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| <b>Module Code</b>                                                                                                                                 | CEU44E02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Module Name</b>                                                                                                                                 | 4E2 CIVIL ENGINEERING PROJECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>ECTS Weighting<sup>1</sup></b>                                                                                                                  | 15 ECTS - Derogation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Semester taught</b>                                                                                                                             | Semester 1 & 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Module Coordinator/s</b>                                                                                                                        | Muhammad Ali                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b><a href="#">Module Learning Outcomes</a> with reference to the <a href="#">Graduate Attributes</a> and how they are developed in discipline</b> | <p>On successful completion of this module, students should be able to:</p> <p>LO1. Contribute individually to the development of scientific/technological knowledge in one or more areas of Civil Engineering</p> <p>LO2. Identify, assess and synthesize existing literature and research findings on an unfamiliar problem</p> <p>LO3. Apply a range of standard and specialised research tools and techniques to provide innovative and appropriate solutions to engineering problems of significant complexity</p> <p>LO4. Develop and apply theoretical, scientific and mathematical principles to effectively solve research problems</p> <p>LO5. Design and conduct unsupervised experiments and to analyse and interpret data</p> <p>LO6. Apply and develop software to model engineering systems</p> <p>LO7. Discuss and critically evaluate the research findings and reflect on the strength and limitations of the research</p> <p>LO8. Assess the implications of the project outcomes for engineering practice</p> <p>LO9. Write a research dissertation to professional and academic standards using appropriate graphics and references</p> <p>LO10. Present complex ideas and material to peers and respond effectively to questions and criticism</p> |

**Graduate Attributes: levels of attainment**

To act responsibly - Attained

To think independently - Enhanced

To develop continuously - Enhanced

To communicate effectively - Enhanced

**Module Content**

Projects are allocated in the areas of research expertise and interest of members of the academic staff in the Department of Civil, Structural and Environmental Engineering. Students will be provided with a list of projects and asked to choose a project from this list. The nature and content of the project is then discussed with the supervisor in the following weeks of the first semester.

**Teaching and Learning Methods**

There are no formal timetabled hours associated with the project but students are expected to spend the time it takes to make reasonable progress and to keep in regular contact with their supervisors. It is recommended that students make formal arrangements with their supervisors.

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| <b>Assessment Details<sup>2</sup></b><br><b>Please include the following:</b> <ul style="list-style-type: none"> <li>• <b>Assessment Component</b></li> <li>• <b>Assessment description</b></li> <li>• <b>Learning Outcome(s) addressed</b></li> <li>• <b>% of total</b></li> <li>• <b>Assessment due date</b></li> </ul> | Assessment Component                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Assessment Description                                                            | LO Addressed | % of total | Week due |
|                                                                                                                                                                                                                                                                                                                           | Coursework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Interim project report (5%), oral presentation (5%) and final dissertation (90%). | LO1-10       | 100%       | TBC      |
|                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |              |            |          |
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| <b>Reassessment Requirements</b>                                                                                                                                                                                                                                                                                          | 100% Coursework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |              |            |          |
| <b>Contact Hours and Indicative Student Workload<sup>2</sup></b>                                                                                                                                                                                                                                                          | <b>Contact hours:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                   |              |            |          |
|                                                                                                                                                                                                                                                                                                                           | <b>Independent Study (preparation for course and review of materials):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                   |              |            |          |
|                                                                                                                                                                                                                                                                                                                           | <b>Independent Study (preparation for assessment, incl. completion of assessment):</b><br>The following are the brief guidelines, which will be considered in assessing the final project reports. <ol style="list-style-type: none"> <li>1. <b>Presentation:</b> The project should be well structured, written in clear technical language with diagrams, well referenced and annotated. (25 %)</li> <li>2. <b>Amount of own work done:</b> This includes laboratory testing, literature surveys, computer program, collection of information etc. as well as own work put into the methods of analysis. (25 %)</li> <li>3. <b>Understanding and difficulty:</b> The basic principle behind the subject and behind the conclusions reached must be clearly understood. Consideration will be given to the difficulty of the subject and the amount of study required outside the normal curriculum. (25%)</li> <li>4. <b>Conclusions:</b> Conclusions should be clearly and concisely set out and read directly from the work contained in the project. Overall achievement is also taken into consideration. (25 %)</li> </ol> |                                                                                   |              |            |          |
| <b>Recommended Reading List</b>                                                                                                                                                                                                                                                                                           | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |              |            |          |

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| <b>Module Pre-requisite</b>                                                                                   | None                                                                                                                                                          |
| <b>Module Co-requisite</b>                                                                                    | None                                                                                                                                                          |
| <b>Module Website</b>                                                                                         | <a href="https://www.tcd.ie/Engineering/undergraduate/baiyear4/modules/4E2_A.pdf">https://www.tcd.ie/Engineering/undergraduate/baiyear4/modules/4E2_A.pdf</a> |
| <b>Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.</b> | None                                                                                                                                                          |
| <b>Module Approval Date</b>                                                                                   |                                                                                                                                                               |
| <b>Approved by</b>                                                                                            |                                                                                                                                                               |
| <b>Academic Start Year</b>                                                                                    | September 2024                                                                                                                                                |
| <b>Academic Year of Date</b>                                                                                  | 2024-25                                                                                                                                                       |