Within The Dynamic Business Environment: Taking Risks And Making Profits**	**1, 2**		**Lecture, Discussion**	**[1] Chapter 1**
2	**How Economics Affects Business: the Creation and Distribution of Wealth**	**1, 2**	**Short essay 1**	**Lecture, Discussion**	**[1] Chapter 2**
3	**Choosing a Form of Business Ownership**	**3**		**Lecture, Discussion**	**[1] Chapter 5**
4	**Management, Leadership, And Employee Empowerment**	**4**	**Short essay 2**	**Lecture, Discussion**	**[1] Chapter 7**
5	**Adapting Organizations To Today's Markets**	**4**		**Lecture, Discussion**	**[1] Chapter 8**
6	**Review for midterm**	**1, 2, 3, 4, 5**		**Lecture, Discussion**	

7-8	**Midterm**				
9	**Producing World-Class Goods and Services**	**5**		**Lecture, Discussion**	**[1] Chapter 9**
10	**Motivating Employees And Building Self-Managed Teams**	**6**		**Lecture, Discussion**	**[1] Chapter 10**
11	**HRM: Finding and Keeping the Best Employees**	**7**		**Lecture, Discussion**	**[1] Chapter 11**
12	**Marketing: Building Customer Relationships**	**8**		**Lecture, Discussion**	**[1] Chapter 13**
13	**Developing and Pricing Products and Services**	**8**		**Lecture, Discussion**	**[1] Chapter 14**
14	**Distributing Products Quickly and Efficiently**	**7**		**Lecture, Discussion**	**[1] Chapter 15**
15	**Using Effective Promotional Techniques**	**7**		**Lecture, Discussion**	**[1] Chapter 16**
16	**COURSE REVIEW**	**1-7**		**Lecture, Discussion**	
17	**GROUP PRESENTATION AND REPORT SUBMISSION**	**1-7**			
18-19	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7	CLO8
In-class exercises/quizzes/attendance (30%)	Essays 60%Pass	Essays 60%Pass	Report 60%Pass	Essays 60%Pass	Report 60%Pass	Report 60%Pass	Report 60%Pass	Report 60%Pass
Midterm exam (30%)			50%Pass		50%Pass	50%Pass	50%Pass	
Final exam (40%)	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass	50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. **Date revised: 04/11/2022**

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Civil Engineering and Management**

COURSE SYLLABUS

Course Name: INTRODUCTION TO SOCIOLOGY

Course Code: BA116IU

1. General information

Course designation	*Introduction to the Social Sciences is designed to introduce the student to the broad and exciting field of the social sciences which embrances a diverse mixture of disciplines of anthropology, sociology, psychology, economics, history, geography, and political science, ect. The course will focus on the field of sociology and its key themes as they relate to the study of management and business as well as modern society. This facilitates the development of awareness of the language and methodology associated with the study of the social sciences. This course will utilize an interdisciplinary approach to study and understand human behavior and various contemporary social issues.*
Semester(s) in which the course is taught	**7, 8**
Person responsible for the course	
Language	**English**
Relation to curriculum	***Elective***
Teaching methods	**Lecture, discussion, and assignments.**

<table>
<tr><td>Workload (incl. contact hours, self-study hours)</td><td>Total workload: 127.5 (Estimated)
Contact hours:
- lecture: 28.5
- Discussion: 9
Private study including examination preparation, specified in hours[1]: 90</td></tr>
<tr><td>Credit points</td><td>3 credits/4.64 ECTS</td></tr>
<tr><td>Required and recommended prerequisites for joining the course</td><td>No</td></tr>
<tr><td>Course objectives</td><td>This course aims at providing a basic understanding of the nature of social sciences. It introduces an overview of the fields of studies within social sciences. You should be able to do the following upon completion of this class:
• Explaining several reasons for studying the social sciences.
• Describing the methods used by social scientists to conduct research.
• Identifying and discuss key issues involved in debates about social change in areas such as: group and organization, gender, social interaction and network (structure), culture, etc.
• Developing critical thinking skills as course topics are discussed and debated.
• Improving writing skills through essays and in-class writing assignments.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Know and understand the underlying concepts and principles of social science as they relate to the study of business management.
CLO2. Organize ideas gained from theoretical understanding of social science principles and apply them to business and management situations.</td></tr>
</table></td></tr>
</table>

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Content	***The description of the contents should clearly indicate the weighting of the content and the level.*** **Weight: lecture session (3 hours)** **Teaching levels: I (Introduce); T (teach); U (Utilize)**

Topic	Weight	Level
Overview of the Social Sciences and Sociology	**2**	**T, U**
Understanding Sociology	**2**	**T, U**
Sociological Research	**2**	**T, U**
Culture	**2**	**T, U**
Social Interaction and Social Structure	**2**	**T, U**
Groups and Organizations	**2**	**T, U**
The family and Intimate Relationships	**2**	**T, U**
Stratification by Gender and Age	**1**	**T, U**

Examination forms	**Constructed-response test**
Study and examination requirements	*1. Attend more than 80% of contact hours in order to be accepted to the final examination* *2. Actively participate in class activities.* *3. Fulfill tasks given by instructor after class.* *4. Use their own laptop in class only for learning purpose.* *5. Read the textbook in advance.* *6. Access the Blackboard for up-to-date information and material of the course, for online supports from teachers and other students and for practicing and assessment.*
Reading list	**Textbooks:** **[1] Schaefer, R. T. (2006), Sociology: A Brief Introduction, 6th ed., McGraw Hill.**

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (a-k) is shown in the following table:

	ILO										
CLO	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
1	x	x									x
2	x	x									x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1-2	**Overview of the Social Sciences and Sociology** *Anthropology History Geography Psychology* *Political science and International Relations Economics and Business Administration Sociology* *Society, social organisation and social change*	**1, 2**	**Assignment 1**	**Lecture, Discussion**	**[1] Chapter 1**
3-4	**Understanding Sociology** *What is Sociology?* *The Sociological Imagination Sociology and the Social Sciences Sociology and Common Sense* *What is Sociological Theory? The Development of Sociology Major Theoretical Perspectives* *Functionalist Perspective Conflict Perspective Feminist Perspective Interactionist Perspective The Sociological Approach* *Developing a Sociological Imagination*	**1, 2**	**Assignment 2**	**Lecture, Discussion**	**[1] Chapter 1**
5-6	**Sociological Research** *What is the scientific method? Defining the Problem Reviewing the Literature Formulating the Hypothesis* *Collecting and Analyzing the Data Developing the Conclusion* *In Summary: The Scientific Method Major Research Designs* *Surveys Observation Experiments* *Use of Existing Sources Ethics of Research* *Confidentiality Research Funding Value Neutality*	**1-2**	**Assignment 3**	**Lecture, Discussion**	**[1] Chapter 2**

	Technology and Sociological Research				
7-8	**Midterm**				
9-10	**Culture** *Development of Culture Around the World Cultural Universals* *Innovation* *Globalization, Diffusion, and Technology Sociobiology* *Elements of Culture* *Language Norms Sanctions Values* *Culture and the Dominant Ideology Cultural Variation* *Aspects of Cultural Variation Attitudes toward Cultural Variation*	**1, 2**	**Assignment 4**	**Lecture, Discussion**	**[1] Chapter 3**
11-12	**Social Interaction and Social Structure** *Social Interaction And Reality* *Defining and Reconstructing Reality Negotiated Order* *Elements of Social Structure Statuses* *Social Roles Groups* *Social Networks and Technology Social Institutions* *Social Structure in Global Perspective* *Durkheim's Mechanical and Organic Solidarity Tönnies's Gemeinschaft and Gesellschaft* *Lenski's Sociocultural Evolution Approach*	**1, 2**	**Assignment 5**	**Lecture, Discussion**	**[1] Chapter 5**
13-14	**Groups and Organizations** *Understanding Groups* *Types of Groups Studying Small Groups* *Understanding Organizations* *Formal Organizations and Bureaucracies Characteristics of a Bureaucracy Bureaucracy and*	**1, 2**	**Assignment 6**	**Lecture, Discussion**	**[1] Chapter 6**

	Organizational Culture Voluntary Associations *The Changing Workplace* *Organizational Restructuring Telecummuting* *Electronic Communication*				
15-16	**The family and Intimate Relationships** *Global View of the Family* *Composition: What Is the Family?* *Kinship Patterns: To Whom Are We Related? Authority Patterns:Who Rules?* *Studying the Family* *Functionalist View Conflict View Interactionist View Feminist View* *Marriage and Family* *Courtship and Mate Selection Variations in Family Life and Intimate Relationships* *Child-Rearing Patterns in Family Life* *Divorce* *Statistical Trends in Divorce Factors Associated with Divorce Impact of Divorce on Children* *Diverse Lifestyles* *Cohabitation Remaining Single* *Marriage without Children Lesbian and Gay Relationships*	**1, 2**	**Assignment 7**	**Lecture, Discussion**	**[1] Chapter 14**
17	**Stratification by Gender and Age** *Social Construction of Gender* *Gender Roles in the United States Cross-Cultural Perspective*	**1, 2**	**Assignment 8**	**Lecture, Discussion**	**[1] Chapter 11**
18-19	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2
In-class exercises/quizzes/attendance (30%)	Assignments 1-8 60%Pass	Assignments 1-8 60%Pass
Midterm exam (30%)	50%Pass	50%Pass
Final exam (40%)	50%Pass	50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Date revised: 04/11/2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: INTRODUCTION TO MICROECONOMICS

Course Code: **BA117 IU**

1. General information

Course designation	*Microeconomics is the introductory course in economics. The course is designed to teach you the basic tools of microeconomic analysis. Microeconomics is the branch of economics that deals with the interaction of households and firms in individual markets. Some of the issues we will study include how prices and output levels are determined, what happens when governments intervene in markets, when do markets "fail", how do markets produce an "efficient" use of a society"s scarce resources and are market outcomes equitable. Learning "to think like an economist" should make you a more informed student, consumer, worker and voter.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Professor Nguyen Van Phuong
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lectures, projects, quizzes, examinations.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours: 38 (15 classes, 1 class = 3 periods, 1 period = 50 minutes) Private study including examination preparation, specified in hours: 90
Credit points	**03 credits/4.64 ECTS**

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>None</td></tr>
<tr><td>Course objectives</td><td>At the completion of this course students will be able to:
• Determine how elasticity affects consumer demand and firms' production decisions.
• Recognize the role that utility plays in consumer consumption choices.
• Understand a body of social science knowledge and its disciplinary perspective.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><td>Competency level</td><td>Course learning outcome (CLO)</td></tr>
<tr><td>Knowledge</td><td>• CLO1. Recognize the importance that economic models play in economic analysis.
• CLO2. Understand opportunity cost and how this concept can be applied in all facets of life.
• CLO3: Understand markets characterized by monopoly and imperfect competition.</td></tr>
<tr><td>Skill</td><td>• CLO4. Use supply and demand analysis to predict changes in price/quantities in markets, including when government policies play essential roles in these markets.
• CLO5: Apply the relationship between production and costs to determine the profit-maximizing output of firms in different market types.</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
</table>

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Teaching levels: I (Introduce); T (Teach); U (Utilize)

Wk	Topic	Date	Textbook (Mankiw)/Readings	Group Presentation
1	Course Introduction Basic Concepts of the Economics	Mar/09	Chapter 1 - Lecture Notes/ Chapter 1 & Chapter 3 (Textbook)	
2	Basic Concepts of the Economics	Mar/16	Chapter 1 - Lecture Notes/ Chapter 2 & Chapter 3 (Textbook)	
3	Supply – Demand & Market Prices	Mar/23	Chapter 2 - Lecture Notes/ Chapter 4, Chapter 6, Chapter 7 (Textbook)	**1**
4	Supply – Demand & Market Prices (con't)	Mar/30	Chapter 2-Lecture Notes/ Chapter 4, Chapter 6, Chapter 7 (Textbook)	**2**
5	Elasticity and Its Applications	Apr/6	Chapter 3-Lecture Notes/ Chapter 5 (textbook)	**3**
6	Theories of Consumer Choice	Apr/13	Chapter 4 - Lecture Notes/ Chapter 21 (Textbook)	**4**
7	MID-TERM	Apr/20		**5&6**
8	Production and the Cost of production	Apr/27	Chapter 5- Lecture Notes/ Chapter 13 (Textbook)	**7**
9	Perfect competitive market	May/04	Chapter 6 - Lecture Notes/ Chapter 14 (Textbook)	**8**
10	Monopoly	May/11	Chapter 7 - Lecture Notes/ Chapter 15 (textbook)	**9**
11	Monopolistic competition & Oligopoly	May/18	Chapter 8 - Lecture Notes/ Chapter 16, 17 (textbook)	**10**
12	Monopolistic competition & Oligopoly (Cont')	May/25	Chapter 8 - Lecture Notes/ Chapter 16, 17 (textbook)	**11**
13	Market for factor inputs	Jun/04	Chapter 9 - Lecture Notes/ Chapter 18 (Textbook)	***12***
	Final Exam			

Examination forms	Essay questions, case studies

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed based on their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	**Principles of Microeconomics, 8th Edition, 2018, by N. Gregory Mankiw,** or ***Principles of Economics*, 8th Edition, 2018, by N. Gregory Mankiw.** (Earlier versions are acceptable.)

2. Planned learning activities and teaching methods

Wk	Topic	Date	Textbook (Mankiw)/Readings	Group Presentation
1	Course Introduction Basic Concepts of the Economics	Mar/09	Chapter 1 - Lecture Notes/ Chapter 1 & Chapter 3 (Textbook)	
2	Basic Concepts of the Economics	Mar/16	Chapter 1 - Lecture Notes/ Chapter 2 & Chapter 3 (Textbook)	
3	Supply – Demand & Market Prices	Mar/23	Chapter 2 - Lecture Notes/ Chapter 4, Chapter 6, Chapter 7 (Textbook)	**1**
4	Supply – Demand & Market Prices (con't)	Mar/30	Chapter 2-Lecture Notes/ Chapter 4, Chapter 6, Chapter 7 (Textbook)	**2**
5	Elasticity and Its Applications	Apr/6	Chapter 3-Lecture Notes/ Chapter 5 (textbook)	**3**
6	Theories of Consumer Choice	Apr/13	Chapter 4 - Lecture Notes/ Chapter 21 (Textbook)	**4**
7	MID-TERM	Apr/20		**5&6**
8	Production and the Cost of production	Apr/27	Chapter 5- Lecture Notes/ Chapter 13 (Textbook)	**7**
9	Perfect competitive market	May/04	Chapter 6 - Lecture Notes/ Chapter 14 (Textbook)	**8**
10	Monopoly	May/11	Chapter 7 - Lecture Notes/ Chapter 15 (textbook)	**9**
11	Monopolistic competition & Oligopoly	May/18	Chapter 8 - Lecture Notes/ Chapter 16, 17 (textbook)	**10**
12	Monopolistic competition & Oligopoly (Cont')	May/25	Chapter 8 - Lecture Notes/ Chapter 16, 17 (textbook)	**11**
13	Market for factor inputs	Jun/04	Chapter 9 - Lecture Notes/ Chapter 18 (Textbook)	***12***
	Final Exam			

3. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
Class participation and preparation (10%)							
Group assignment (20%)		60%Pass	60%Pass	60%Pass			
Mid-term Exam (30%)	Q1 50%Pass	Q1 50%Pass			Q2 50%Pass	Q3 60%Pass	
Final exam (40%)			Q1 50%Pass	Q2 50%Pass			Q3 50%Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

4. Rubrics (optional)

4.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

4.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.

1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

4.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective,	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.

	thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	position (perspective, thesis/ hypothesis).		
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness)	Delivery techniques (posture, gesture, eye contact, and vocal	Delivery techniques (posture, gesture, eye contact, and vocal	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the

	make the presentation compelling, and speaker appears polished and confident.	expressiveness) make the presentation interesting, and speaker appears comfortable.	expressiveness) make the presentation understandable, and speaker appears tentative.	understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

5. Date revised: July 17th, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: Introduction to Psychology

Course Code: BA118IU

1. General information

Course designation	*Introduction to Psychology focuses on the application of scientific psychology to human life. Emphasis is on "normal" behavior and its antecedents. Includes the study of broad categories of human behavior through various psychological models, Psychology is an introductory course that studies the foundations of human behaviors, thoughts, and emotions. The course will approach various topics from a scientific perspective, using systematic investigation and critical thinking methods rather than personal impressions and "common sense". The knowledge of Psychology is very useful for students who need to learn people as producers and consumers.*
Semester(s) in which the course is taught	1, 2,3
Person responsible for the course	Nguyen Vo Hien Chau, MBA.
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, project, discussion, presentation.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (whether lecture, class discussion, project preparation.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	3 credits/4.64 ECTS

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>None</td></tr>
<tr><td>Course objectives</td><td>The chief aims of this course are for students to learn:

o The subject of human behavior,
o The methods of social sciences,
o The resources for continuous learning after the course,
o The applications in both professional and personal realms, and
o The enjoyment of learning.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Learn how people behave—what they see, what they feel, how they work, how they love, what make them happy, and so on.</td></tr>
<tr><td>Skill</td><td>CLO2. Learn how to use a vast array of information, from websites to scholarly articles to books, so that students can continue to learn, to grow in the understanding of human behavior for the rest of their lives.
CLO3: Learn how to detect wrong information—what some of them are, how they come about, how they are advocated, why they are wrong, what the is contrary evidence, and how to take the next step</td></tr>
<tr><td>Attitude</td><td>CLO4: Learn how to apply them to students’ life. This applies to students, to their career, and to their personal relationships such as with friends, parents, future children, bosses, peers, and opponents.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introduction to the Class
Discovering Psychology?</td><td>2.5</td><td>I, T</td></tr>
<tr><td>Sensation and Perception</td><td>2.5</td><td>I, T, U</td></tr>
<tr><td>Learning</td><td>2.5</td><td>T, U</td></tr>
<tr><td>Memory</td><td>1.5</td><td>T, U</td></tr>
<tr><td>Remembering and forgetting</td><td>1</td><td>T, U</td></tr>
<tr><td>Intelligence</td><td>1.5</td><td>T, U</td></tr>
<tr><td>Emotional Intelligence</td><td>1</td><td>T, U</td></tr>
<tr><td>Motivation</td><td>2.5</td><td>T, U</td></tr>
<tr><td>Personality</td><td>2.5</td><td>I, T, U</td></tr>
<tr><td>Adolescence and adulthood</td><td>1.5</td><td>T, U</td></tr>
<tr><td>Major Depressive Disorder</td><td>1</td><td>T</td></tr>
<tr><td>Health, Stress and Coping</td><td>2.5</td><td>T</td></tr>
<tr><td>Anxiety Disorder</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Mood Disorder</td><td>1</td><td>I, T, U</td></tr>
<tr><td>Therapies</td><td>0.5</td><td>I, T, U</td></tr>
<tr><td>Social psychology</td><td>2.5</td><td>T, U</td></tr>
<tr><td>Cialdini 6 principles of persuasion</td><td>2.5</td><td>T, U</td></tr>
<tr><td>How do we love and cheat</td><td>2.5</td><td>T, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Multiple-choice questions Quiz and Essay Questions Exam.</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
</table>

Reading list	***Textbook required:*** [1]Rod Plotnik and Haig Kouyoumdjian, *Introduction to Psychology*, ninth edition ***Further reading***: [2] Helen Fisher, *Anatomy of Love – A natural history of Mating Marriage and Why we Stray*, 2016. [3] Robert B. Cialdini, *Influence – the Psychology of Persuasion*, 2007 [4] David H. Barlow, *Clinical Handbook of Psychological Disorders*, 2008

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1						
2						
3						
4						

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to the Class Discovering Psychology?		**Class Discussion** **Topic 1:** What is your favorite psychology topic?	Lecture, Discussion	[1]
2	Sensation and Perception		**Class Discussion** **Topic 2A**: Choose your favorite case about sensation and perception (E.g. Why most Fast-Food restaurant choose Red as their main logo color?) You can choose another related topic, but please consult with me in advance. **Topic 2B: Different perception about love/beauty/money/happiness**	Lecture, Discussion, HW	[1]
3	Learning		**Group presentation and Class Discussion** **Topic 3:** Should we use punishment or reinforcement to	Lecture, Discussion, HW Group presentation	[1]

			improve people performance (You can choose to work either in Education, Human Resource Management, or social life field)		
4	Memory		**Group presentation** **Topic 4:** Explain how 3 main types of memory work in a marketing funnel? (For this topic, you should choose a specific brand to analyze)	Lecture, Discussion, HW	[1]
4	Remembering and forgetting			Lecture, Discussion, HW	[1]
5	Intelligence		**Group presentation and Class Discussion** **Topic 5A**: The importance of applying multiple intelligence theory in career orientation.	Lecture, Discussion, HW	[1]
5	Emotional Intelligence		**Topic 5B**: The importance of Emotional Intelligence in study and work.(you should compare and contrast people with high and low EQ)		[1]
6	Motivation		**Group presentation and Class Discussion** **Topic 6:** What motivate us to work? Is money the most wanted reward in an organization? (Think about when you graduate, which factors may affect your career selection)	Lecture, Discussion, HW	[1]
7	Personality		**Group presentation and Class Discussion** **Topic 7**: How much do you understand yourself? (Pros and Cons of each element in Big 5 traits) How your personality fit with your dream job?	Lecture, Discussion, HW	[1]
8	Anxiety Disorder		**Group presentation and Class Discussion**	Lecture, Discussion	[1][4]

			Topic 8: People awareness of Major Depressive Disorder, when and how to seek for help.		
8	Mood Disorder			Lecture, Discussion	[1][4]
8	Therapies			Lecture, Discussion	[1][4]
9,10	Midterm Weeks				
11	Adolescence and adulthood		**Group presentation and Class Discussion** **Topic 9:** The effects of Generation gap between parents and children - Common problems and how to overcome	Lecture, Exercise	[1]
11	Major Depressive Disorder			Lecture, Discussion, HW	[1]
12	Health, Stress and Coping		**Group presentation and Class Discussion** **Topic 10**: How stress affects student life and how to deal with it? (You should define the stressors before discussing about the solution)	Lecture, Discussion, HW	[1]
13	Social psychology		**Group presentation and Class Discussion** **Topic 12:** How social proof influence people purchasing decision.		[1]
14	Cialdini 6 principles of persuasion		**Group presentation and Class Discussion** **Topic 14:** Apply principles of Persuasion to analyze how a livestream affect customer purchasing decision **shorturl.at/couQ1** (You can choose a specific Livestream and analyze it)		[3]
15	How do we love and cheat		**Group presentation and Class Discussion**		[2]

			Topic 13: Sex before marriage, should or should not? Pros and Cons of each decision.		
16	Final Exam				

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**
Individual Quiz (10%)	Quiz 1-10 90%Pass			
Group Presentation (20%)		Presentation Part 2,3 50%Pass		Presentation Part 3 80% Pass
Midterm exam (30%)	Q1 50%Pass	Q2 50% Pass	Q3 60% Pass	Q4 80% Pass
Final Exam (40%)	Q1 50%Pass	Q2 50% Pass	Q3 60% Pass	Q4 80% Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Plan			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content			
Issue/problem identification	15		
Short, simple, and clear argument/question/issue raised	15		
Apply theory to analyze to realistic case. Clearly analyze how the theory work or not work to the case.	30		
Group Opinion	10		
Presentation (10%)			
Well-designed, well-structured with logic flow of argument	20		
Clear voice, gesture, and presentation skills	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**

5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: August 2nd, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **Department/School of Business**

COURSE SYLLABUS

Course Name: INTRODUCTION TO MACROECONOMICS

Course Code: **BA119IU**

1. General information

Course designation	***This subject will provide the fundamental macroeconomic theories and concepts of economic as they apply within the contemporary work environment.***
Semester(s) in which the course is taught	**1, 2**
Person responsible for the course	
Language	**English**
Relation to curriculum	***Compulsory***
Teaching methods	**Lecture, lesson, project, seminar.**
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours: 37.5 (15 sessions, 1 session = 3 periods, 1 period = 45 minutes) Expected self-study hours: 90 (reading, research, working on group assignments)
Credit points	**3 Credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	**None**

<table>
<tr><td>Course objectives</td><td>This course is designed to introduce students to the concepts, models, policies, and analysis in macroeconomics. After taking this course, the students should be able to:
- Analyze the economic situation in their country and develop plans for effective response.
- Measure a country’s economic performance and macroeconomic indicators such as unemployment, inflation, the balance of payment, etc.
- Understand the effect of various kinds of government policies on the economy and develop activities to deal with the negative effects.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge (I, R)</td><td>CLO1. Identifying how to measure a nation’s income, cost of living, unemployment rate, and other important macroeconomic indicators in the economy through group assignments/class discussions.

CLO2. Explain macroeconomic policies such as monetary policy and fiscal policy, and environmental factors that can affect a country’s performance and enhance economic growth.

CLO3. Describe the challenges and opportunities that countries are facing today such as inflation, net capital outflow, trade deficit/ surplus, budget deficit/surplus, investment, and national saving, economic fluctuations…</td></tr>
<tr><td>Skill</td><td>CLO4. Explain the macroeconomic practices of an organization through assignments and presentations.
CLO5. Develop communication skills via in-class presentations (70% of students get 2/4 in the skill assessment rubrics).
CLO6. Develop teamwork skills via group assignments (70% of students get 2/4 in the skill assessment rubrics).</td></tr>
<tr><td>Attitude</td><td>CLO7. Apply professional ethics, moral, and proper understanding of integrity, responsibility, accountability.</td></tr>
</table></td></tr>
</table>

Content	***The description of the contents should clearly indicate the weighting of the content and the level.*** Weight: lecture session (3 hours) Learning levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Measuring a Nation's Income	**1**	**I, T**
Measuring Cost of Living	**1**	**I, T**
Production and Growth	**1**	**I,T, U**
Saving, Investment and Financial Investments	**1**	**T, U**
Unemployment Rate	**1**	**I, T**
The Monetary System	**2**	**I, T**
Money Growth & Inflation	**1**	**I, T**
Open- Economy Macroeconomics: Basic Concepts	**1**	**I, T**
A Macroeconomic Theory of the Open Economy.	**1**	**T, U**
Aggregate Demand and Aggregate Supply	**2**	**I, T**
The Influence of Monetary and Fiscal Policies on Aggregate Demand	**2**	**T, U**
Short-run tradeoffs between inflation and the unemployment rate	**1**	**T, U**

Examination forms	**Multiple-choice questions, short-answer questions / essays**
Study and examination requirements	**- Attend more than 80% of contact hours in order to be accepted to the final examination** **- Actively participate in class activities** **- Fulfill tasks given by the instructor after class** **- Use their own laptop in class only for learning purposes** **- Read the textbook in advance** **- Access the course Blackboard for up-to-date information and material of the course.**

Reading list	**Main textbooks:** ***Mankiw, N.G., 2017, Principles of Macroeconomics or Principles of Economics, 8th Edition, South-Western, Cengage Learning.*** **(Version 1*)*** ***or Mankiw, N.G., 2017, Principles of Economics, 8th Edition, South-Western, Cengage Learning*****(Version 2)** ***(These two versions of the textbooks are similar in main contents and chapters. If you have obtained a copy of version 2 for Introduction to Microeconomics then you can reuse the textbook for this class.)*** **Other data sources:** [1] Wall Street Journal: www.ws.com [2] Yahoo Finance: http://finance.yahoo.com [3]. Bloomberg Net: www.bloomberg.com [4] Financial Times: www.ft.com [5] IMF: www.imf.org [6] World Bank: www.worldbank.com [7] ADB: https://www.adb.org

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-7) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

CLO		ILO				
	1	2	3	4	5	6
1	x	X	x	x	x	x
2	x	X	x	x	x	x
3	x	X	x	x	x	x
4		X	x	x	x	x
5			x	x	x	x
6			x	x	x	x
7			x	x	x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Measuring a nation's income ● Measurement of GDP ● Components of GDP ● Characteristics of GDP ● Real versus Nominal GDP ● GDP and Economic Well-Being	1,2,5	Tests Peer evaluations Class-performance evaluations	Lecture, Group discussion, Group's assignment guidelines	Textbook, Chapter 23
2	Measuring the Cost of Living ● The Consumer Price	1,2,5	Tests Peer evaluations	Lecture, group discussion	Textbook, Chapter 24

	Index ● Correcting Economic Variables for the ● Effects of Inflation ● GDP Deflator versus Consumer Price Index ● Real and Nominal Interest Rate		Class-performance evaluations		
3	Production and Growth ● Economic Growth around the World ● Productivity: Its Role and Determinants ● Economic Growth and Public Policies. ● The Importance of the Long-term growth.	1-3	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 25
4	Saving, Investment and the country's financial system ● Financial institutions in the US. Economy ● Saving, Investment in the national income ● Accounts ● Market for loanable fund	1,4	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 26
5	Unemployment and Its Natural Rate ● Identifying Unemployment ● Job Search ● Minimum-Wage Laws ● Unions and Collective Bargaining ● Theories of Efficiency Wages	1,2, 3	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 28
6 + 7	The Monetary System ● The Meaning of Money ● The Federal Reserve System ● Banks and the Money Supply	1,4,5	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 29
8	Money Growth and Inflation ● The Classical Theories of Inflation ● The Costs of Inflation	1, 3	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 30
9	Midterm				
10	Open-Economy Macroeconomics: Basic Concepts ● The International Flows of Goods and Capital ● The Price of International	1,2,3	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 31 Case study: The Nominal Exchange rate during a hyperinflation.

	Transactions: Real and Nominal Exchange Rate ● The First Theory of Exchange rate determination: ● Purchasing Power Parity				
11	A Macroeconomic Theory of the Open Economy. ● Supply and Demand for Loanable Funds and For Foreign Currency Exchange ● Equilibrium in the Open Economy ● How policies and Events affect an Open Economy	2-4	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 32
12 + 13	Aggregate Demand and Aggregate Supply ● Three key facts about the economic fluctuation. ● Explaining short-run economic fluctuation ● The aggregate Demand Curve (AD) ● The Aggregate Supply Curve (AS) ● Two causes of economic fluctuations	1-5	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion Submission of group assignments.	Textbook, Chapter 33
14+15	The Influence of Monetary and Fiscal Policies on Aggregate Demand ● How Monetary policy influences Aggregate Demand? ● How fiscal policy influences Aggregate demand ● Using policies to stabilize the economy.	4, 6	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook, Chapter 34
16	The Short-run trade-off between inflation and unemployment. ● The Phillips Curve ● Shifts in the Phillips curve: The role of Expectation ● Shifts in the Phillip curves: the Role of supply shocks ● Cost of reducing inflation	LO3-6	Tests Peer evaluations Class-performance evaluations	Lecture, group discussion	Textbook: Chapter 35
17	**Final exam**				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6	CLO7
In-class exercises/quizzes (10%)	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass
Homework exercises (20%)	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass
Mid-term exam (30%)	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass
Final exam (40%)	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass	70 %Pass

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

6. Date revised:

GRADING RUBRIC FOR WRITTEN COURSEWORK

MIDTERM EXAMINATION – Subject (ID subject)

Academic year: 2022 – 2023 (term …)

Criteria	INADEQUATE 10% – 49%	ADEQUATE 50% - 59%	ABOVE AVERAGE 60% - 74%	EXEMPLARY ≥ 75%
Organisation and clarification	Does not organise ideas logically and with clarification. Limited evidence of coherence Ideas lack consistence	Generally organised logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped.	Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
Originality and usefulness of the analysis	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify issues, gather the facts and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained	Shows strong ability to identify issues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported
Use of data/information	Shows little information from sources. Poor handling of sources	Shows moderate amount of source information incorporated. Some key points supported by sources. Quotations may be poorly integrated into	Draws upon sources to support most points. Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well	Draws upon primary and secondary source information in useful and illuminating ways to support key points. Excellent integration of quoted material into paragraphs. Source cited

		paragraphs. **Some possible problems with source citations**	**into paragraphs.** **Sources cited correctly**	**correctly**
Use of frameworks	**Shows limited ability to structure problems in correspondence to theoretical frameworks**	**Shows effort to link problems with the theoretical frameworks.** **There are still some mistakes**	**Shows ability to structure problems in correspondence to theoretical frameworks correctly.** **Minor mistakes in resolving problems**	**Shows ability to structure problems in correspondence to theoretical frameworks correctly.** **The problems are well resolved**
Quality of arguments	**Shows little attempt to offer support for key claims or to relate evidence to analysis.** **The reasons offered are irrelevant.**	**Shows argument of poor quality.** **Weak, undeveloped reasons are offered to support key claims**	**Shows clear, relevant and logical arguments.**	**Shows identifiable, reasonable and sound arguments.** **Clear reasons are offered to support key claims.**

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS
Course Name: Business Computing Skills
Course Code: BA120IU

1. General information

Course designation	*This course is designed to combine knowledge of business and information technologies. It explores the breadth of Information and Communications Technology (ICT), including business hardware and software, professional computing ethics and behaviors as well as design information systems. Also, students will be knowledgeable about computing terminology, the fundamentals of database management, presentation graphics and an introduction to data analysis. The course will prepare students to work in a variety of industries, involving business administration, economics, finance, and accounting.*
Semester(s) in which the course is taught	2, 3
Person responsible for the course	Dr. Nguyen, Ngoc Truong Minh
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, Lesson, Practical Problems
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours: 37.5 (7.5 hours of lecture and 30 hours of exercise) Private study including examination preparation, specified in hours[1]: 90
Credit points	**03 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None
Course objectives	This course accentuates the abilities of computer systems and their applications in business. The course will provide a solid foundation of knowledge about skills that students must develop to effectively use computerized decision tools for typical business problems. Specific objectives include: ● explore basic relationships of computer products and concepts ● create MS Access objects, enter criteria into data, form expressions and

[1] *When calculating contact time, each contact hour is counted as a full hour because the organization of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.*

create functions, and customize the appearance of forms and reports

- create document templates in MS Word that will help businesses streamline their correspondence, use mail merge, print mailing labels, templates, newsletters, and flyers
- analyze data with practical analysis of real business problems and streamline office tasks to present it in a way the managers can use
- acquire strong ability in using MS Excel software as tools in decision-making. This course will provide a complete learning in MS Excel.

Course Learning Outcomes

Upon the successful completion of this course, students will be able to:

Competency Level	Course Learning Outcomes (CLOs)
Knowledge	CLO1. Summarize different technical knowledge to support management and supervisors. CLO2. Describe written directions and specific documents for business general purposes.
Skills	CLO3. Identify critically the use of information and communications technologies (ICT). CLO4. Classify Internet and office skills including e-mail management, web research, and document exchange. CLO5. Generalize technical computer-based skills needed to prepare documents, presentations, and spreadsheets using Microsoft's Office Suite Software (including Access, Word, and Excel).
Attitude	CLO6. Recognize the advantages and disadvantages of ICT and the Internet in general and in business activities particularly.

Content

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: Lecture Session (01 class)[2]

Learning levels: I (Introduce); R (Re-enforce); M (Master)

Topic	Weight	Level
Introduction to Information Systems	**1**	**I**
Computer Hardware and Software	**1**	**I**
The Internet, Personal Email Account	**1**	**I, R**
MS Access – Creating Relational Tables	**1**	**I, R**
MS Access – Basic and Advanced Queries	**1**	**I, R**
MS Access – Forms and Reports Customization	**1**	**I**
MS Word – Creating Templates	**1**	**I, R**
MS Word – Mail Merge and Protecting Documents	**1**	**I**
MS Excel – Formulas and Functions	**1**	**I**
MS Excel – Charting	**1**	**I**
MS Excel – Pivoting Data (Table and Chart)	**2**	**I, R**
MS Excel – Sorting and Filtering	**1**	**I**
MS Excel – Data Validation, What-If Analysis	**2**	**I, R**
MS Excel – Introduction to VBA	**1**	**I**

[2] *Total: 15 classes; 1 class = 03 periods; 01 period = 50 minutes*

Examination forms	Multiple-Choice Questions, Problem-Solving Questions
Study and examination requirements	***Attendance:*** A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. ***Assignments/Examination:*** Students must have more than 50/100 points overall to pass this course.
Reading list	[1] James A. O'Brien, George Marakas (2017), Introduction to Information Systems, 12th edition, Mc-Graw Hill. [2] Ron McFadyen (2021), Relational Databases and Microsoft Access 365. [3] Joan Lambert, Microsoft Word 2019 [4] Michael Alexander, Dick Kusleika (2019), Excel 2019 Bible, Wiley. [5] Hector Guerrero (2016), Excel Data Analysis Modeling and Simulation, Springer.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLOs) (1-6) and Program/Student Learning Outcomes (PLOs) (1-9) is shown in the following table:

	PLOs									
CLOs	1	2	3	4	5	6	7	8	9	10
1			x							
2			x							
3					x					
4						x				
5						x				
6				x		x				

3. Planned learning activities and teaching methods

Week	Topics	CLOs	Assessments	Learning Activities	Resources
1	Introduction to Information Systems	3,6	In-class Ex.	Lecture, Discussion, Group Work	[1]
2	Computer Hardware and Software	3,6	In-class Ex.	Lecture, Discussion, Group Work	[1]
3	The Internet, Personal Email Account	3,4,6	In-class Ex. Quiz 1	Lecture, Discussion	[1]
4	MS Access – Creating Relational Tables	1,2,5	In-class Ex.	Lecture, Discussion	[2]
5	MS Access – Basic and Advanced Queries	1,2,5	In-class Ex.	Lecture, Discussion	[2]
6	MS Access – Forms and Reports Customization	1,2,5	In-class Ex. Quiz 2	Lecture, Discussion	[2]
7	MS Word – Creating Templates	1,2,5	In-class Ex.	Lecture, Discussion	[3]
8	MS Word – Mail Merge and Protecting Documents	1,2,4, 5	In-class Ex. Quiz 3	Lecture, Discussion	[3]

9-10	Midterm	1,2,3, 4,5,6			
11	MS Excel – Formulas and Functions	1,4,5	In-class Ex.	Lecture, Discussion	[4]
12	MS Excel – Charting	1,4,5	In-class Ex.	Lecture, Discussion	[4]
13	MS Excel – Pivoting Data (Table and Chart)	1,4,5	In-class Ex. Quiz 4	Lecture, Discussion	[4]
14	MS Excel – Sorting and Filtering	1,4,5	In-class Ex.	Lecture, Discussion	[4]
15	MS Excel – Data Validation, What-If Analysis	1,4,5	In-class Ex. Quiz 5	Lecture, Discussion	[4]
16	MS Excel – Introduction to VBA	1,4,5	In-class Ex.	Lecture, Discussion	[5]
17	Revision	1,4,5		Review-Test	
18	Final exam	1,4,5			

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
In-class Exercises/Quizzes (30%)	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass
Midterm Exam (30%)	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass	x 70% Pass
Final Exam (40%)	x 70% Pass			x 70% Pass	x 70% Pass	

Note: % Pass – Target that % of students having scores greater than 70 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: ……. HW/Assignment: …… **Date: ……. Evaluator: ……**			
	Max.	**Score**	**Comments**
Technical Content (60%)	**60**		
Abstract clearly identifies purpose and summarizes principal content	**10**		
Introduction demonstrates thorough knowledge of relevant background and prior work	**15**		
Analysis and discussion demonstrate good subject mastery	**30**		
Summary and conclusions appropriate and complete	**5**		
Organization (10%)	**10**		

Distinct introduction, body, conclusions	**5**		
Content clearly and logically organized, good transitions	**5**		
Presentation (20%)	**20**		
Correct spelling, grammar, and syntax	**10**		
Clear and easy to read	**10**		
Quality of Layout and Graphics (10%)	**10**		
TOTAL SCORE	**100**		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response.
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted.

Note: This rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Criteria	**COMPLETELY FAIL Below 10%**	**INADEQUATE 10% - 49%**	**ADEQUATE 50% - 59%**	**ABOVE AVERAGE 60% - 74%**	**EXEMPLARY ≥ 75%**
Organization and clarification	*No evidence of organization and coherence.*	*Does not organize ideas logically and with clarification. Limited evidence of coherence Ideas lack consistence.*	*Generally organized logically, with evidence of progression. Occasionally, there may be a lack of focus or ideas may be tangential.*	*Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped.*	*Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic.*

Originality and usefulness of the analysis	*Shows no ability to identify legal issues or a clear inability to gather the facts.*	*Demonstrates an incomplete grasp of the task.* *There is no overall sense of creative coherence.* *Arguments are addressed incompletely.*	*Shows ability to identify legal issues, gather the facts and develop claims.* *Argument is addressed well but no links with evidence.*	*Shows strong ability to identify legal issues, gather the fact and develop claims as well as link claims with evidence.* *Overall, an acceptable solution is offered and explained.*	*Shows strong ability to identify legal issues, gather the facts and develop claims as well as link claims with evidence.* *Satisfactory solutions are offered and supported.*
Use of data/information	*Shows no effort to incorporate information from primary and secondary sources.*	*Shows little information from sources. Poor handling of sources.*	*Shows moderate amount of source information incorporated.* *Some key points supported by sources.* *Quotations may be poorly integrated into paragraphs.* *Some possible problems with source citations.*	*Draws upon sources to support most points.* *Some evidence may not support arguments or may appear were inappropriate.* *Quotations integrated well into paragraphs.* *Sources cited correctly.*	*Draws upon primary and secondary source information in useful and illuminating ways to support key points.* *Excellent integration of quoted material into paragraphs.* *Source cited correctly.*
Use of frameworks	*Shows no effort to structure problems in correspondence to theoretical frameworks.*	*Shows limited ability to structure problems in correspondence to theoretical frameworks.*	*Shows effort to link problems with the theoretical frameworks.* *There are still some mistakes.*	*Shows ability to structure problems in correspondence to theoretical frameworks correctly.* *Minor mistakes in resolving problems.*	*Shows ability to structure problems in correspondence to theoretical frameworks correctly.* *The problems are well resolved.*
Quality of arguments	*Shows no effort to construct logical arguments.* *Fails to support analysis.*	*Shows little attempt to offer support for key claims or to relate evidence to analysis.* *Reasons offered are irrelevant.*	*Shows argument of poor quality.* *Weak, undeveloped reasons are offered to support key claims.*	*Shows clear, relevant and logical arguments.*	*Shows identifiable, reasonable and sound arguments.* *Clear reasons are offered to support key claims.*

6. Date revised: April 21st, 2023

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** **School of Business**

COURSE SYLLABUS

Course Name: Principles of Management

Course Code: **BA123IU**

1. General information

Course designation	***This subject will provide the fundamental theories and concepts of management as they apply within the contemporary work environment.***
Semester(s) in which the course is taught	**1, 2, 3**
Person responsible for the course	
Language	**English**
Relation to curriculum	**Compulsory**
Teaching methods	**Lecture; Case study; Group discussion**
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours: 37.5 (15 sessions, 1 session = 3 periods, 1 period = 45 minutes) Expected self-study hours: 90 (reading, research, working on group assignments)
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	**None**

<table>
<tr><td>Course Description</td><td>Students will be provided with the fundamental theories and concepts of management as they apply within the contemporary work environment. The course is an introduction to the basic concepts on management roles such as planning and controlling, organization, leadership and motivation. Through this course, students will become acquainted with different management approaches and the challenges for management in the twenty-first century.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge (I, R)</td><td>CLO1. Identifying how managers use leadership theories, motivation theories, and other basic concepts of teamwork and communication in high-performance organizations through group assignments.
CLO2. Explain four management functions: planning, organizing, leading, and controlling
CLO3. Describe the challenges and opportunities that organizations are facing today such as globalization, diversity, technology, and social responsibility.</td></tr>
<tr><td>Skill (R)</td><td>CLO4. Explain the managerial practices of an organization through assignments and presentations.
CLO5. Develop communication skills via in-class presentations (70% of students get 2/4 in the skill assessment rubrics).
CLO6. Develop teamwork skills via group assignments (70% of students get 2/4 in the skill assessment rubrics).</td></tr>
<tr><td>Attitude</td><td>CLO7. Follow ethical issues in managerial situations.</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Learning levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Introducing Management</td><td>1</td><td>I, T</td></tr>
<tr><td>Management Learning Past to Present</td><td>1</td><td>I, T</td></tr>
<tr><td>Environment, Innovation, and Sustainability</td><td>1</td><td>I, T</td></tr>
<tr><td>Global Management and Cultural Diversity</td><td>1</td><td>T, U</td></tr>
<tr><td>Planning Processes and Techniques</td><td>1</td><td>I, T</td></tr>
<tr><td>Control Processes and Systems</td><td>1</td><td>I, T</td></tr>
<tr><td>Organization Structures and Designs</td><td>1</td><td>I, T</td></tr>
<tr><td>Leading and Leadership Development</td><td>2</td><td>I, T</td></tr>
<tr><td>Individual Behavior</td><td>1</td><td>T, U</td></tr>
<tr><td>Motivation Theory and Practice</td><td>2</td><td>I, T</td></tr>
<tr><td>Teams and Teamwork</td><td>1</td><td>T, U</td></tr>
<tr><td>Communication and Collaboration</td><td>1</td><td>T, U</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Short-answer questions</td></tr>
<tr><td>Study and examination requirements</td><td>

Regular and punctual attendance at lectures is expected in this course. University regulations indicate that if students attend less than eighty percent of scheduled classes, they may not be considered for final assessment.

Discussions are strongly encouraged.

Students must gain more than 50/100 points overall to pass this course.

</td></tr>
<tr><td>Reading list</td><td>

[1] Schermerhorn, John R. 2013. *Management*. 12th ed. John Wiley & Sons, Inc.

[2] Schermerhorn, J., Davidson, P., Woods, P., Factor, A., Simon, A. and McBarron, E., 2017. *Management, 6th Asia-Pacific Edition*. 6th ed. Sydney: John Wiley.

[3] DuBrin, Andrew J. 2008. *Essentials of Management*. 8th ed. Cengage Learning.

</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-7) and Program Learning Outcomes (PLO) (1,3,4,5,6) is shown in the following table:

CLOs	PLOs				
	1	3	4	5	6
1	x	x	x	x	x
2	x	x	x	x	x
3	x	x	x	x	x
4		x	x	x	x
5		x	x	x	x
6		x	x	x	x
7		x	x	x	x

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessment	Learning activities	Resources
1	Chapter 1: Introduction to Management	1;2;	MCQs; Case analysis	Lecture, Group discussion, Group's assignment guidelines	[1] Chapter 1.
2	Chapter 2: Management Learning Past to Present	1;2; 3	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 2.
3	Chapter 4: Environment, Innovation, and Sustainability	1;2; 3	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 4.
4	Chapter 5: Global Management and Cultural Diversity	1;2; 3	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 5.
5	Chapter 8: Planning Processes and Techniques	2; 4	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 8.
6	Chapter 9: Control Processes and Systems	2; 4	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 9.
7	Chapter 11: Organization Structures and Designs	2; 4	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 11.
8	Group assignments	4; 5; 6; 7	Oral presentation (70%*)	Oral Presentations; Q&A (for CLO 7);	

				Feedback	
9	MIDTERM EXAM	1;2; 3;4; 5;6; 7	Short-answer questions; MCQs; Case analysis 70%*		
10	Chapter 14: Leading and Leadership Development	2; 4	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 14.
11	Chapter 15: Individual Behaviour	2; 4	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 15.
12	Chapter 16: Motivation Theory and Practice	2; 4	MCQs; Case analysis	Lecture, Discussion,	[1] Chapter 16.
14	Chapter 17: Teams and Teamwork	1; 6; 7	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 17.
	Chapter 18: Communication and Collaboration	1; 5; 7	MCQs; Case analysis	Lecture, Group discussion	[1] Chapter 18.
15	Group assignment	4; 5; 6; 7	MCQs; Case analysis	Oral Presentations; Q&A (for CLO 7); Feedback	
16	Final examination	1;2; 3;4; 5;6; 7	Short-answer questions; MCQs; Case analysis 70%*		

Note: Target that 70% of students having scores greater than 70 out of 100.*

4. Rubrics (optional)

GRADING RUBRIC FOR WRITTEN COURSEWORK
MIDTERM EXAMINATION – Subject (ID subject)
Academic year: 2022 – 2023 (term …)

Criteria	INADEQUATE 10% – 49%	ADEQUATE 50% - 59%	ABOVE AVERAGE 60% - 74%	EXEMPLARY ≥ 75%
Organisation and clarification	Does not organise ideas logically and with clarification Limited evidence of coherence Ideas lack consistence	Generally organised logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped	Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
Originality and usefulness of the analysis	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify legal issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify legal issues, gather the fact and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained	Shows strong ability to identify legal issues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported
Use of data/information	Shows little information from sources. Poor handling of sources	Shows moderate amount of source information incorporated. Some key points supported by sources. Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	Draws upon sources to support most points. Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly	Draws upon primary and secondary source information in useful and illuminating ways to support key points. Excellent integration of quoted material into paragraphs. Source cited correctly
Use of frameworks	Shows limited ability to structure problems in correspondence to theoretical frameworks	Shows effort to link problems with the theoretical frameworks. There are still some mistakes	Shows ability to structure problems in correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems	Shows ability to structure problems in correspondence to theoretical frameworks correctly. The problems are well resolved

Quality of arguments	Shows little attempt to offer support for key claims or to relate evidence to analysis. Reasons offered are irrelevant.	Shows argument of poor quality. Weak, undeveloped reasons are offered to support key claims	Shows clear, relevant and logical arguments.	Shows identifiable, reasonable and sound arguments. Clear reasons are offered to support key claims.

5.

6. **Date revised: August 23, 2022**

	VIETNAM NATIONAL UNIVERSITY HCMC INTERNATIONAL UNIVERSITY Department of Accounting/School of Business

COURSE SYLLABUS

Course Name: Organizational Behavior
BA130IU

1. General information

Course designation	*The course is organized around three determinants of behavior in organizations: 1) individuals, 2) groups/teams, and 3) organizational structure. Particular emphasis will be placed on individual difference, attitude, motivation, job satisfaction, communication, leadership, stress, change, and organizational culture. Vigorous class discussions, presentations, cases, activities, along with group projects and self quizzes will provide the basis for the learning environment in the classroom.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Mai Ngọc Khương Room: O1.306 Telephone: N/A E-mail: mnkhuong@hcmuiu.edu.vn Consultation Hours: Fri, 1:00pm – 4:00 pm
Language	English

Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, group project
Workload (incl. contact hours, self-study hours)	*(Estimated) Total workload: 127.5* *Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 37.5* *Private study including examination preparation, specified in hours[1]: 90*
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None
Course objectives	After taking this class, the students should all be able: - To demonstrate an understanding of the effects that individuals and groups have on organizations, and apply that understanding to the solving organizational problems. - To demonstrate an understanding of the theories and concepts of individual, group and organizational behavior as they apply to organizational decision-making. - To apply concepts and theories about individual style and perception to solving organizational problems. - To apply theories of motivation to the management of organizations. - To use systematic problem-solving approaches in developing solutions to organizational problems. - To exhibit clear and concise written reports and oral presentations skills to communicate understanding and application of theories, topics and concepts. - To effectively participate individually, and as a member of small and large teams, in the completion of all course assignments.

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Course learning outcomes	Upon the successful completion After completing the course, students should have developed skills in:

Competency level	Course learning outcome (CLO)
Knowledge	LO1. Compare the effects of various psychological factors on individual behavior LO2. Examine major inter-personal forces that alter human behaviors in team/group context in oral form. (Discuss) LO3. Classify the potential effects of organizational-level factors (such as structure, culture and change) on organizational behavior
Skill	LO4. Apply a motivational theory to a realistic motivational problem in an organizational context; provide management recommendations consistent with theory
Attitude	LO5. Solve typical organizational-level issues to achieve overall organizational success in the context of cultural diversity and global sustainability.

Content	This course is designed to give students the basic knowledge of human behavior in organizations and how to apply this knowledge to increase the organization effectiveness.
Examination forms	Multiple-choice questions

Study and examination requirements	In order to pass this course, the students must: - achieve a composite mark of at least 50; - attend at least 80 percent of the total sessions of the course; - make a satisfactory attempt at all assessment tasks (see below).
Reading list	Text book [1]· Robbins, S. P. and Judge, T. A. (2013), *Essentials of Organizational Behavior*, 12th edition, Pearson Education. Reference book: **[2]·** John W. Newstrom, (2014), *Organizational Behavior-Human Behavior at Work*, 14th Edition, International Edition, McGraw Hill. **[3]·** Hellrigel, D., Slocum, J., & Woodman (2010), *Organizational Behavior,* 13th edition, Thomson-South Western. - Additional material The instructor will provide his/her lecture notes and additional reading available on Blackboard. However this is not an automatic entitlement for students doing this subject. Note that this is not a distance-learning course, and the students are expected to attend lectures and take notes. This way, the students will get the additional benefit of class interaction and demonstration.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-…) and Program/Student Learning Outcomes (SLO) (1 -…) is shown in the following table:

	PLO					
CLO	**1**	**2**	**3**	**4**	**5**	**6**
1	**x**					
2	**x**		**x**			
3	**x**		**x**			
4		**x**	**x**			
5					**x**	**x**

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessment	Learning activities	Resource
1	Chapter 1: What is Organizational Behavior	1		Lecture	[1]
2	Chapter 2: Diversity in Organizations Chapter 3: Attitudes and Job Satisfaction	1	Group project1	Lecture	[1]
3	Chapter 4: Personality and Values	1	Group project2	Lecture	[1]
4	Chapter 5: Perception and Individual Decision Making	1	Group project3	Lecture	[1]
5	Chapter 6: Emotions and Moods	1	Group project4	Lecture	[1]
6	Chapter 7: Motivation Concepts	1,4	Group project5	Lecture	[1]
7	Chapter 8: Motivation: From Concepts to Applications	1,4	Group project6	Lecture	[1]
8	Chapter 9: Foundations of Group Behavior	1	Group project7, Quiz1	Lecture	[1]
9	Mid-term exam	1,4	MCQ exam		
10	Chapter 10: Understand Work Teams	2	Group project8	Lecture	[1]
11	Chapter 11: Power and Politics	2,5	Group project9	Lecture	[1]
12	Chapter 13: Leadership	2,5	Group project10	Lecture	[1]
13	Chapter 14: Foundations of Organization Structure	3	Group project11	Lecture	[1]
14	Chapter 15: Organizational Culture	3,5	Group project12	Lecture	[1]
15	Chapter 17:	3,5	Group	Lecture	[1]

	Organizational Change and Stress Management		**project13**		
16	**Chapter 18: Conflict and Negotiation**	**3,5**	**Group project14, Quiz2**	**Lecture**	**[1]**
17	**Final exam**	**2,3,5**	**MCQ exam**		

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**
Quizzes (20%)	**Qz1 70%Pass**	**Qz2 70%Pass**	**Qz2 70%Pass**		
Group Project (10%)				**GP1,2,3,4,5,6 70%Pass**	**GP7,8,9,10,11,12,13,14 70%Pass**
Midterm exam (30%)	**50% Pass**			**50% Pass**	
Final exam (40%)		**50% Pass**	**50% Pass**		**50% Pass**

LEARNING ASSESSMENT

GRADING RUBRIC FOR WRITTEN COURSEWORK

MIDTERM EXAMINATION – Subject (ID subject)

Academic year: 2022 – 2023 (term …)

Criteria	**INADEQUATE 10% – 49%**	**ADEQUATE 50% - 59%**	**ABOVE AVERAGE 60% - 69%**	**GOOD 70% - 84%**	**EXEMPLARY ≥ 85%**
Organisation and clarification	Does not organise ideas logically and with clarification. Limited evidence of coherence Ideas lack consistence	Generally organised logically, with evidence of progression Occasionally, there may be a lack of focus or ideas may be tangential	Clear organization and progression. Responds appropriately and relevantly, although some ideas are underdeveloped.		Response is focused, detailed and non-tangential. Shows a high degree of attention to logic and reasoning of points. Clearly leads the reader to the conclusion and stirs thought regarding the topic
Originality and usefulness of the analysis	Demonstrates an incomplete grasp of the task. There is no overall sense of creative coherence. Arguments are addressed incompletely.	Shows ability to identify legal issues, gather the facts and develop claims. Argument are addressed well but no links with evidence	Shows strong ability to identify legal issues, gather the facts and develop claims as well as link claims with evidence. Overall, an acceptable solution is offered and explained		Shows strong ability to identify legal assadsassues, gather the facts and develop claims as well as link claims with evidence. Satisfactory solutions are offered and supported
Use of data/information	Shows little information from sources. Poor handling of sources	Shows moderate amount of source information incorporated.	Draws upon sources to support most points.		Draws upon primary and secondary source information in useful and illuminating ways to support key points.

		Some key points supported by sources. Quotations may be poorly integrated into paragraphs. Some possible problems with source citations	Some evidence may not support arguments or may appear where inappropriate. Quotations integrated well into paragraphs. Sources cited correctly		Excellent integration of quoted material into paragraphs. Source cited correctly
Use of frameworks	Shows limited ability to structure problems in correspondence to theoretical frameworks	Shows effort to link problems with the theoretical frameworks. There are still some mistakes	Shows ability to structure problems in correspondence to theoretical frameworks correctly. Minor mistakes in resolving problems		Shows ability to structure problems in correspondence to theoretical frameworks correctly. The problems are well resolved
Quality of arguments	Shows little attempt to offer support for key claims or to relate evidence to analysis. The reasons offered are irrelevant.	Shows argument of poor quality. Weak, undeveloped reasons are offered to support key claims	Shows clear, relevant and logical arguments.		Shows identifiable, reasonable and sound arguments. Clear reasons are offered to support key claims.

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Business

COURSE SYLLABUS

Course Name: Management Information System

Course Code: **BA169IU**

1. General information

Course designation	*This subject will provide a broad introduction to four key aspects of data science: data retrieval and manipulation, data visualization, statistical computation and machine learning, and presentation and communication.*
Semester(s) in which the course is taught	1, 2
Person responsible for the course	Dr. Ha Minh Tri Dr. Nguyen Hong Anh
Language	English
Relation to curriculum	Elective
Teaching methods	Lecture, lesson, project
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (please specify whether lecture, exercise, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**
Required and recommended prerequisites for joining the course	None

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Course objectives</td><td>This course is designed to introduce students to the concepts, analysis, and activities involved in management of information system. More specific, students will get to know about Enterprise Resource Planning system (ERP) and how to apply this system to manage business from every perspectives.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Describe what MIS is and how it is important for business.
CLO2. Get to know ERP and other popular systems are in used in business today.
CLO3. Understanding different kinds of data and how to collect and process them.
CLO4: How to apply MIS to achieve Operational excellence and customer intimacy.
CLO5: How to use MIS to shape business strategy.
CLO6: How to apply MIS to support E-commerce
CLO7: How to use MIS to manage knowledge and intelligence within organization.</td></tr>
<tr><td>Skill</td><td>CLO8: In use of ERP and Camtasia for individual project.</td></tr>
<tr><td>Attitude</td><td>CLO4. Reason around ethical and privacy issues in data and ethical practices.</td></tr>
</table></td></tr>
</table>

Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)

Topic	**Weight**	**Level**
Introduction to Management Information System & How it is important for business.	1	I, T
MIS for collaboration and e-global business.	1	T, U
MIS in designing business strategy	2	T, U
Ethical and social issues relating to MIS	1	T
Mis in the term of Operational excellence and customer intimacy.	2	T, U
Mis in supporting E-commerce	2	T
Mis in managing knowledge and artificial intelligence.	2	T, U
Project guideline	2	T U

Examination forms	Short-answer questions
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[E-commerce 2021–2022: business. technology. society., Global Edition 17th Edition by Kenneth Laudon (Author), Carol Traver (Author) *ISBN-13: 978-1292409313* *ISBN-10: 1292409312*

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1	x					
2	x					
3						x
4				x		

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Introduction to Management Information System & How it is important for business.	1		Lecture, Discussion, Inclass	[1].0. [2].1.
2	MIS for collaboration and e-global business.	2		Lecture, Discussion, Inclass	[1].9.
3-4	MIS in designing business strategy	2		Lecture, Discussion, Inclass	[2].2.
5	Ethical and social issues relating to MIS	2	Quiz	Lecture, Discussion, Inclass	[1]. 2, 4 [2]. 2
6	Project	3		Project	
					[2]. 3
7	Midterm				
8-9	Mis in the term of Operational excellence and customer intimacy.	2	HW3	Lecture, Discussion, Inclass	[2]. 4. [1]. 18.
10-11	Mis in supporting E-commerce	2		Lecture, Discussion, Inclass	[3]. 10
12-13	Mis in supporting E-commerce	2	HW4	Lecture, Discussion, Inclass	[2]. 8
14-15	ERP project Review for final exam	2	Quiz15	Lecture, Discussion, Inclass	[1]. 12, 13 [2]. 9, 16
16	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
In-class exercises/quizzes (15%)	Qz1 60%Pass	Qz6 60%Pass		

Project HW (15%)	HW2 50%Pass		HW2 50%Pass	
Midterm exam (30%)		Q2 50%Pass		
Final exam (40%)	Part 50%Pass	Part 50%Pass		

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: January 12, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Industrial Engineering and Management

COURSE SYLLABUS

Course Name: Production Management

Course Code: **IS019IU**

1. General information

Course designation	Introduction to production systems. Production planning and control in decision making. Forecasting. Aggregate production planning. Capacity planning. Materials requirement planning. Advanced techniques and approaches in modern production planning and control for designing production systems.
Semester(s) in which the course is taught	4
Person responsible for the course	Tran Van Ly
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, homework.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (please specify whether lecture, exercise, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>None</td></tr>
<tr><td>Course objectives</td><td>Students will be provided with knowledge and skills of forecasting, inventory, aggregate planning, MPS/MRP, facility layout and location, and production scheduling & sequencing.</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Understand the adequate knowledge and analysis for decision making in modern production systems, such as forecasting, inventory, aggregate planning.
CLO2. Understand the approaches and techniques in MPS/MRP, facility layout and location, and production scheduling & sequencing.</td></tr>
<tr><td>Skill</td><td>CLO3. Work effectively in group project of production activities/processes in a specific context; combining the techniques to improve the practical cases. Respond to the needs of community and industrial sectors</td></tr>
<tr><td>Attitude</td><td>CLO4. Identify and follow strictly ethical disciplines in operations</td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Lecture 1: Introduction to Production Management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 2: Forecasting</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 3: Inventory Management</td><td>2</td><td>I, T</td></tr>
<tr><td>Lecture 4: Aggregate Planning</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 5: Modern Production System</td><td>2</td><td>I, T</td></tr>
<tr><td>Lecture 6: Material Requirement Planning (MRP)</td><td>2</td><td>I, T</td></tr>
<tr><td>Lecture 7: Facility layout and Location</td><td>2</td><td>I, T</td></tr>
<tr><td>Lecture 8: Scheduling & Sequencing</td><td>1</td><td>I, T</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Short-answer questions, exercises</td></tr>
</table>

Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	[1] Russell & Taylor, Operations Management, Along the Supply Chain. 7th ed., John Wiley & Son, Inc. [2] W. J. Hopp and M. L. Spearman (2008), Factory Physics: The Foundations of Manufacturing Management, 3rd ed., Irwin/McGraw-Hill. [3] D. Sipper and R. L. Bulfin, (1997), Production: Planning, Control, and Integration, McGraw Hill. [4] Edward A. Silver, David F. Pyke and Rein Peterson, Inventory Management and Production Planning and Scheduling, 3rd ed., John Wiley & Sons.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-7) is shown in the following table:

	ILO						
CLO	1	2	3	4	5	6	7
1		x					
2		x					
3						x	
4				x			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Lecture 1: Introduction to Production Management	1		Lecture, Group work	[1]. 1
2	Lecture 2: Forecasting	1	HW 1	Lecture, Group work	[1].12
3 & 4	Lecture 3: Inventory Management	1,3,4	HW 2	Lecture, Group work	[1].13
5	Lecture 4: Aggregate Planning	1,3,4	HW 3	Lecture, Group work	[1]. 14
6 & 7	Lecture 5: Modern Production System	3		Lecture, Group work	[1]. 16
8	Review for Midterm				
	Midterm				

9 & 10	Lecture 6: Material Requirement Planning (MRP)	2, 3, 4	HW 4	Lecture, Group work	[1]. 15
11&12	Lecture 7: Facility layout and Location	2, 3, 4	HW5	Lecture, Group work	[1]. 7
13	Lecture 8: Scheduling & Sequencing	2, 3, 4	HW 6	Lecture, Group work	[1]. 17
14	Project Presentation	2, 3, 4		Problems solving Group work	[1].
15	Review for Final Exam				
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Homework exercises (30%)	HW1-2 50%Pass	HW4, HW5, HW6 50%Pass	HW1-6 50%Pass	HW1-6 50%Pass
Midterm exam (30%)	Q1 50%Pass	Q2 50%Pass	Q3, Q4 50%Pass	
Final exam (40%)	Q1 50%Pass	Q2 50%Pass	Q3, Q4 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		

Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: March 23, 2022

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Industrial Engineering and Management

COURSE SYLLABUS

Course Name: Project Management

Course Code: **IS026IU**

1. General information

Course designation	This course is developed to provide the principal concept on project management which was characterized by the project management body of knowledge guide (PMBOK Guide). This guide emphasizes the five project process groups of initiating, planning, executing, controlling and closing, and the nine knowledge areas of project integration, scope, time, cost, quality, human resources, communication, risk, and procurement management.
Semester(s) in which the course is taught	4
Person responsible for the course	Tran Van Ly
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, homework.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 127.5 Contact hours (please specify whether lecture, exercise, etc.): 37.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/4.64 ECTS**

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

<table>
<tr><td>Required and recommended prerequisites for joining the course</td><td>None</td></tr>
<tr><td>Course objectives</td><td>Students will be provided with knowledge and skills of constructing the network (AON & AOA), GANNT Chart, solving the network; Resource allocation, resource loading & levelling; Project budgeting & cost estimation, risk management; Project quality management; Project human resource management; Project procurement management; Project executing, monitoring & control to closing the project</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course students will be able to:
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>CLO1. Able to align the project to the organization's strategic plans and business justification throughout its lifecycle; to identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders.
CLO2. Able to manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders Able to Implement general business concepts, practices, and tools to facilitate project success.</td></tr>
<tr><td>Skill</td><td>CLO3. Work effectively in group project in a specific context; combining the techniques to conduct practical cases. Respond to the needs of community and industrial sectors</td></tr>
<tr><td>Attitude</td><td>CLO4. Able to Apply appropriate legal and ethical standards.
Adapt project management practices to meet the needs of stakeholders from multiple sectors of the economy (i.e. consulting, government, arts, media, and charity organizations); Identify and follow strictly ethical disciplines in project management</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>Content</td><td>

The description of the contents should clearly indicate the weighting of the content and the level.

Weight: lecture session (3 hours)

Teaching levels: I (Introduce); T (Teach); U (Utilize)

<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Lecture 1: Introduction to Project Management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 2: Project management processes for a project</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 3: Work breakdown structure</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 4: Project scheduling</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 5: Resource allocation</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 6: Logical Framework</td><td>2</td><td>I, T</td></tr>
<tr><td>Lecture 7: Project cost management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 8: Project risk management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 9: Project quality management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 10: Project human resource management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 11: Project procurement management</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 12: Project executing, monitoring & control.</td><td>1</td><td>I, T</td></tr>
<tr><td>Lecture 13: Project closing</td><td>1</td><td>I, T</td></tr>
</table>

</td></tr>
<tr><td>Examination forms</td><td>Short-answer questions, exercises</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.

Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list</td><td>[1] Book name: A Guide to the project management body of knowledge (PMBOK® Guide). 5th Edition, Newtown Square, Pa. : Project Management Institute, Inc.
[2] Project management: A managerial approach / Jack R. Meredith, Samuel J. Mantel. 7th Edition, Hoboken, N.J. : Wiley ; Chichester : John Wiley [distributor], 2009.
[3] The project management life cycle/ Jason West land. Kogan Page Limited, 2006</td></tr>
</table>

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) (1-4) and Program/Student Learning Outcomes (SLO) (1-7) is shown in the following table:

	SLO						
CLO	1	2	3	4	5	6	7
1		x					
2		x					
3						x	
4				x			

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
1	Lecture 1: Introduction to Project Management, project life cycle and organization	1		Lecture, Group work	[1].
2	Lecture 2: Project management processes for a project - Common project management process interactions. - Project management process groups. - Initiating process group - Planning process group	1	HW 1	Lecture, Group work	[1].
3	Lecture 3: Work breakdown structure	1,3,4	HW 2	Lecture, Group work	[1].
4	Lecture 4: Project scheduling. - Constructing the network: AON & AOA - Gantt chart - Solving the network - Using Microsoft Project software	1,3,4	HW 3	Lecture, Group work	[1].
5	Lecture 5: Resource allocation - Critical path method – Crashing a project - Resource allocation problem - Resource loading - Resource leveling - Constrained resource scheduling	1,3,4	HW 4	Lecture, Group work	[1].
6 & 7	Lecture 6: Logical Framework Approach (LFA)	3		Lecture, Group work	[1].
8	Review for Midterm				
	Midterm				
9	Lecture 7: Project cost management Project budgeting & Cost estimation - Top-Down budgeting - Bottom-Up budgeting - Improving the process of cost estimation	2, 3, 4	HW 5	Lecture, Group work	[1].

10	Lecture 8: Risk management. - Risk management planning - Risk identification - Risk analysis - Risk monitoring and control - Using Crystal Ball software		HW 6	Lecture, Group work	
11	Lecture 9: Project quality management - Plan quality - Perform quality assurance - Perform quality control	2, 3, 4	HW 7	Lecture, Group work	[1].
12	Lecture 10: Project human resource management - Develop human resource plan - Acquire project team - Develop project team - Manage project team	2, 3, 4	HW 8	Lecture, Group work	[1].
13	Lecture 11: Project procurement management - Plan procurements - Conduct procurements - Administer procurements - Close procurements	2, 3, 4	HW 9	Lecture, Group work	[1].
14	Lecture 12: Project executing, monitoring & control.	2, 3, 4	HW 10	Lecture, Group work	[1].
15	Lecture 13: Project closing Project Presentation Review for Final Exam	2, 3, 4		Problems solving Group work	[1].
	Final exam				

4. Assessment plan

Assessment Type	CLO1	CLO2	CLO3	CLO4
Homework exercises (30%)	HW1-2 50%Pass	HW4, HW5, HW6 50%Pass	HW7-8 50%Pass	HW9-10 50%Pass
Midterm exam (30%)	Q1 50%Pass	Q2 50%Pass	Q3, Q4 50%Pass	
Final exam (40%)	Q1 50%Pass	Q2 50%Pass	Q3, Q4 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: ……..	HW/Assignment: …….		
Date: ……	Evaluator: ……		
	Max.	**Score**	**Comments**

Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.

Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.

Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

6. Date revised: March 23, 2022

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** School of Computer Science and Engineering

COURSE SYLLABUS

Course Name: Theoretical Models in Computing

Course Code: IT063

1. General information

Course designation	This course is oriented to those undergraduate students who require a working knowledge of numerical methods
Semester(s) in which the course is taught	3
Person responsible for the course	Dr. Ha Viet Uyen Synh
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours: 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : **4 credits/7.09 ECTS** Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	
Course objectives	This course is oriented to those undergraduate students who require a working knowledge of numerical methods. Topics to be covered include solving nonlinear equations and linear systems, interpolation and least square method, numerical evaluation of derivatives, integral and solution of differential equations. The focus will be on understanding the solving techniques and the engineering meaning of diver problems, and not on rigorous profs. ⬚
Course learning outcomes	CLO 1. Solve numerically nonlinear equations by bisection, iterative and Newton methods.

<table>
<tr><td></td><td>CLO 2. Solve big linear systems by exact and iterative methods.
CLO 3. Fit data by interpolation polynomials, Spline  polynomials and least square methods.
CLO 4. Evaluate numerically derivatives and integrals.
CLO 5. Solve numerically Boundary value problems by Euler, Euler improved and Finite Difference methods.
CLO 6. Study diverse engineering problems by numerical methods
<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>1,2,3,4,5</td></tr>
<tr><td>Skill</td><td>6</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (~~3~~ hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Chapter 1. Introduction</td><td>3</td><td>I</td></tr>
<tr><td>Chapter 2. Errors & Taylor Series</td><td>3</td><td>T,U</td></tr>
<tr><td>Chapter 3. Roots of Non-linear Equations</td><td>3</td><td>T,U</td></tr>
<tr><td>Chapter 4. Linear Algebraic Equations</td><td>6</td><td>T,U</td></tr>
<tr><td>Chapter 5. Optimization</td><td>6</td><td>T,U</td></tr>
<tr><td>Chapter 6. Curve Fitting & Interpolation</td><td>6</td><td>T,U</td></tr>
<tr><td>Chapter 7. Numerical Differentiation and Integration</td><td>6</td><td>T,U</td></tr>
<tr><td>Chapter 8. Ordinary Differential Equations</td><td>6</td><td>T,U</td></tr>
<tr><td>Chapter 9. Partial Differential Equations</td><td>6</td><td>T,U</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Multiple-choice questions, short-answer questions</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list</td><td>1. Steven C. Chapra, Raymond P. Canale, Numerical methods for engineers 6th, 2008</td></tr>
</table>

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-6) and Program/Student Learning Outcomes (SLO) (1-6) is shown in the following table:

	SLO					
CLO	1	2	3	4	5	6
1	x	x				
2	x					
3	x					
4		x				
5	x					
6		x				

1.

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Chapter 1. Introduction			lecture, exercises	
2	Chapter 2. Errors & Taylor Series	1	Quiz, Lab, Exam	lecture, exercises, lab	
3	Chapter 3. Roots of Non-linear Equations	1	Quiz, Lab, Exam	lecture, exercises, lab	
4	Chapter 4. Linear Algebraic Equations	2	Quiz, Lab, Exam	lecture, exercises, lab	
5	Chapter 5. Optimization	3	Quiz, Lab, Exam	lecture, exercises, lab	
6	**Midterm**				
	Chapter 6. Curve Fitting & Interpolation	4	Quiz, Lab, Exam	lecture, exercises, lab	
7	Chapter 7. Numerical Differentiation and Integration	5	Quiz, Lab, Exam	lecture, exercises, lab	
8	Chapter 8. Ordinary Differential Equations	6	Quiz, Exam	lecture, exercises, lab	
9	Chapter 9. Partial Differential Equations	6	Quiz, Exam	lecture, exercises, lab	
10	**Final exam**				

3. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO6**
Quiz (10%)	20%	20%	20%	20%	20%	20%
Labs (20%)	30%	30%	30%	30%	30%	30%
Midterm examination (30%)	50%	50%	50%			
Final examination (40%)				50%	50%	50%

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

1. When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.↩

Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1

Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

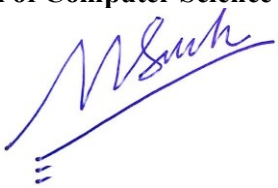
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Date revised: February 15, 2022

Ho Chi Minh City, 15/02/2022

Dean of School of Computer Science and Engineering



Assoc.Prof. Nguyen Van Sinh

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Computer Science and Engineering

COURSE SYLLABUS

Course Name: Computer Networks

Course Code: IT091

1. General information

Course designation	This subject covers the fundamental knowledge of computer networks
Semester(s) in which the course is taught	3,5
Person responsible for the course	Assoc. Prof. Vo Thi Luu Phuong.
Language	English
Relation to curriculum	Compulsory (CS, NE, CE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits: **4 credits /7.09 ECTS** Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	None
Course objectives	This course covers the fundamental knowledge of computer networks such as OSI, TCP/IP models, network architectures, LAN, WAN, the typical network protocols. The students will also study to design, implement and monitor a small / medium scale network.
Course learning outcomes	CLO 1. Analyze the components, architecture, and protocols in computer networks; CLO 2. Apply the theory in designing a small/medium computer networks; CLO 3. Show the ability to work in teams;

		Competency level	**Course learning outcome (CLO)**
		Knowledge	CLO1
		Skill	CLO2, CLO3
		Attitude	CLO2
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (Teach); U (Utilize)		

Topic	**Weight**	**Level**
Introduction of computer networks	2	T, U
Network applications: HTTP, FTP, DNS, SMTP	2	T, U
Transport layer: congestion control, TCP, UDP	2	T, U
IP addressing, CIDR, VLSM	2	T, U
Network layer: routing algorithms, routing protocols	2	T, U
Datalink layer and physical layer	2	T, U
Wireless and mobile networks	2	T
Some advanced topics in contemporary networks	1	U

Examination forms	Multiple-choice questions, short-answer questions
Study and examination requirements	Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged. Assignments/Examination: Students must have more than 50/100 points overall to pass this course.
Reading list	1. J. F. Kurose and K. W. Ross, Computer Networking: A Top Down Approach 7th, 2014

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-3) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1	✓✓					
2		✓✓✓				
3					✓	

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1-2	Introduction of computer networks	1	Midterm	lecture	Chapter 1, [1]
3-4	Network applications: HTTP, FTP, DNS, SMTP	1	Midterm, Lab	lecture, lab	Chapter 2, [1]

5-6	Transport layer: congestion control, TCP, UDP	1	Midterm, Lab	lecture, lab	Chapter 3, [1]
	Midterm				
7-8	IP addressing, CIDR, VLSM	2	Final, Lab	lecture, lab	Chapter 4, [1]
9-10	Network layer: routing algorithms, routing protocols	1,2	Final, Lab	lecture, lab	Chapter 5, [1]
11-12	Datalink layer and physical layer	1,2	Final, Lab	lecture, lab	Chapter 6, [1]
13-14	Wireless and mobile networks	1	Final	lecture	Chapter 7, [1]
15	Some advanced topics in contemporary networks	3	Group project	group work	Literature
10	**Final exam**				

4. Assessment plan

Assessment Type	**CLO1**	**CLO2**	**CLO3**
Exercises, quizzes, attendants (10%)	30%		30%
Group project (5%)		30%	40%
Labs (25%)		30%	30%
Midterm examination (30%)	40%		
Final examination (30%)	30%	40%	

1. When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.↩

5. Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		

Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.

Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

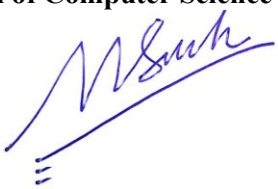
	Capstone	**Milestone**		**Benchmark**
	4	**3**	**2**	**1**
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Date revised: February 15, 2022

Ho Chi Minh City, 15/02/2022

Dean of School of Computer Science and Engineering



Assoc.Prof. Nguyen Van Sinh

	VIETNAM NATIONAL UNIVERSITY HCMC **INTERNATIONAL UNIVERSITY** School of Computer Science and Engineering

COURSE SYLLABUS

Course Name: Information System Management

Course Code: IT094

1. General information

Course designation	This course covers the concepts of information systems and their applications to business processes
Semester(s) in which the course is taught	6
Person responsible for the course	Dr. Tran Thanh Tung
Language	English
Relation to curriculum	Elective course (CS, DS) Specialization (required) (NE)
Teaching methods	Lecture, lesson, project, seminar.
Workload (incl. contact hours, self-study hours)	Total workload: 195 Contact hours (please specify whether lecture, exercise, laboratory session, etc.): 45 (lecture) + 30 (laboratory) Private study including examination preparation, specified in hours: 120
Credit points	Number of credits : **4 credits/7.09 ECTS** Lecture: 3 Laboratory: 1
Required and recommended prerequisites for joining the course	Principles of Database Management
Course objectives	This course will aim to provide students with:The concepts of information systems and their applications to business processes.Use of computer-based information systems in functional areas of business. Understanding of computer and information technology, resources, management and end-user decision making, and system development.

<table>
<tr><td>Course learning outcomes</td><td>CLO 1. understand basic information system concepts as applied to business operations and management.
CLO 2. identify the major components of a computer system, including hardware, software, operating systems and operating environments as they apply to information systems.
CLO 3. develop basic MIS applications such as spreadsheet, database, and web development.

<table>
<tr><th>Competency level</th><th>Course learning outcome (CLO)</th></tr>
<tr><td>Knowledge</td><td>1, 2</td></tr>
<tr><td>Skill</td><td>3</td></tr>
<tr><td>Attitude</td><td></td></tr>
</table></td></tr>
<tr><td>Content</td><td>The description of the contents should clearly indicate the weighting of the content and the level.
Weight: lecture session (3 hours)
Teaching levels: I (Introduce); T (Teach); U (Utilize)
<table>
<tr><th>Topic</th><th>Weight</th><th>Level</th></tr>
<tr><td>Information Systems in Global Business;</td><td>1</td><td>I</td></tr>
<tr><td>Global E-Business and Collaboration;</td><td>1</td><td>I</td></tr>
<tr><td>Information Systems, Organizations and Strategy</td><td>2</td><td>T</td></tr>
<tr><td>Ethical and Social Issues in Information Systems;</td><td>1</td><td>T</td></tr>
<tr><td>Telecommunications, the Internet, and Wireless Technology;</td><td>1</td><td>T</td></tr>
<tr><td>Foundations of Business Intelligence: Databases and Information Management</td><td>1</td><td>T,U</td></tr>
<tr><td>E-Commerce: Digital Markets, Digital Goods;</td><td>2</td><td>T,U</td></tr>
<tr><td>Achieving Operational Excellence and Customer Intimacy: Enterprise Applications;</td><td>2</td><td>T,U</td></tr>
<tr><td>Building Information Systems;</td><td>2</td><td>T,U</td></tr>
<tr><td>Managing Knowledge;</td><td>1</td><td>T</td></tr>
<tr><td>Enhancing Decision Making.</td><td>1</td><td>T</td></tr>
</table></td></tr>
<tr><td>Examination forms</td><td>Multiple-choice questions, short-answer questions</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignments/Examination: Students must have more than 50/100 points overall to pass this course.</td></tr>
<tr><td>Reading list</td><td>1. Kenneth C. Laudon, Jane P. Laudon, Management Information Systems: Managing the Digital Firm 14th, 2016
2. Kenneth C. Laudon and Jane Laudon, Essentials of Management Information Systems 11th, 2015</td></tr>
</table>

2. Learning Outcomes Matrix

The relationship between Course Learning Outcomes (CLO) (1-4) and Program Intended Learning Outcomes (ILO) (1-6) is shown in the following table:

	ILO					
CLO	1	2	3	4	5	6
1		x		x		
2		x		x		
3		x				

3. Planned learning activities and teaching methods

Week	**Topic**	**CLO**	**Assessments**	**Learning activities**	**Resources**
1	Information Systems in Global Business;	1	Midterm exam	In-class activities	
2	Global E-Business and Collaboration;	1	Midterm exam	In-class activities	
3	Information Systems, Organizations and Strategy	1,2	Midterm exam, Quiz	In-class activities, Lab	
4	Ethical and Social Issues in Information Systems;	1	Midterm exam		
5	Telecommunications, the Internet, and Wireless Technology;	2	Midterm exam	In-class activities, Lab	
6	**Midterm**				
7	Foundations of Business Intelligence: Databases and Information Management	2,3	Final exam	In-class activities, Lab	
8	E-Commerce: Digital Markets, Digital Goods;	1	Final exam	In-class activities, Lab	
9	Achieving Operational Excellence and Customer Intimacy: Enterprise Applications;	1	Final exam	In-class activities, Lab	
10	Building Information Systems;	2,3	Final exam	In-class activities, Lab	
11	Managing Knowledge;	1	Final exam		
12	Enhancing Decision Making.	1	Final exam		
13	**Final exam**				

4. Assessment plan

Note: %Pass: Target that % of students having scores greater than 50 out of 100.

Assessment Type	CLO1	CLO2	CLO3
Midterm examination (30%)	40%	30%	20%
Projects/Presentations/ Report (20%)		40%	60%
Final examination (40%)	30%	20%	20%
Exercises/ Quiz (20%)	30%	10%	

Rubrics (optional)

5.1. Grading checklist

Grading checklist for Written Reports			
Student: …….. HW/Assignment: ……. Date: …… Evaluator: ……			
	Max.	**Score**	**Comments**
Technical content (60%)			
Abstract clearly identifies purpose and summarizes principal content	10		
Introduction demonstrates thorough knowledge of relevant background and prior work	15		
Analysis and discussion demonstrate good subject mastery	30		
Summary and conclusions appropriate and complete	5		
Organization (10%)			
Distinct introduction, body, conclusions	5		
Content clearly and logically organized, good transitions	5		
Presentation (20%)			
Correct spelling, grammar, and syntax	10		
Clear and easy to read	10		
Quality of Layout and Graphics (10%)	10		
TOTAL SCORE	100		

5.2. Holistic rubric

Holistic rubric for evaluating the entire document, e.g., exercises/quizzes/HW	
Score	**Description**
5	Demonstrates complete understanding of the problem. All requirements of task are included in response
4	Demonstrates considerable understanding of the problem. All requirements of task are included.
3	Demonstrates partial understanding of the problem. Most requirements of task are included.
2	Demonstrates little understanding of the problem. Many requirements of task are missing.
1	Demonstrates no understanding of the problem.
0	No response/task not attempted

Note: this rubric is also used to evaluate questions in an exam.

5.3. Analytic rubric

Critical thinking value rubric for evaluating questions in exams:

	Capstone	Milestone		Benchmark
	4	3	2	1
Explanation of issues	Issue/ problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/ problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/ problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/ or backgrounds unknown.	Issue/ problem to be considered critically is stated without clarification or description.
Evidence *Selecting and using information to investigate a point of view or conclusion*	Information is taken from source(s) with enough interpretation/ evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.	Information is taken from source(s) with enough interpretation/ evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.	Information is taken from source(s) with some interpretation/ evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.	Information is taken from source(s) without any interpretation/ evaluation. Viewpoints of experts are taken as fact, without question.
Influence of context and assumptions	Thoroughly (systematically and methodically) analyzes own and others' assumptions and carefully evaluates the relevance of contexts when presenting a position.	Identifies own and others' assumptions and several relevant contexts when presenting a position.	Questions some assumptions. Identifies several relevant contexts when presenting a position. May be more aware of others' assumptions than one's own (or vice versa).	Shows an emerging awareness of present assumptions (sometimes labels assertions as assumptions). Begins to identify some contexts when presenting a position.
Student's position (perspective, thesis/hypothesis)	Specific position (perspective, thesis/ hypothesis) is imaginative, taking into account the complexities of an issue. Limits of position (perspective, thesis/ hypothesis) are acknowledged. Others' points of view are synthesized within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/hypothesis) takes into account the complexities of an issue. Others' points of view are acknowledged within position (perspective, thesis/ hypothesis).	Specific position (perspective, thesis/ hypothesis) acknowledges different sides of an issue.	Specific position (perspective, thesis/ hypothesis) is stated, but is simplistic and obvious.
Conclusions and related outcomes (implications and consequences)	Conclusions and related outcomes (consequences and implications) are logical and reflect student's informed evaluation and ability to place evidence and perspectives discussed in priority order.	Conclusion is logically tied to a range of information, including opposing viewpoints; related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Source: Association of American Colleges and Universities

Oral communication value rubric for evaluating presentation tasks:

	Capstone	Milestone		Benchmark
	4	3	2	1
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.

Language	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.
Supporting Material	A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that significantly supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally supports the presentation or establishes the presenter's credibility/ authority on the topic.	Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that partially supports the presentation or establishes the presenter's credibility/ authority on the topic.	Insufficient supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make reference to information or analysis that minimally supports the presentation or establishes the presenter's credibility/ authority on the topic.
Central Message	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced but is not explicitly stated in the presentation.

Source: Association of American Colleges and Universities

Date revised: February 15, 2022

Ho Chi Minh City, 15/02/2022

Dean of School of Computer Science and Engineering

Assoc.Prof. Nguyen Van Sinh

VIETNAM NATIONAL UNIVERSITY HCMC

INTERNATIONAL UNIVERSITY

School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: Summer Internship

Course Code: **CE314IU**

1. General information

Module designation	CE314IU – Summer Internship This course is an internship and is designed to supplement traditional classroom-based learning with experiential learning. The internship provides students with the opportunity to practically apply knowledge gained in their courses of Civil Engineering.
Semester(s) in which the module is taught	3
Person responsible for the module	Dr. Nguyen, Hoai Nghia
Language	English
Relation to curriculum	Compulsory
Teaching methods	Internship
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 202.5 Contact hours (lecture, exercise, laboratory session, etc.): 112.5 Private study including examination preparation, specified in hours[1]: 90
Credit points	**3 credits/7.36 ECTS**
Required and recommended prerequisites for joining the module	Steel Structure –CE305IU
Module objectives/intended learning outcomes	**Overall objectives** Students who complete the course will be able to perform the following tasks:

[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

	(1) Applying the civil engineering knowledge to handle problems in reality. (2) Practicing the ethics and professional skills.
Content	*The description of the contents should clearly indicate the weighting of the content and the level.* Weight: lecture session (3 hours) Teaching levels: I (Introduce); T (teach); U (Utilize)

Topic	Weight	Level
Internship guidance	1	I
Internship (at companies/ sites)	320	U

Examination forms	Defense
Study and examination requirements	Attendance: Student will presence all working days at the internship places (offices and/or sites). Students will report weekly via email to advisors. Examination: Students submit final reports and defense to advisors. Students must have more than 50/100 points overall to pass this module.
Reading list	Text book: [1] S. W. Nunnally, (2014). *Construction Methods and Management*, Pearson, 8th edition. [2] R. L. Peurifoy, C. J. Schexnayder, R. L. Schmitt, and A. Shapira. (2018). *Construction Planning, Equipment, and Methods*, McGraw-Hill Education 9th edition. [3] Hurst, M.K., *"Prestressed Concrete Design"*, 2nd edition. [4] Mosley, W.H., Hulse, R. and Bungey, J.H., *"Reinforced Concrete Design to EuroCode 2"*, 6th edition, Macmillan, London, 2007 [5] Eurocode 2: Design of Concrete Structures – Part 1-1: General rules and rules for buildings [1] Trahair, NS.; Bradford MA.; Nethercot DA. and Gardner, L. “The

	Behavior Design of Steel Structures to EC 3", 4th Edition, Taylor and Francis, 2007. [6] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-8: Design of Steel Structures – Design of Joints, British Standards Institution, London, UK.

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (1-2) and Program Intended Learning Outcomes (a-k) is shown in the following table:

(1) CLO1: Applying the civil engineering knowledge to handle problems in reality.
(2) CLO2: Practicing the ethics and professional skills.

No.	**Program Intended Learning Outcome (ILO)**										
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
CLO1		x								x	
CLO2				x	x		x				x

Program Learning Outcome:

(a) Understanding the physical world and using knowledge of mathematics and natural sciences to represent it in pursuing and establishing research by the use of quantitative and quantitative methods.

(b) Understanding the fundamentals of the civil engineering field (e.g. construction geology, material science, construction physics, surveying, structural theory, technical design, construction informatics, soil mechanics, fluid mechanics, and computational techniques, analyzing data for design, build, and appraisal construction)

(c) Ability to analyze and prepare investment projects and understand their economic, environmental, and social impacts

(d) Awareness of professional and ethical responsibilities of a civil engineer

(e) Ability to function as a member of a multidisciplinary team (including multi-national and mixed-gender teams) as well as having good knowledge of management and organization to be able to take on leadership roles

(f) Recognition of the need for and ability to engage in life-long learning in order to work efficiently in situations in which new technologies emerge regularly as well as take part in developing new technologies by engaging in research works having the ability to interpret and use empirical datasets, integrate technical literature and databases to solve specific civil engineering problems or fill knowledge gaps.

(g) Ability to communicate matters related to civil engineering to colleagues in the same profession or the general public, effectively using oral, written, and other forms of communication.

(h) A broad education necessary to understand the impacts of civil engineering solutions in a global and social context

(i) A broad understanding of contemporary issues in civil engineering in the national, regional,

and global level

(j) Ability to use techniques, skills, and modern engineering tools necessary for engineering practice, including identifying tasks of civil engineering, analyzing, abstracting, and formulating, along with being able to develop concepts, plans, and methods for proof and forecast (e.g., documented evidence for stability, energy efficiency, noise protection, flood protection, water supply)

(k) Ability to use English in both technical and daily life situations

3. Planned learning activities and teaching methods

Week	Topic	CLO	Assessments	Learning activities	Resources
0	Internship guidance			Lecture	Lecture note
1-8	Companies/ sites apprenticeship	1,2	Attendance/ report		
	DEFENSE			Internship defense	

4. Assessment plan

Assessment Type	CLO1	CLO2
Internship Student evaluation (50%)	Knowledge and personal abilities 50%Pass	Attitude and manner of working 50%Pass
Defense (50%)	Knowledge and personal abilities 50% pass	Performing os report and presentation 50% pass

Note: %Pass: % students have scores greater than 50 out of 100.

5. Date revised: June 06, 2023

Ho Chi Minh City, June 12, 2023

Dean of School of Civil Engineering and Management

(Signature)

Dr. Nguyễn Hoài Nghĩa

VIETNAM NATIONAL UNIVERSITY HCMC
INTERNATIONAL UNIVERSITY
School of Civil Engineering and Management

COURSE SYLLABUS

Course Name: THESIS

Course Code: **CE420IU**

1. General information

Course designation	Students sympathize with knowledge learned in the curriculum of civil engineering major in order to conduct their graduation thesis, representing the design and management of a practical structure via A1-size drawings or a report. Besides, students must research civil engineering problems.
Semester(s) in which the course is taught	8
Person responsible for the course	*IU lecturers and visiting lectures*
Language	English
Relation to curriculum	Compulsory
Teaching methods	Lecture, advice, seminar, presentation
Workload (incl. contact hours, self-study hours)	(Estimated) Total workload: 675 Contact hours (please specify whether lecture, discussions, seminar, etc.): 375 Private study including examination preparation, specified in hours1: 300
Credit points	**10 credits/24.55 ETCS**
Required and recommended prerequisites for joining the course	1. The student must maintain a minimum cumulative GPA of 50 or higher. 2. The student must have a minimum of accumulative credits of **128 credits.** Students will work one-on-one with their thesis advisor and the thesis coordinator to identify times that they will meet and create a plan for completing the graduation thesis.
Parallel course	None

<table>
<tr><td>Course objectives</td><td>The aim of this course is to
- Complete a capstone project. Student needs to make a thesis proposal and produce the first draft of the thesis. Writing a graduate thesis requires independent research, scientific writing, critical thinking, independent thinking, and effective communication.
- Develop the concepts of structural design and construction, or manage a practical civil structure to enhance traditional classroom-based learning compared with experiential learning
- Conduct research on civil engineering problems</td></tr>
<tr><td>Course learning outcomes</td><td>Upon the successful completion of this course, students will be able to:
<table>
<tr><th>Categories</th><th>Course learning outcome (CLO)/ Competency</th></tr>
<tr><td>Knowledge</td><td>CLO1: Develop the concepts of structural design, construction, or manage a practical civil structure to enhance traditional classroom-based learning compared with experiential learning
CLO2: Conduct research on civil engineering problems</td></tr>
<tr><td>Skills</td><td>CLO3: Improve vital skills for students working at companies
CLO4: Improve writing and presentation skills
CLO5: Enhance the use of English in both technical and day-life situations</td></tr>
<tr><td>Attitude</td><td>CLO6: Work independently and professionally</td></tr>
</table></td></tr>
<tr><td>Content</td><td>It is dependent on on-site construction works indicated by Supervisor and Advisor</td></tr>
<tr><td>Examination forms</td><td>Disscusion, Assigment, and Presentation</td></tr>
<tr><td>Study and examination requirements</td><td>Attendance: A minimum attendance of 80 percent is compulsory for the class sessions. Students will be assessed on the basis of their class participation. Questions and comments are strongly encouraged.
Assignment and Presentation: Students must have GPA of more than 50/100 points overall to pass this course.</td></tr>
</table>

Reading list and Media employed	**<u>Textbooks</u>: (depend on Advisors)** [1] C P Kaushik, S S Bhavikatti, Anubha Kaushik, "Basic Civil and Environmental Engineering", New Age International (P) Ltd., Publishers, 2010. [2] Pham Nhan Hoa, "Lecture Note,: STRUCTURAL ANALYSIS AND DESIGN WITH CIVIL ENGINEERING SOFTWARE", Sep 2019 [3] R.C. Hibbeler, "Structural Analysis", 9th Edition, Pearson Prentice Hall, US [4] W. H. Mosley, J. H. Bungey and R. Hulse, "Reinforced concrete design to Eurocode 2", PALGRAVE MACMILLAN, 7th Edition, 2012. [4.1] Eurocode 2: Design of Concrete Structures - Part 1-1: General rules and rules for buildings [5] Trahair, NS.; Bradford MA.; Nethercot DA. and Gardner, L. "The Behavior Design of Steel Structures to EC 3", 4th Edition, Taylor and Francis, 2007. [5.1] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-1: Design of Steel Structures - GENERAL RULES and RULES OF BUILDINGS, British Standards Institution, London, UK. [5.2] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-5: General rules - PLATED STRUCTURAL ELEMENTS, British Standards Institution, London, UK. [5.3] Eurocode 3 (BS EN 1993-1-1:2005) Part 1-8: Design of Steel Structures - DESIGNS OF JOINS, British Standards Institution, London, UK. [6] BRAJA M. DAS, KHALED SOBHAN, "Principles of Geotechnical Engineering", 9th Edition, Cengage Learning, 2018 [7] BRAJA M. DAS, "Principles of Foundation Engineering, SI", 7th Edition, Cengage Learning, 2011 **<u>Reference books:</u>** [1a] S. S. Bhavikatti, "Basic_Civil_Engineering", New Age International (P) Ltd., Publishers, 2010. [5a] Gardner, L. and Nethercot, D.A., "Designer's Guide to Eurocode 3: Design of Steel Structures", 3rd Edition, Thomas Telford, 2009

2. Learning Outcomes Matrix (optional)

The relationship between Course Learning Outcomes (CLO) and Program Intended Learning Outcomes (ILO) is shown in the following table:

	ILO										
CLO	a	b	c	d	e	f	g	h	i	j	k
1	x	x	x						x		
2	x	x	x						x	x	
3				x	x	x				x	
4							x	x			
5							x				
6											x

3. Planned learning and assessment activities

Week	Topic	CLO	Assessments activities	Learning activities	Resources
1	- Advisors provide the rules of graduation thesis to students	1,2,5	Discussion	Reading materials before class; Discussion;	

	- Students search for a real project for their thesis - Students review the codes involving their thesis				
2-15	Do the thesis	1,2,3,4,5	Discussion, Assignment,	Reading materials before class; Discussion;	
16	Submit thesis including 1 report, 6-10 drawings				

4. Assessment plan

- The type of assessment is grading based on exam questions. The range of scores is from 0 to 100.
- The final GPA of students is integrated from 3 components, including progress assessment, mid-term exam, and final exam. The contribution of each component (in percentage) is shown in the table below.

No	**Assessment Type (% contribute to GPA)**	**CLO1**	**CLO2**	**CLO3**	**CLO4**	**CLO5**	**CLO 6**
1	**Progress Assessment (PA, 15%)**						
1.1	Class attendance (5% of PA)						
1.2	Discussion (5% of PA)						
1.3	Assignment (5% of PA)	Assignment 50%Pass	Assignment 50%Pass				Assignment 50%Pass
2	**Presentation (Fin, 85%)**	Assignemnt 50%Pass	Assignment 50%Pass	Assignment 50%Pass	Presentation 50%Pass	Presentation 50%Pass	

Note: %Pass: Target that % of students having scores greater than 50% out of question score

5. Rubrics (optional)

- No

6. Date revised: June 6, 2023

Ho Chi Minh City, June 12, 2023

School of Civil Engineering and Management

Nguyen Hoai Nghia

ĐẠI HỌC QUỐC GIA
THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC QUỐC TẾ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Phụ lục 3
BẢNG MÔ TẢ SỐ TÍN CHỈ THỰC TẬP CỦA CTĐT ĐƯỢC THỂ HIỆN CỤ THỂ THEO MÔN HỌC ĐỂ ĐẢM BẢO 8 TÍN CHỈ THỰC TẬP THEO QUY ĐỊNH TẠI THÔNG TƯ 17/2021/TT-BGDĐT

(Kèm theo Quyết định số 1182/QĐ-ĐHQT ngày 30 tháng 8 năm 2023 của Hiệu trưởng trường Đại học Quốc tế)

Tên môn học	Mã môn học	Số tín chỉ	Giờ qui đổi
Summer internship	CE314IU	03	90
Introduction to Civil Engineering	CE100IU	01	30
Steel structure project	CE312IU	01	30
Reinforced concrete project	CE313IU	01	30
Foundation project	CE402IU	01	30
Construction project	CE403IU	01	30
Tổng số tín chỉ		**08**	**240**