Course Number and Name	CE 332-3 Geotechnical Engineering 2
Credits hours	3 Credits hours
Contact hours	5 Contact hours; 2 for lecture, 0 for tutorial and 3 for practical
Instructor/s name/s	Dr. Nimer Alselami
Textbook	Principles of Geotechnical Engineering by B. M. DAS & 8th Edition (SI). 2014, Cengage Learning. Principles of Foundation Engineering by BRAJA M. DAS, 7th Edition. 2011. Cengage Learning.
Other supplemental materials	1- Geotechnical Engineering: Principles and Practices by Coduto, 2010. Pearson 2- Lecture notes. 3- Laboratory Manual.
Specific course information	
a. Catalog description	Knowledge and understanding the meaning of shear strength; Understanding the methods of determining the soil shear strength parameters; Evaluation the shear strength of soil under various loading conditions; Introduction to site investigation, methods of soil exploration and boring works, understanding the bearing capacity, and determination the bearing capacity of soil. Understanding the lateral earth pressure; active and passive earth pressures, finally, Stability of finite and infinite slopes.
b. Prerequisite	CE 231-2
c. Required / Elective	Required
Specific goals for the course	
Course Learning Outcomes (CLOs)	By the end of this course, the student will be able to: 1. To discuss the shear strength of soil. 2. To determine the shear strength parameters. 3. To plan the site investigation. 4. To calculate soil and water lateral pressure. 5. To design the retaining wall. 6. To evaluate the stability of finite and infinite slopes. 7. To calculate the bearing capacity of building foundation.
Student outcomes that addressed by the course	The following student outcomes are addressed by the course: SO1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. SO2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. SO3: An ability to communicate effectively with a range of audiences. SO6: An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Topics to be covered	
Topic	**Number of weeks**
1- Introduction to shear strength of soil.	**1/2**
2- Determination of shear strength parameters.	**1 + 1/2**
3- Methods of determining the soil shear strength parameters.	**1**
4- Shear Strength of soil under various loading conditions.	**1**
5- Overall view of effect shear principals	**1**
6- Determination of Mohr circle and Mohr envelop.	**1**
7- Introduction to site investigation.	**1**
8- Soil vertical Stress and Lateral earth pressure.	**2**
9- Retaining Wall Design	**2**
10- Calculation of Stability of slopes and evaluation of both finite and infinite slopes	**2**
11- Calculation of Soil Bearing Capacity	**2**

Schedule of Assessment Tasks for Students During the Semester

Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	**Week due**	**Proportion of Total Assessment**
Homework	Per 2 Weeks	15
Quizzes	Per 2 Weeks	10
Midterm-exam I	8th Weeks	15
Midterm-exam II	12th Weeks	15
Laboratory report	Two Lab. Tests	15
Final Exam	Final Exam Week	30

CLO-SO Map							
	S01	**S02**	**S03**	**S04**	**S05**	**S06**	**S07**
CLO 1	√						
CLO 2	√		√			√	
CLO 3	√						
CLO 4	√						
CLO 5		√					
CLO 6	√	√					
CLO 7	√						