

Chemical Engineering Design and Professional Skills A

Department of Chemical Engineering, School of Chemical Engineering

College of Engineering and Physical Sciences

Details

Code 17113

Level of study First Year

Credit value 10

Semester 1

Module description

This is the first of a two linked modules introducing students to the design process and the professional skills employed in it. The student will learn the importance of setting clear objectives, based on research into the technical, legislative and socio-economic backgrounds to the problem; of making an initial assessment of the client's problem, and then developing a structured approach to the design process, both individually and within teams, based on realistic assumptions and estimates. Students will also develop their personal skills in teamwork and project management and in oral and written communication with stakeholders in the Design process, particularly the client. Appropriate methods of illustrating design outcomes (manually based and/or computer-based) will be demonstrated and applied.

Teaching and learning methods

The module content is based on the use of lecture and demonstration classes supported by examples, exercises and case studies set up within a chemical engineering discipline base. Topics will include:

- problem definition and specification;
- socio-economic and ethical contexts;
- the design process (e.g. concept, scheme, preliminary, budget);
- team working and time management;
- project planning and organisation;
- methods of design illustration (including sketching, technical drawing and appropriate software-based methods).