Appendix 4 COURSE SPECIFICATION

OPEN UNIVERSITY OF HCMC Faculty of Civil Engineering

COURSE SPECIFICATION

I.	Course ider	ntification				
1.	Course title:	Foundation (CENG530	3)			
2.	Knowledge/	Skill area				
	Pedagogy ge	eneral	\boxtimes	Speciality knowledge		
	Basic knowl	ledge		Supplem	entary knowledge	
	☐ Foundation knowledge			Thesis		
3. Number of credit						
	Total	Theory	Pract	ice	Self-study	

4. Course responsibility

a. Falcuty:

3 (3,0,6)

Faculty of Civil Engineering

b. Lecturer:

Dr. Vo Nguyen Phu Huan

c. Personal email:

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District 1, HCM city

II. Course Information

1. Course description

This course belongs to limited speciality group. This is a very important course because students have to learn about these invisible structures under ground. These structures have a duty to bear all loading from above structures.

2. Condition course

No.	Condition course	Code
1.	Prerequisite course	
	No request	
2.	Former course	
	Soil mechanics	CENG5302
	Concrete structure 1	CENG6304
3.	parallel course	
	No request	

3. Learning outcomes

Learning outcomes	Descriptions	Achivement standard
CO1	Kowledge:	PLO4.3

Learning outcomes	Descriptions	Achivement standard
	 To provide the way to classify foundations and understand working principle of foundation and soil. To understand the way to choose loads from structures above and find the correctly input data. To solve these case study of foundation in these stages of construction. 	
CO2	Skill: - to have the skill that can asses the logical foundation alternate - To solve these technical problems, give these the suitable solution and correctly assesment	PLO10, PLO12
CO3	 Attitude: Serious and careful in foundation design. To coordinate closely between theory, practice and experence in foundation design To have style of work 	PLO14, PLO15, PLO16

4. Course achivements

Learning outcomes	Course achivement (CLO)	Description				
	CLO1.1	Know to aplly the geology, material and structure knowledge in foundation assessment.				
CO	CLO1.2	Know to analyse input datas and use them with in force standard.				
CO	CLO1.3	Know to use and check these equation design				
	CLO1.4	Know to design these basic foundation: pad foundation, strip foundation, pile foundation				
	CLO1.5	Know to display foundation drawing				
СО	CLO2.1	Know to solve technical problems and give these the suitable solution and correctly assesment				
	CLO2.2	Know to use the speciality software				
СО	CLO3.1	Request: carefull, correctly and safety in foundation design				

Intergrator matrix

CLO	PLO															
S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.1			X													
1.2			X					X								
1.3			X													
1.4				X				X								

1.5		X							
2.1					X				
2.2					X				
3.1							X	X	

5. Courseware

a. Curriculum

Book, main curriculum

- [1] Chau Ngoc An, (2014). Foundation, Nationnal University HCM Publishing.
- [2] Muni Budhu, (2011). *Soil mechanics and Foundation*, 3^{rd} edition, Wiley&Son Publishing.
- b. Reference documents
 - [3] Le Anh Hoang, (2012). Foundation, Construction Publishing.
 - [4] Das, B, (2016). Principles of foundation engineering. PWS Engineering Publishing.
- c. Sofeware:
 - [5] AutoCAD

6. Course assessment

Component assessment	Lesson assessment	Time	Learning outcomes	Rate %
(1)	(2)	(3)	(4)	
A1. Midterm assessment 30%	A.1.1 To check these stability, intensity and deformation condition of pad foundation with eccentric loads	After finshing chapter 2	CLO1.1 CLO1.2 CLO1.3 CLO1.4 CLO2.1	50%
A2. End of term examination	A.2.1 All of chapters	End of term	CLO1.1-CLO1.5 CLO2.1-CLO2.2, CLO3.1	50%
Total				100%

7. Schedule

(4.5 x 50mins/session)

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 1	Chapter 1: Basic	CLO1.1	Lecturer:		[1], [2], [3]
	knowledge in	CLO1.2	Teach and give these		
	foundation design		examples in		
	(4.5 x 50 mins)		classroom		
	1.1.Concept,		Student:		
	classify		+ Class: listen and do		
	foundation		the examples.		
	1.2.Featured		+ Home: review		
	foundations.		knowledge and read		
	1.3.Soil gound		books (9 x 50 mins).		
	conception				

Week/sessio	Content	Learning	Detail	Assessment	Curriculum
n (1)		outcomes			
(1) Session 2	(2) Chapter 1:	(3) CLO1.2	(4) Lecturer:	(5)	(6) [1], [2], [3]
Session 2	(cont.) Basic	CLO1.2 CLO1.3	Teach and give these		[1], [2], [3]
	knowledge in	CE01.3	examples in		
	foundation design		classroom		
	(4.5 x 50 mins)		Student:		
	1.4. Loads and		+ Class: listen and do		
	limit states		the examples.		
	1.5. Soil of		+ Home: review		
	characteristics in		knowledge and read		
	foundation design		books (9 x 50 mins).		
Session 3	Chapter 2:	CLO1.3	Lecturer:		[1], [2], [3]
	Shallow	CLO1.4	Teach and give these		
	foundation design	CLO2.1	examples about pad		
	(4.5 x 50 mins) 2.1. Pad	CLO3.1	foundation (axial		
	foundation with		loads) Student:		
	axial loads		+ Class: listen and do		
	axiai ioaus		the examples.		
			+ Home: review		
			knowledge and read		
			books (9 x 50 mins).		
Session 4	Chapter 2	CLO1.3	Lecturer:		[1], [2], [3]
	(cont.): Shallow	CLO1.4	Teach and give these		
	foundation design	CLO2.1	examples about pad		
	(4.5 x 50 mins)	CLO3.1	foundation (axial		
	2.1. Pad		loads)		
	foundation with		Student:		
	axial loads (cont.)		+ Class: listen and do		
	2.2. Pad		the examples.		
	foundation with eccentric loads		+ Home: review knowledge and read		
	eccentific toads		books (9 x 50 mins).		
Session 5	Chapter 2	CLO1.3,	Lecturer:		[1], [2], [3]
Bession 5	(cont.): Shallow	CLO1.4,	Teach and give these		[1], [2], [3]
	foundation design	CLO1.5,	examples about pad		
	(4.5 x 50 mins)	CLO2.1,	foundation		
	2.2. Pad	CLO3.1	(eccentric loads)		
	foundation with		Student:		
	eccentric loads		+ Class: listen and do		
	(cont.)		the examples.		
			+ Home: review		
			knowledge and read		
Socian 6	Chantar 2	CL O1 2	books (9 x 50 mins).		[1] [0] [2]
Session 6	Chapter 2 (cont.): Shallow	CLO1.3, CLO1.4,	Lecturer: Teach and give these		[1], [2], [3]
	foundation design	CLO1.4, CLO1.5,	examples about strip		
	(4.5 x 50 mins)	CLO1.3, CLO2.1,	foundation		
	2.3. Strip	CLO2.1, CLO3.1	Student:		
	foundation	2203.1	+ Class: listen and do		
	Touridation		Class. Hstell allu u0		

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
			the examples. + Home: review knowledge and read books (9 x 50 mins).		
Session 7	Chapter 2	CLO1.3,	Lecturer:		[1], [2], [3]
	(cont.): Shallow foundation design (4.5 x 50 mins) 2.3. Strip foundation (cont.) 2.4 . Mat foundation	CLO1.4, CLO1.5, CLO2.1, CLO3.1	Teach and give these examples about strip foundation Student: + Class: listen and do the examples. + Home: review knowledge and read books (9 x 50 mins).		[-], [-], [-]
Session 8	Chapter 3: Pile foundation (4.5 x 50 mins) Midterm assessment 3.1. Pressed pile foundation	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	Lecturer: Teach and give these examples about pressed pile foundation Student: + Class: listen and do the examples. + Home: review knowledge and read books (9 x 50 mins).		[1], [2], [3]
Session 9	Chapter 3: Pile foundation (cont.) (4.5 x 50 mins) 3.1. Pressed pile foundation (cont.)	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples about pressed pile foundation Student: + Class: listen and do the examples. + Home: review knowledge and read books (9 x 50 mins).		[1], [2], [3]
Session 10	Chapter 3: Pile foundation (cont.) (4.5 x 50 mins) 3.2. Bored pile foundation (cont.)	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples about bored pile foundation Student: + Class: listen and do the examples. + Home: review knowledge and read books (9 x 50 mins).		[1], [2], [3]

(3 x 50 mins/session)

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 1	Chapter 1: Basic knowledge in foundation design (3 x 50 mins) 1.1.Concept, classify foundation 1.2.Featured foundations.	CLO1.1 CLO1.2	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 2	Chapter 1: Basic knowledge in foundation design (cont.) (3 x 50 mins) 1.3.Soil gound conception 1.4 Loads and limit state	CLO1.1 CLO1.2	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 3	Chapter 1: Basic knowledge in foundation design (cont.) (3 x 50 mins) 1.5 Soil of characteristics in foundation design	CLO1.2 CLO1.3	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 4	Chapter 2: Shallow foundation design (3 x 50 mins) 2.1. Pad foundation with axial loads	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 5	Chapter 2: Shallow foundation design (cont.) (3 x 50 mins)	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and		[1], [2], [3]

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	2.1. Pad foundation with axial loads (cont.)		do the examples. + Home: review knowledge and read books (6 x 50 mins).		
Session 6	Chapter 2: Shallow foundation design (cont.) (3 x 50 mins) 2.2. Pad foundation with eccentric loads	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 7	Chapter 2: Shallow foundation design (cont.) (3 x 50 mins) 2.2. Pad foundation with eccentric loads (cont.)	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 8	Chapter 2: Shallow foundation design (cont.) (3 x 50 mins) 2.3. Strip foundation	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 9	Chapter 2: Shallow foundation design (cont.) (3 x 50 mins) 2.3. Strip foundation (cont.)	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 10	Chapter 2: Shallow	CLO1.3, CLO1.4,	Lecturer: Teach and give		[1], [2], [3]

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
	foundation design (cont.) (3 x 50 mins) 2.3. Strip foundation (cont.) 2.4. Mat foundation	CLO1.5, CLO2.1, CLO3.1	these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		
Session 11	Chapter 3: Pile foundation (3 x 50 mins) Midterm assessment 3.1. Pressed pile foundation	CLO1.3, CLO1.4, CLO1.5, CLO2.1, CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 12	Chapter 3: Pile foundation (3 x 50 mins) 3.1. Pressed pile foundation (cont.)	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 13	Chapter 3: Pile foundation (3 x 50 mins) 3.1. Pressed pile foundation (cont.)	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]
Session 14	Chapter 3: Pile foundation (3 x 50 mins) 3.2. Bored pile foundation	CLO1.3 CLO1.4 CLO2.1 CLO3.1	Lecturer: Teach and give these examples in classroom Student: + Class: listen and do the examples. + Home: review knowledge and read books (6 x 50 mins).		[1], [2], [3]

Week/sessio n	Content	Learning outcomes	Detail	Assessment	Curriculum
(1)	(2)	(3)	(4)	(5)	(6)
Session 15	Chapter 3: Pile	CLO1.3	Lecturer:		[1], [2], [3]
	foundation (3 x	CLO1.4	Teach and give		
	50 mins)	CLO2.1	these examples in		
	3.2. Bored pile	CLO3.1	classroom		
	foundation		Student:		
	(cont.)		+ Class: listen and		
			do the examples.		
			+ Home: review		
			knowledge and read		
			books (6 x 50 mins).		