

## Course Description Form

<b>1. Course Name:</b>	
Foundations Engineering 1 <sup>st</sup>	
<b>2. Course Code:</b>	
<b>3. Semester / Year:</b>	
First Semester 2023–2024	
<b>4. Description Preparation Date:</b>	
24/9/2024	
<b>5. Available Attendance Forms:</b>	
In person	
<b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>	
60 hrs (15 weeks and 4 hrs/week)	
<b>7. Course administrator's name (mention all, if more than one name)</b>	
Name: Dr. Hadeel Challob Dekhn Email: hadeel.ch@uowa.edu.iq	
<b>8. Course Objectives</b>	
<b>Course Objectives</b>	<p>To learn about types and purposes of different foundation system structures.</p> <p>To provide students with exposure to the systematic methods for designing foundations.</p> <p>To discuss and evaluate the feasibility of foundation solutions to different types of soil conditions considering the time on soil behavior.</p> <p>To build the necessary theoretical background for design and construction of foundation systems.</p>
<b>9. Teaching and Learning Strategies</b>	
<b>Strategy</b>	<p>Foundation engineering courses require effective learning and teaching strategies to ensure students develop a strong understanding of complex concepts and their practical applications. The range of strategies that can enhance the learning experience for students in foundation engineering courses. These strategies include lecture-based teaching, practical applications, problem-solving assignments, group work and discussions, technology integration, field trips and site visits, guest speakers, assessments and feedback, continuous learning, and encouraging self-directed learning. By incorporating these strategies, educators can create an engaging and comprehensive learning environment that equips students with the knowledge, skills, and critical thinking abilities necessary for success in the field of foundation engineering.</p>

## 10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	12	<ul style="list-style-type: none"> <li>• Definition and aims</li> <li>• Steps</li> <li>• Number and depth of borings</li> <li>• Sampling</li> <li>• Laboratory tests</li> <li>• Field tests</li> <li>• Report</li> </ul>	Site Investigation	Powerpoint presentations (Hand-out). Video for explanation each lecture. Photos and videos for more explanation	-Daily oral questions and quick written tests. -Discussion and with students. -Small projects -Attendance. -Monthly written tests. -Final exam.
4-9	24	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Terzaghi's bearing capacity equation and BC factors</li> <li>• Meyerhof 's equation and shape factors</li> <li>• SPT used for BC</li> <li>• Eccentricity loading (one axes and bi-axes)</li> <li>• BC of non-homogeneous soil</li> <li>• Uplift Capacity</li> </ul>	Bearing capacity for shallow foundation		
10-15	24	Elastic Theory Immediate settlement Settlement Consideration Consolidation settlement Secondary settlement	Settlement for saturated soil		

## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

15% Monthly Exam 1  
15% Monthly Exam 2  
10% Quizzes and participation  
60% Final Exam

## 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	<ul style="list-style-type: none"> <li>-DAS B. M., “Principles of Foundation Engineering”, Seventh Edition, 2011. 5.</li> <li>-DAS B. M., “Principles of Geotechnical engineering” Seventh Edition, 2010. 6.</li> <li>-Bowles J. E. “Foundation Analysis and Design”, Fifth Edition, 2006.</li> </ul>
Recommended books and references (scientific journals, reports...)	<ul style="list-style-type: none"> <li>Huang A. B. and Yu H. S., “Foundation Engineering Analysis and Design” First Edition, 2018. 2.</li> <li>-Couto D. P., Kitch W. A., Yeung M. R., “Foundation design : principles and practices” Third Edition, 2016.</li> <li>-Briaud J. L., “Geotechnical Engineering: Unsaturated Saturated Soils” First Edition, 2013.</li> </ul>
Electronic References, Websites	<ul style="list-style-type: none"> <li>-Videos by YouTube or any other sources relating to the course.</li> <li>-Websites on the WWW for furnishing more explanation on the themes of this course.</li> </ul>