



Course Specifications

Muharram 1437 H

Institution:	Majmaah University
Academic Department :	Civil and Environmental Engineering
Programme :	Civil Engineering
Course :	Soil Mechanics and Foundation Engg.-2
Course Coordinator :	Prof. Syed Mohammad Abbas
Programme Coordinator :	Dr. Sameh S Ahmed
Course Specification Approved Date :	10/05/1437 H



A. Course Identification and General Information

1 - Course title :	Soil Mechanics & Foundation Engineering-2	Course Code:	CE-311
2. Credit hours :	3 (2,1,2)		
3 - Program(s) in which the course is offered:	Civil Engineering		
4 – Course Language :	English		
5 - Name of faculty member responsible for the course:	Prof. S. M. Abbas		
6 - Level/year at which this course is offered :	7/3		
7 - Pre-requisites for this course (if any) :	CE-210		
8 - Co-requisites for this course (if any) :	None		
9 - Location if not on main campus :	(Yahya Building)		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	70%
B - Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	10%
D - e-learning	<input checked="" type="checkbox"/>	What percentage?	20%
E - Correspondence	<input type="checkbox"/>	What percentage?	
F - Other	<input type="checkbox"/>	What percentage?	
Comments: Blended: placing questions and topic of discussion online, with discussion in the classroom.			

B Objectives

What is the main purpose for this course?

- To investigate the site consisting of soils/ rocks
- To evaluate the properties of soils/ rock necessary for various type of foundations.
- To learn the types of foundations.
- To estimate the bearing capacities of shallow and deep foundations.
- To design deep foundation based on known values of bearing capacities.
- To design the group piles and well foundations.
- To design the sheet pile walls.
- To analyze and design the retaining walls.

Briefly describe any plans for developing and improving the course that are being implemented :

The course content is as per the trend in the field and time to time information is gathered to improve the course as per the worldwide research work.



C. Course Description

1. Topics to be covered

List of Topics	No. of Weeks	Contact Hours
Soil and Rock Investigations	2	10
Properties evaluation for design of foundations	1	5
Types of Foundations	1	5
Bearing Capacity Concept	1	5
Determination of Bearing Capacities of Shallow Foundations	2	10
Midterm - 1	1/2	5/2
Bearing Capacity of Deep Foundations	1	5
Design of Pile Foundation	2	10
Introduction to Caissons	1	5
Sheet Pile Walls	1	5
Midterm - 2	1/2	5/2
Retaining Walls	2	10
Total	15	75

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	30	15	30	-	-	75
Credit	2	1	2	-	-	3

3. Additional private study/learning hours expected for students per week.

3-4





4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	The student will be able to record soil/ rock investigation data and reproduce in the graphical format.	<ul style="list-style-type: none"> Introducing each topic with actual and real problems Every topic is explained with some examples Giving Home works/ assignments on the topics to develop more skills 	<ul style="list-style-type: none"> Class discussions Quizzes Mid Term exams End Exam
1.2	The student will be able to describe types of foundations and retaining walls.		
2.0	Cognitive Skills		
2.1	The student will be able to analyze soil/ rock investigation data for determination of various properties.	<ul style="list-style-type: none"> During the lecture the students are asked such questions that they think deeply Assignments, quizzes are such designed, they require thinking Students are asked to question themselves to develop good perception of topics 	<ul style="list-style-type: none"> In-Class questions Quizzes Mid Term exams End Exam
2.2	The student will be able to calculate various engineering properties from the data obtained from laboratory.		
2.3	The student will be able to estimate the bearing capacity of shallow and deep foundations and be able to design them.		
2.4	The student will be able to analyze and design earth retaining structures.		
3.0	Interpersonal Skills & Responsibility		
	None		
4.0	Communication, Information Technology, Numerical Skills		
4.1	The students will be able to illustrate writing skills in preparing the soil/ rock investigation report.	<ul style="list-style-type: none"> Asking the students to speak on a particular topic. Before giving response to the students' questions, other students are asked to respond first 	<ul style="list-style-type: none"> Evaluation of oral presentations Laboratory Report evaluation Viva voce exams Homework and other exams
4.2	The student will be able to demonstrate their oral communication skills.		
5.0	Psychomotor Skill		
5.1	N/A		





5. Schedule of Assessment Tasks for Students during the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	First midterm exam	7	15
2	Second midterm exam	14	15
3	Quizzes, and homework assignments	Any time	15
4	Laboratory Reports	14	15
5	Final Exam	17	40
	Total		100

D. Student Academic Counseling and Support

Almost every day one hour is marked as Office Hour in the Time Table for academic counseling. During this hour the students consult individually or in a group about their difficulties in the subject and other relevant matters.

E. Learning Resources

1. List Required Textbooks :

- Das, B, M. "Principle of Geotechnical Engineering", Thomson-Engineering, Latest edition.

2. List Essential References Materials :

- Bowles, J. E., "Engineering Properties of Soils and their Measurements", McGraw-Hill, Latest edition.

3. List Recommended Textbooks and Reference Material :

- B.C. Punmia , "Soil Mechanics and Foundation Engg" 2005

4. List Electronic Materials :

- List of online books
- Course materials on the instructor's website

5. Other learning material :

- Lecture Notes





F. Facilities Required

1. Accommodation

- The lecture rooms are not properly orientated, therefore, the class rooms of proper size and proper podium location is required.
- Laboratory space is too short, require proper laboratory space.

2. Computing resources

- Available for students in the computer labs.
- Smart boards are available in the class rooms but not working, therefore, functional smart boards are required.

3. Other resources

- Some Laboratory equipment are required for the experiments.
- Different type of soils and Leighton Buzzard sand is required.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Importance of feedback is first explained then the feedback is taken in terms of surveys and questionnaire as to how the teaching can be improved like speed/ more problems/ more ppts/ more assignments etc.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Feedback form is filled by the students and their feedback are discussed in the committee.

3 Processes for Improvement of Teaching :

- The strategy is reviewed at mid-semester by assessing Mid Term-1 result and modifying it.
- Students are shown photographs/ videos related to the topics.

4. Processes for Verifying Standards of Student Achievement

- Independent checking of End-Semester assessment by another faculty member.
- Checking of course files by the Quality Centre Nominee and give suggestions for improvement.

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Mid Semester review.
- End Semester review.
- Student feedback at the end of semester.
- Feedback of the assessment at the beginning of the next semester.
- Departmental meeting at the beginning of the next semester on improvements suggested.





Course Specification Approved
Department Official Meeting No (11) Date 10 / 05 / 1437 H

Course Coordinator

Name : Prof. S.M. Abbas
Signature : *Abbas*
Date : 02/ 04 / 1437 H

Department Head

Name : Dr. Abdullah AlShehri
Signature : *AlShehri*
Date : 10/ 05 / 1437 H

