Civil Engineering Design (CEGE0003)

Description
Civil Engineering Design introduces students to Civil Engineering Design as practised by professional engineers to enable them to build a solid foundation of knowledge for the future development of their design capabilities.

Students are guided through the design of a series of contextually relevant real or near-real projects from different areas of engineering (e.g. structural, geotechnical, transport) that must consider their place in the world and impacts on society (sustainability, Health and Safety, feasibility). They identify problem types, quantify the problem, and deploy an appropriate strategy to design a solution. Students deal with issues important to engineering designers and which support the development of their own design skills, e.g. decision making, organising a design team, having an idea, testing a concept, balancing priorities, material selection, engineering judgement, etc.

The design process is made explicit, and used as a framework on which students can build their knowledge and create links to learning from elsewhere (personal experience, challenges or scenarios, other taught courses, and professional life).

On completion of Civil Engineering Design 1, students should have knowledge and understanding of:

2. Design as a non-deterministic, iterative, convergent sub-process sitting within a greater project process.
3. Different design strategies and be able to identify their own tendencies or preferences for these strategic approaches.
4. The importance of properly understanding the downstream part of the project process (construction, operation and decommissioning) if they are to be effective designers.
5. The importance of them properly understanding the upstream part of the project process (need, identification

Key information
- Year: 2019/20
- Credit value: 15 (150 study hours)
- Delivery: UG L4, Campus-based
- Reading List: View on UCL website
- Tutor: Mr James Ford
- Term: Terms 1 and 2
- Timetable: View on UCL website

Assessment
- MCQ Exam (departmentally managed): 5%
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- Group coursework: 25%
- Individual project: 30%
- Group project: 35%

Find out more
For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk

Disclaimer: All information correct as of August 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
and brief preparation) if they are to be effective designers.

6. The role of contextual factors in shaping the outcome of a design process.

7. The range of tools (thinking, computation, visualisation, communication, etc.) used by designers, and that developing design mastery requires them to have an understanding of these tools.

8. The role of modelling in the design process.

9. The role of regulations, design codes and best practice guidance in modern engineering design.

10. That design is carried out as part of a team, and the different roles of those involved in different types of design projects.

11. Identifying and quantifying engineering problems, and deploying a strategy to design an appropriate solution.

The module will include lectures, workshops and a field trip to enhance student learning / understanding. There are no prerequisites and the module is compulsory for all Engineering (Civil) undergraduate students.