Course Number and Name	CE433-3 Foundation Engineering
Credits hours	3 Credits hours
Contact hours	4 Contact hours; 2 for lecture, 2 for tutorial and 0 for practical
Instructor/s name/s	Dr. Abdullah Zeyad
Textbook	1. Braja M. Das, "Principles of Foundation Engineering", Ninth Edition, (Hardcover, 2018).
Other supplemental materials	1. Code 2. Lecture notes.
Specific course information	
a. Catalog description	This course provides civil engineering students identify the general concept of soil bearing capacity and foundations engineering. As well as to analyze and design shallow foundations and deep foundations (Isolated, Strip, Combined, Strap beam foundations, Raft foundations, Piles, and Piles Caps). Preparation of sufficient drawings and details of these foundations.
b. Prerequisite	CE232-3 Geotechnical Engineering (1) & CE317-3 Reinforced Concrete Design (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. Recognize the key concept of concrete foundation design 2. Determine the bearing capacity of the soil. 3. Prepare sufficient drawings and details of reinforced concrete foundations 4. Design reinforced concrete foundations
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. SO4: An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Topic	Number of weeks
Principal Properties of the foundation	1
Bearing capacity of soil	1
Design of Isolated Footings	2
Design of Strip (Wall or Continuous) Footings	2
Design of Combined Footings	2
Design of Strap Beam Foundations	2
Design of Raft Foundation	2
Design of Pile & Pile Caps	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	The proportion of Total Assessment
Homework	2^{ed} to 14th	5%
Quizzes	3^{ed} & 9th	5%
Midterm-exam I	7th	20%
Midterm-exam II	12th	20%
Term Project	15th	20%
Final Exam	16th	30%

CLO-SO Map							
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO 1	√		√	√			
CLO 2	√		√				
CLO 3		√					
CLO 4				√			
CLO 5		√					
CLO 6							
CLO 7							
CLO 8							
CLO 9							