

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.

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	2019/20
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

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

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