Appendix 4
COURSE SPECIFICATION

OPEN UNIVERSITY OF HCMC
Faculty of Civil Engineering

COURSE SPECIFICATION

I. Course identification

1. Course title: Architecture in Civil Engineering (CENG5206)

2. Knowledge/ Skill area

☐ Pedagogy general ☒ Speciality knowledge

☐ Basic knowledge ☐ Supplementary knowledge

☐ Foundation knowledge ☐ Thesis

3. Number of credits

Total	Theory	Practice	Self-study
2(2,0,4)	2	0	4

4. Course responsibility

a. Faculty: Faculty of Civil Engineering
b. Lecturer: M.Des Nguyen Ngoc Uyen
c. Personal email: uyen.nngoc@ou.edu.vn
d. Address: Room 705, 35-37 Ho Hao Hon Street, Co Giang Ward, District 1, HCM city

II. Course Information

1. Course description

Architecture in Civil Engineering course presents approaches to the standards and norms in the field of Architectural design for buildings, particularly in the architectural design drawings: from preliminary to detailed. This course also presents the principles in the architectural design process based on norms and criteria from the use of human living space. In order to connect Architects' designs to the real works of Civil Engineers, the subject broadens and clarifies design ideas concretized by architectural drawings, especially for houses and public buildings.

2. Condition course

No.	Condition course	Code
1.	Prerequisite course	
	No request	
2.	Former course	
	Technical drawing in Construction	TECH6301
3.	Parallel course	
	No request	

1. Learning outcomes

Learning outcomes	Descriptions	Achievement standard
CO1	*Knowledge:* - To understand the basic knowledge of the field of Architectural design (reading architecture drawings from preliminary to details); understand the theoretical bases of Architectural design. - To fully understand the basic knowledge of drawings and be able to present the technical drawings with construction industry standards. - To provide with a sound understanding of the fundamental principles, methods, analysis and synthesis in architectural design and form the ability to think analytically, evaluate and creatively when accessing information, architecture projects;	PLO3 PLO4
CO2	*Skill:* - To equip the ability to understand and use the knowledge of Architectural design in structural calculations by Civil engineers.	PLO3 PLO4
CO3	*Attitude:* - To train skills in reading comprehension and demonstrating architectural technical drawings, serving the professional works of civil engineers.	PLO14, PLO15, PLO16

2. Course achievements

Learning outcomes	Course achievement (CLO)	Description
CO	CLO1.1	Know and understand how to present and set up architectural design documents in accordance with the technical construction standards; architectural design documenting process, research methods when designing an architectural project.
	CLO1.2	Know the views, scientific theories, architectural history; understanding of architectural plan design, architectural space layout. Understand and analyse the principles of measuring in architecture.
	CLO1.3	Understand the design of all types of civil works, some basic design principles applicable to each type of civil engineering today. Creative possibilities for architectural spaces at the preliminary design level.
CO	CLO2.1	Know how to use drawing tools (pens, ruler, pair of compasses ...) suitable for the architectural drawing process; Enhances the ability to use Auto-CAD software to create architectural drawings.
CO	CLO3.1	Requiring accuracy, meticulousness and science in setting up technical drawings, consciously respect

Learning outcomes	Course achievement (CLO)	Description
		standards specified in technical drawings.

Integrator matrix

CLOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12	PLO 13	PLO 14	PLO 15	PLO 16
1.1			4													
1.2				4												
1.3				5												
2.1										3			4			
3.1														3	3	3

Response level: (1) very low; (2)low; (3)medium; (4)high; (5)completely

3. Courseware

a. Curriculum

Books, main curriculum

[1] Dr. Arch. Ta Truong Xuan, (2004), *Principles of architectural design*, Hanoi Architectural University, Construction Publishing, Hanoi.

b. Reference documents

[2] Dr. Arch. Nguyen Duc Thiem, (2005), *Design Principles of Residential Housing: Housing and public housing, Science and Technology Publishing, Oct 2005*.

[3] Phan Tan Hai, Vo Dinh Diep, Cao Xuan Luong, (2012). Principles of structural design, Construction Publishing.

[4] Data Architects Neufert (Data for Architects), Ho Chi Minh City Science and Technology Publishing.

[5] Francis D.K. Ching, *Architecture of Physical Geometry, Space and Order*, Compiled by Pham Thanh Nhan, Statistical Publishing.

[6] Other documents related to Technical Drawing and AutoCAD Tutorial, students need to choose a new update new knowledge.

c. Software:

[5] AutoCAD

4. Course assessment

Component assessment	Lesson assessment	Time	Learning outcomes	Rate %
(1)	(2)	(3)	(4)	
A1. Essay (or Presentation) or attendance score (Essay score + attendance score is calculated as 1/3 midterm review score, percentage 10%)	A.1.1 Topics are assigned in typical knowledge of architecture.	After finishing chapter 2: implement and submit papers at session 3 -4	CLO1.1 CLO1.2	15%
A2. Assignment (assignment is calculated as 1/3	A.2.1. Design exercises for houses	After finishing chapter 3: implement and	CLO1.1 CLO1.2	15%

Component assessment	Lesson assessment	Time	Learning outcomes	Rate %
(1)	(2)	(3)	(4)	
midterm review score, percentage 10%)		submit papers at last session	CLO1.3 CLO2.1 CLO3.1	
A3. Mid-term test (Score is calculated as 1/3 column of midterm review score, percentage 10%)	A.3.1. Essay or multiple-choice questions in chapters 1-4. A.3.2. The hand-drawn part is combined knowledge, the main content in chapters 5-6	After finishing chapter 5	CLO1.1 CLO1.2 CLO2.1 CLO3.1	20%
			Total	50%
A4. End of term examination	A.2.1 All of chapters	End of term	CLO1.1 - CLO1.2 CLO1.3 CLO2.1 - CLO3.1	50%
Total				100%

5. Schedule

(4.5 x 50mins/session)

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 1	**Chapter 1:** INTRODUCE DESIGN: Architecture in Civil Engineering (4.5 x 50 mins) 1.1.Concept, Definition of Architecture - Brief history of architecture - Classification and hierarchy of buildings - Elements of architecture - Characteristics of architecture. 1.2. Principles of establishing architectural design drawings: master	CLO1.1 CLO1.2	*Lecturer:* - Teach and give examples, images for students to grasp basic knowledge. - Suggest good topics about architecture for students to explore and research for essays or group presentations. *Students:* + Class: listen and draw some illustrations. + Home: review knowledge, look up on the internet		[1], [2], [3]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	plan, floor plans, elevations, sections, roof plans, structural details. 1.3. Concept of architectural physics: lighting, ventilation and heat insulation, sound insulation in architecture.		information related to chapter 1, and read books +Research and select thesis topic or group presentation. (9 x 50 mins).		
Session 2	**Chapter 2**: PROFILE OF ARCHITECTURE DESIGN PROJECT, CONSTRUCTION DESIGN METHODOLOGY (4.5 x 50 mins) 2.1. Foundations of architectural design documents: Design tasks, construction sites, legal documents and regulations on construction, estimated construction budget. 2.2. Profile of architectural work design projects 2.3. Thesis of architectural design	CLO1.1 CLO1.2	*Lecturer:* - Teach and give examples, images for students illustrate the design process. + Give some tutorials about the assignment. *Students:* + Class: listening to lectures; the example given by the teacher. + Home: review knowledge, study for the assignment, read chapter 3 + Doing essay or group presentations. (9 x 50 mins).		[1], [2], [3]
Session 3	**Chapter 3**: PRINCIPLES OF ARCHITECTURAL FLOOR PLAN LAYOUT (4.5 x 50 mins) 3.1. General concept 3.2. Meaning of floor plan layout, foundations to establish floor plan layout	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* - Teach and give examples, images for students to design floor plans. *Students:* + Class: listen and draw some illustrations. + Home: review knowledge, start doing assignment, read chapter 5		[1], [2], [3], [4]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	3.3. Analysis the relationship between functional areas 3.4. Types of floor plan layout 3.5. Technical, artistic and economic factors through floor plan layout 3.6. Learn more about feng shui in architecture		+ Students submit essays or doing group presentations. (9 x 50 mins).		
Session 4	**Chapter 4**: PRINCIPLES OF SPACE SHAPED LAYOUT OF ARCHITECTURE WORKS (4.5 x 50 mins) 4.1. Overview 4.2. Rule of spatial layout of architectural works: Contrast and variation; Rhythms; Primary and secondary; Relationship and separation 4.3. Balance and stability in architectural layout 4.4. The scale and measurement in architecture 4.5. Special laws of human vision	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* + Teach and give examples, images for students about architectural space shaped layout. + **Mid-term test** *Students:* + Class: listening and doing exercise. + Home: review chapter 4, read chapter 5. + Students submit essays or doing group presentations. + Research for the assignment. (9 x 50 mins).		[1], [2], [3], [5]
Session 5	**Chapter 5**: Principles of Dimensional Determination in Architectural Design (4.5 x 50 mins)	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	**Online on LMS** *Lecturer:* + Teach and give examples, images for students about architectural housing.		[1], [2], [3]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	5.1. General principles. 5.2. Dimensions of human and equipment: Standard dimensions in civil houses, standard dimensions in public spaces 5.3. Room dimension: Unit of measure; Design criteria for all type rooms; Clearance height		+ Instruct assignment in detail so that students can start doing it at home. *Students:* + Class: listening online. + Do homework + Home: review chapter 5, read chapter 6. (9 x 50 mins).		
Session 6	**Chapter 6**: PRINCIPLES OF HOUSE DESIGN (4.5 x 50 mins) 6.1. Define; Classify; Functional parts of the house. 6.2. Principles of residential space design: Design basic functional rooms in residential space; Ventilation and lighting in living space; Standard sizes of some equipment and basic layout principles. 6.3. Common types of housing	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	**Online on LMS** *Lecturer:* + Teach and give examples, images for students about architectural housing. + Instruct assignment in detail so that students can doing it at home. *Students:* + Class: listening online. + Do assignment + Home: review chapter 6, read chapter 7. (9 x 50 mins).		[1], [2], [3]
Session 7	**Chapter 7**: PRINCIPLES OF DESIGNING PUBLIC WORKS (4.5 x 50 mins) 7.1. Define; Classify; Properties of public works; Functional parts in public works.	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	*Lecturer:* + Teach and give examples, images for students about architectural housing. + Instruct assignment in detail so that students can doing		[1], [2], [3] [6]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	7.2. The design principles of some basic public spaces. 7.3. Traffic in public works 7.4. Notes in the design of public spaces		it at home. *Students:* + Class: listening + Do assignment and hand in it on time. + Home: review chapter 1-7. (9 x 50 mins).		

Evening class teaching plan (3 x 50 mins/session)

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 1	**Chapter 1:** INTRODUCE DESIGN: Architecture in Civil Engineering (3 x 50 mins) 1.1. Concept, Definition of Architecture - Brief history of architecture - Classification and hierarchy of buildings - Elements of architecture - Characteristics of architecture. 1.2. Principles of establishing architectural design drawings: master plan, floor plans, elevations, sections, roof plans, structural details. 1.3. Concept of architectural physics: lighting, ventilation and heat insulation, sound insulation in architecture.	CLO1.1 CLO1.2	*Lecturer:* - Teach and give examples, images for students to grasp basic knowledge. - Suggest good topics about architecture for students to explore and research for essays or group presentations. *Students:* + Class: listen and draw some illustrations. + Home: review knowledge, look up on the internet information related to chapter 1, and read books +Research and select thesis topic or group presentation. (6 x 50 mins).		[1], [2], [3]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 2	**Chapter 2**: PROFILE OF ARCHITECTURE DESIGN PROJECT, CONSTRUCTION DESIGN METHODOLOGY (3 x 50 mins) 2.1. Foundations of architectural design documents: Design tasks, construction sites, legal documents and regulations on construction, estimated construction budget. 2.2. Profile of architectural work design projects 2.3. Thesis of architectural design	CLO1.1 CLO1.2	*Lecturer:* - Teach and give examples, images for students illustrate the design process. + Give some tutorials about the assignment. *Students:* + Class: listening to lectures; the example given by the teacher. + Home: review knowledge, study for the assignment, read chapter 3 + Doing essay or group presentations. (6 x 50 mins).		[1], [2], [3]
Session 3	**Chapter 3**: PRINCIPLES OF ARCHITECTURAL FLOOR PLAN LAYOUT (3 x 50 mins) 3.1. General concept 3.2. Meaning of floor plan layout, foundations to establish floor plan layout 3.3. Analysis the relationship between functional areas	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* - Teach and give examples, images for students to design floor plans. *Students:* + Class: listen and draw some illustrations. + Home: review knowledge, doing assignment, read chapter 3 + Students submit essays or doing group presentations. (6 x 50 mins).		[1], [2], [3], [4]
Session 4	**Chapter 3 (cont.)**: PRINCIPLES OF ARCHITECTURAL FLOOR PLAN LAYOUT (3 x 50 mins)	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* - Teach and give examples, images for students to design floor plans.		[1], [2], [3], [4]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	3.4. Types of floor plan layout 3.5. Technical, artistic and economic factors through floor plan layout 3.6. Learn more about feng shui in architecture		*Students:* + Class: listen and draw some illustrations. + Home: review knowledge, doing assignment, read chapter 5 + Students submit essays or doing group presentations. (6 x 50 mins).		
Session 5	**Chapter 4**: PRINCIPLES OF SPACE SHAPED LAYOUT OF ARCHITECTURE WORKS (3 x 50 mins) 4.1. Overview 4.2. Rule of spatial layout of architectural works: Contrast and variation; Rhythms; Primary and secondary; Relationship and separation	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* + Teach and give examples, images for students about architectural space shaped layout. *Students:* + Class: listening and doing exercise. + Home: review chapter 4, read chapter 4. + Students submit essays or doing group presentations. + Research for the assignment. (6 x 50 mins).		[1], [2], [3], [5]
Session 6	**Chapter 4**: PRINCIPLES OF SPACE SHAPED LAYOUT OF ARCHITECTURE WORKS (3 x 50 mins) 4.3. Balance and stability in architectural layout 4.4. The scale and measurement in architecture 4.5. Special laws of	CLO1.1 CLO1.2 CLO1.3	*Lecturer:* + Teach and give examples, images for students about architectural space shaped layout. + **Mid-term test** *Students:* + Class: listening and doing exercise. + Home: review chapter 4, read chapter 5.		[1], [2], [3], [5]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	human vision		+ Students submit essays or doing group presentations. + Research for the assignment. (6 x 50 mins).		
Session 7	**Chapter 5**: Principles of Dimensional Determination in Architectural Design (3 x 50 mins) 5.1. General principles. 5.2. Dimensions of human and equipment: Standard dimensions in civil houses, standard dimensions in public spaces 5.3. Room dimension: Unit of measure; Design criteria for all type rooms; Clearance height	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	**Online on LMS** *Lecturer:* + Teach and give examples, images for students about architectural housing. + Instruct assignment in detail so that students can start doing it at home. *Students:* + Class: listening online. + Do homework + Home: review chapter 5, read chapter 6. (6 x 50 mins).		[1], [2], [3]
Session 8	**Chapter 6**: PRINCIPLES OF HOUSE DESIGN (3 x 50 mins) 6.1. Define; Classify; Functional parts of the house. 6.2. Principles of residential space design: Design basic functional rooms in residential space; Ventilation and lighting in living space; Standard sizes of some equipment	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	**Online on LMS** *Lecturer:* + Teach and give examples, images for students about architectural housing. + Instruct assignment in detail so that students can doing it at home. *Students:* + Class: listening online. + Do assignment		[1], [2], [3]

Week/session	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	and basic layout principles. 6.3. Common types of housing		+ Home: review chapter 6, read chapter 7. (6 x 50 mins).		
Session 9	**Chapter 7**: PRINCIPLES OF DESIGNING PUBLIC WORKS (3 x 50 mins) 7.1. Define; Classify; Properties of public works; Functional parts in public works. 7.2. The design principles of some basic public spaces. 7.3. Traffic in public works 7.4. Notes in the design of public spaces	CLO1.1 CLO1.2 CLO1.3 CLO2.1 CLO3.1	**Online on LMS** *Lecturer:* + Teach and give examples, images for students about architectural housing. + Instruct assignment in detail so that students can doing it at home. *Students:* + Class: listening + Do assignment and hand in it on time. + Home: review chapter 1-7. (6 x 50 mins).		[1], [2], [3] [6]
Session 10	**Review & Submit assignment** (3 x 50 mins) Do the assignment: print and hand in the finishing assignment.	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	*Lecturer:* + Review for students key knowledge from chapters 1-7 + Get assignment *Students:* + Class: listening + Do assignment and hand in it on time. + Home: review chapter 1-7. (6 x 50 mins).		[1], [2], [3]

6. Course regulation

- Regulations on submitting assignments and tests: students attend classes on time. Students who miss the midterm exam and the unscheduled submission of the assignment will receive "**0**" score for the respective content.

- Provisions on attendance: lecturers unexpectedly take attendance, students are not allowed to miss more than 2 theoretical lessons.

- Classroom Rules: Students need to follow the rules of Ho Chi Minh City Open University.