Course Description Form

1. Course Name:	
Foundation Engineering II	
2. Course Code:	
WCV-42-01	
3. Semester / Year:	
Second Semester / 2024-2025	
4. Description Preparation Date:	
23/9/2024	
5. Available Attendance Forms:	
In-present	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total tuition hours: 60 hrs/semesterTheory: 3 hrs/week Tut. : 1 hr/week Units: 3	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Hadeel Challoob Dekhn Email: hadeel.ch@uowa.edu.iq	
8. Course Objectives	
Course Objectives	• Chapter One:Pile Foundations • Chapter Two:Lateral Earth Pressure • Chapter Three:Retaining Wall • Chapter Four: Sheet Pile
9. Teaching and Learning Strategies	
Strategy	Preparation of practical engineers in the field of deep foundations and other structural members underground surface who are characterized by a high level of knowledge and technological innovation, and work in with internationally approved discreet standards of quality assurance and academic accreditation of corresponding engineering programs with a commitment to ethics of engineering career. Enable students to learn and understand the various applications for deep foundations and other structural members underground surface according to the aims of the course.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	4	Definition, Types of Piles and Their Structural Characteristics	Chapter One: Pile Foundations	Theoretical lectures, discussion and dialogue, brain storming, examples and questions used to achieve the goals	Daily exams, quizzes, documented examinations, quarterly exams, final exams, oral questions and discussions during the lectures, and home works
2	4	Estimating Pile Length, Point Bearing Piles, Friction Piles			
3	4	Methods of installation of piles, load transfer mechanism, point load and friction piles.			
4	4	Pile capacity: in cohesion less soil, in cohesive soil (alpha, beta, and lambda equations)			
5	4	Examples on item of third week, bearing capacity of pile in mixed soil (c-ϕ) Pile			
6	4	Pile capacity from in situ tests (SPT, load test). Negative skin friction			
7	4	Group of piles: capacity (two modes of failure: single and block) and efficiency			
8	4	continuous			
9	4	Settlement of pile group.			
10	4	Introduction to lateral earth pressure theory, active and passive lateral pressure by Rankine theory for horizontal surface.	Chapter Two: Lateral Earth Pressure		
11	4	Active and Passive lateral pressure by Rankine theory for inclined surface.			
12	4	Coulomb theory for active and passive lateral pressures.			
13	4	Definitions and types of retaining walls, geotechnical proportioning against overturning, sliding and base shear failure.	Chapter Three: Retaining Wall		
14	4	Analysis and design of retaining walls.			
15	4	Sheet piles: function and types, installation. Cantilever sheet pile.	Chapter Four: Sheet Pile		

11.Course Evaluation	
Daily exams, quizzes, documented examinations, quarterly exams, final exams, o questions and discussions during the lectures, and home works.	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Braja M. Das and Sivakugan N, (2019) Principles of Foundation Engineering, Ninth edition, SI edition.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	