Structural Mechanics (CEGE0101)

Description
This is an introduction to structural engineering. It teaches students to determine the expected behaviour under loading of several simple yet fundamental structural typologies such as statistically determinate frames and pin-jointed trusses. The module gives students an appreciation of how structural fit into the bigger picture of civil engineering design and provides them with fundamental tools and knowledge necessary to analyse and design structures.

Learning Outcomes
- Understand Newton's laws
- Understand principles of equilibrium and draw ‘Free Body Diagrams’
- Differentiate between statically determinate and indeterminate structures
- Understand the notion of linear elastic behaviour
- Understand the behaviour of different structural members and the forces they are subject to
- Analyse statistically determinate pin jointed trusses
- Calculate and draw shear and bending moment diagrams in statically determinate beams
- Calculate stresses in beams due to shear and bending
- Calculate the deflection of statically determinate beams
- Understand the principle of virtual work
- Apply the principle of virtual work to calculate deflection of trusses
- Calculate and draw shear and bending moment diagrams in statically determinate frames
- Apply the principle of virtual work to calculate deflection of statically determinate frames

Key information
- Year: 2020/21
- Credit value: 15 (150 study hours)
- Delivery: UG L4, Campus-based
- Reading List: View on UCL website
- Tutor: Dr Arash Nassirpour Oskouei
- Term: Term 1
- Timetable: View on UCL website

Assessment
- Coursework: 15.0%
- Written examination (departmentally managed): 20.0%
- Written examination (main exam period): 50.0%

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 March 2020. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
Understand the methodology followed in the design of structural members