Advanced Civil Engineering Materials (CEGE0057)

**Description**

**Aims:**
The overall aim of the module is to provide students with detailed knowledge on advanced construction and building materials used in civil infrastructure, such as sustainability of materials, mechanisms of fracture and failure, fibre reinforced composites, advanced concrete, advanced steel, and advanced engineered wood products. The composition, characteristics, properties and performance of these materials will be introduced in detail, and their availability, cost and their use in civil engineering will be discussed as well, based on which the students will develop the ability to make professional decisions about materials selection for civil engineering design within a practical context.

**Learning outcomes:**
By the end of the module students will be able to:

- Describe the chemical composition and structure of different advanced civil engineering materials;
- Discuss their physical and mechanical properties, and durability;
- Explain their performance under different loading and environmental conditions;
- Analyse their availability, cost and embodied energy;
- Identify their manufacture, products and applications in civil infrastructure;
- Explain the materials selection process for civil engineering industry;
- Discuss how to make appropriate decisions about materials selection for civil engineering design.

**Key information**

**Year**
2019/20

**Credit value**
15 (150 study hours)

**Delivery**
PGT L7, Campus-based

**Reading List**
[View on UCL website](ucl.ac.uk)

**Tutor**
Dr Mingzhong Zhang

**Term**
Term 2

**Timetable**
[View on UCL website](ucl.ac.uk)

**Assessment**

- Coursework: 20%
- Written examination (main exam period): 80%

**Find out more**

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