Heat and Mass Transfer in Bioprocesses (BENG0015)

Description
The aim of this course is to provide students with an introduction to heat and mass transport phenomena required to design bioprocesses. Focus is on the development of a physical understanding of the underlying 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:

- Understand the key design features that determine the heat transfer capability of a fermenter
- Evaluate the consequences of process changes on the performance of fermenter sterilisation and cooling
- Apply heat transfer principles to design a spray drier for the rapid drying of heat-labile proteins
- Define conditions for successful operation of a freeze drying process
- Understand the principles of dispersion and mass transfer within a packed bed chromatography systems
- Understand the fundamentals of distillation and mass transfer

Key information
Year: 2018/19
Credit value: 15 (150 study hours)
Delivery: UG L5, Campus-based
Reading List: View on UCL website
Tutor: Dr Farlan Veraitch
Term: Term 2
Timetable: View on UCL website

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

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.
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