

MINISTRY OF EDUCATION AND TRAINING
HO CHI MINH CITY OPEN UNIVERSITY

COURSE SPECIFICATION

I. General information

1. Course title in Vietnamese: Cấp thoát nước công trình DD&CN
Course code: CENG5211
2. Course title in English: Water Supply and Drainage for Buildings
3. Mode of delivery:
 Face to Face (FTF) Online Blended
4. Language(s) for instruction:
 Vietnamese English Both
5. Knowledge/Skills:
 General Major
 Foundation Additional
 Discipline Graduation thesis
6. Credits

Total	Theory	Practice	Self-study (hr)
2	2	0	70

7. Administration of the course
 - a. Faculty/Division: Faculty of Civil Engineering/Division of Infrastructure
 - b. Academics: Dr. Bui Anh Kiet
 - c. Email: kiet.ba@ou.edu.vn
 - d. Working place: Room 705, Faculty of Civil Engineering, Ho Chi Minh City Open University, 35-37 Ho Hao Hon, Co Giang Ward, Dist. 1, HCMC.

II. Course overview

1. Course description:

Water Supply and Drainage for Buildings is a specialized course supplying knowledge relating to water supply network, water drainage network, and water supply and drainage for civil and industrial buildings.

- The content of water supply mentions knowledge, such as: basic concept of water supply system, hydraulic calculation of a water supply network for residential areas, and hydraulic calculation for a water supply system of civil and industrial buildings/construction sites.

- The content of water drainage mentions knowledge, such as: water drainage network of a residential areas, water drainage system (waste water drainage and rainwater drainage) of civil and industrial buildings.

2. Requirements:

STT/No.	Môn học điều kiện/ Requirements	Mã môn học/Code
1.	Pre-requisites	
	Not required	
2.	Preceding courses	

CLOs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
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1: Not satisfy

4: Much satisfy

2: Less satisfy

5: Very much satisfy

3: Medium satisfy

5. Textbooks and materials

a. Textbooks

[1] Assoc. Prof. Nguyen Thong, (2016). *Water supply and Drainage* (in Vietnamese). HCMC National University Publisher [48109]

b. Other materials

[2] Tran Thị Mai, (2013). *Water supply and Drainage for buildings* (in Vietnamese), Construction Publisher [39530]

[3] Hoang Hue, (2011). *Water supply and Drainage* (in Vietnamese), Construction Publisher [19205]

[4] Larry W.Mays, (2000). *Water Distribution Systems Handbook*, McGraw-Hill. [53877]

6. Student assessment

Type of assessment	Assessment methods	Assessment time	CLOs	Weight %
(1)	(2)	(3)	(4)	(5)
A1. Formative assessment	Calculation for a water supply/waste water drainage network of a residential area.	End of Chapter 1&2.	CLO1, CLO3	50%
A2. End-of-course assessment	Calculation for a water supply/waste water drainage system of a civil/industrial building.	End of course	CLO2, CLO3	50%

a) Assessment format, content and time:

Assessment format of A.1: Do self-essay at class

- Form: self-essay (*solve an exercise*)
- Content: chapter 1 and 2
- Time: (30÷45) minutes
- Assessment tool: Rubrics.

Assessment format of A.2: final exam.

- Form: self-essay
- Content: Chapter 3 and 4
- Time: (60÷70) minnutes
- Assessment tool: Rubrics.

b) Rubrics (attached in the appendix together with the Syllabus)

7. Teaching schedule (Percentage of Online teaching 16.7%):

Week/ Section	Content	CLOs	Teaching and learning								Student Assessment	Textbook s and materials
			Self-study		Face to Face (FTF)				Online (if any)			
					Theory		Practice		Theory			
			Activity	Hou r	Activity	Periods	Activity	Periods	Activity	Periods		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)				
1	Chapter 1: Design water supply network 1.1. Basic concepts of water supply system 1.2. Water sources, water collecting works, Water treatment	CLO1 CLO3	Access the LMS, review, do exercises, and preview the remaining content of chapter 1	10	- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge.	5					A1	[1] [3] [4]
2	Chapter 1: Design water supply network (cont) 1.3. Water supply network for residential sector 1.4. Water supply for construction site	CLO1 CLO3	Access the LMS, review, do exercises, and preview the content of chapter 2	15	- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge. - Instruct students to do the exercise: calculating the water supply network	5					A1	[1] [3] [4]
3	Chapter 2: Design water drainage network 2.1. Basic concepts of water drainage system 2.2. Classification of water drainage system	CLO1 CLO3	Access the LMS, review, do exercises, and preview the content of chapter 3	10	- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge.	5					A1	[1] [3] [4]

Week/ Section	Content	CLOs	Teaching and learning								Student Assessment	Textbook s and materials
			Self-study		Face to Face (FTF)				Online (if any)			
					Theory		Practice		Theory			
			Activity	Hou r	Activity	Periods	Activity	Periods	Activity	Periods		
(1)	(2)	(3)	(4)	(5)		(6)		(7)		(8)	(9)	
	2.3. Wastewater drainage network 2.4. Rainwater drainage network.											
4	Chapter 3: Water supply system for civil/industrial buildings 3.1. Basic concepts of water supply system. 3.2. Classification of water supply system. 3.3. Diagrams of water supply system. 3.4. Calculation of the required water pressure for buildings.	CLO2 CLO3	Access the LMS, review, do exercises, and preview the remaining content of chapter 3 and chapter 4	10	- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge. - Instruct students to do the exercise: calculating the required water pressure for a building.	5					A2	[1] [2] [3]
5	Chapter 3: (cont) 3.5. Design water supply system for buildings. 3.6. Determine parameters of underground water tank, water tank on roof of building, pumb.	CLO2 CLO3	Access the LMS, review, do exercises, and preview the content of chapter 4	10	- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge. - Instruct students to do the exercise: calculating the water supply system of a civil building	5					A2	[1] [2] [3]

Week/ Section	Content	CLOs	Teaching and learning								Student Assessment	Textbook s and materials
			Self-study		Face to Face (FTF)				Online (if any)			
					Theory		Practice		Theory			
			Activity	Hour	Activity	Periods	Activity	Periods	Activity	Periods		
(1)	(2)	(3)	(4)	(5)		(6)		(7)		(8)	(9)	
	Chapter 4: Water drainage system for civil/ industrial buildings 4.1. Function and components of water drainage system of civil/industrial buildings. 4.2. Classification of water drainage system 4.3. Structure of water drainage system											
6	Chapter 4: (cont) 4.4. Calculation of wastewater drainage system. 4.5. Calculation of rainwater drainage system 4.6. Connection inside water drainage pipe and outside water drainage network.	CLO2 CLO3	- Review all knowledge of the subject to prepare for the final exam	15					- Lecturer presents the theoretical content, incorporate specific examples and exercises for the respective theoretical knowledge. <i>(by uploaded video clip in LMS)</i> - Instruct students to do	5	A2	[1] [2] [3]

Week/ Section	Content	CLOs	Teaching and learning								Student Assessment	Textbook s and materials
			Self-study		Face to Face (FTF)				Online (if any)			
					Theory		Practice		Theory			
			Activity	Hour	Activity	Periods	Activity	Periods	Activity	Periods		
(1)	(2)	(3)	(4)	(5)		(6)		(7)		(8)	(9)	
									the exercise: calculating the water drainage system of a civil building			
Total			X	70	X	25	X	0	X	05		

8. Integrated matrix between CLOs and Teaching methods - Assessment methods

Week Section	Content	CLOs	Teaching and learning methods	Student assessment
(1)	(2)	(3)	(4)	(5)
1	Chapter 1: Design water supply network	<i>CLO1:</i> Can calculate the water demands of a typical residential area <i>CLO3:</i> Accurately calculate problems of: (a) residential area's water demands & usage regime, (b) tank & water tank capacity.	- Lecturer explains theoretical content; Instructions for solving specific examples/exercises for the corresponding theoretical content.	A1
2	Chapter 1: Design water supply network (cont)	<i>CLO1:</i> Can calculate hydraulic regime of a truncated and/or circular network. <i>CLO3:</i> Accurately calculate problems of a truncated and/or circular network.	- Students listen to lectures, do examples/exercises as requested by the the lecturer; Preview lectures for the next class on LMS.	
3	Chapter 2: Design water drainage network	<i>CLO1:</i> Can calculate hydraulic regime of a wastewater drainage network of a residential area.		

Week Section	Content	CLOs	Teaching and learning methods	Student assessment
(1)	(2)	(3)	(4)	(5)
		<i>CLO3</i> : Accurately calculate problems of a domestic wastewater, rainwater drainage network of a typical residential area.		
4	Chapter 3: Water supply system for civil/industrial buildings	<i>CLO1</i> : Can design a water supply system of civil/industrial buildings <i>CLO3</i> : Can choose the appropriate water supply diagram, determine the required water pressure at the most unfavorable location, determine the water flow rate for different types of buildings.		A2
5	Chapter 3: Water supply system for civil and industrial buildings (cont) Chapter 4: Water drainage system for civil and industrial buildings	<i>CLO1</i> : Can designed: (a) Water supply system for civil/industrial buildings (b) Water Drainage system (domestic wastewater, rainwater) for civil/industrial buildings. <i>CLO3</i> : Accurately calculate problems of water supply network and drainage network inside the civil/industrial buildings.		
6	Chapter 4: Water drainage system for civil and industrial buildings (cont)	<i>CLO1</i> : Can designed: (a) Water drainage system (domestic wastewater, rainwater) for civil/industrial buildings (cont) (b) Water Drainage system (domestic wastewater, rainwater) for civil/industrial buildings. <i>CLO3</i> : Accurately calculate problems of water supply network and drainage network of the civil/industrial buildings.	- Lecturer provides lectures videos + scripts; Instructions for solving examples + exercises on LMS - Students learn on LMS, perform examples/exercises as suggested by the lecturer.	

9. Course policy

- Regulations on submitting assignments, midterm test, and final exam: Students should attend midterm test and final exams fully and on time. Students, who do not attend the midterm test/final exam, will be received a "Zero" grade.
- Attendance regulations: Students attend class fully and on time.
- Regulations on banning exams: Lecturer takes attendance randomly. If students are absent more than 2 times, they will not be eligible for the final exam.
- Classroom rules: Students need to follow the rules of Ho Chi Minh City Open University.