Biochemical Engineering

Fluid Flow and Mixing in Bioprocesses (BENG0083)

Description
To provide students with an introduction to the basic transport phenomena required to analyse and design processes handling labile biological materials. Focus is on the development of a physical understanding of the underlying momentum transport phenomena and upon the ability to apply transport analysis to practical bioprocess-oriented problems. The physical interpretation of the problem will be emphasised via the understanding of the problem's mathematical solution.

Intended learning outcomes
Upon completion of the course, a student should be able to:

- Mathematically analyse and interpret given experimental data analysis of a fluid in a viscometer and provide a physical explanation of the results obtained.
- Design a generic pipe network based on specifications and constraints, verify the assumptions made and quantify the pump requirements.
- Analyse and design a complete chromatography system based on fluid flow specifications.
- Calculate the power input required for agitation in a stirred-tank fermenter under a range of operating conditions.
- Define conditions for the successful scale-up or scale-down of a fermentation process for different biological systems.

Key information
- Year: 2018/19
- Credit value: 15 (150 study hours)
- Delivery: UG L4, Campus-based
- Reading List: View on UCL website
- Tutor: Dr Marco Paulo Cardoso Marques
- Term: Term 2
- Timetable: View on UCL website

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

Disclaimer: All information correct as of December 2018. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.