LONDON'S GLOBAL UNIVERSITY

Biochemical Engineering

Introduction to Biochemical Engineering (BENG0003)

Description

This module will act as an introductory course to Biochemical Engineering, outlining the principles and industrial applications of the discipline. It will support learning in the Faculty's Integrated Engineering ENGS101P and is timetabled to run concurrently. It provides a brief overview of whole bioprocesses including principles of fermentation and downstream processing, using real world scenarios. The relationships between relative timescales of manufacturing, clinical phases, drug discovery, distribution, delivery and marketing for different biopharmaceutical products will be discussed. Issues are demonstrated in biological product engineering and as part of a conceptual design project for a therapeutic product. Global implications of the emergence of new diseases are discussed along with the role of biotechnologists and biochemical engineers in combating them. The responsibility of the WHO, governments and pharmaceutical companies are also discussed including the reality of responsive pharmaceutical manufacturing. Challenges such as cost of research and development, supply of raw materials, plant capacity and adaptability, rapid clinical development, patent restrictions versus shared information, and the impact of global distribution are also studied.

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

- Gain a fundamental understanding of the breath of biochemical engineering.
- Familiarise with principles of bioreactor design with respect to a wide range of pharmaceutical and biotechnology applications.
- Understand the core unit operations that underpin bioreactor technology and operation
- Apply mass balances and growth kinetics within upstream bioprocessing

Key information

Year	2019/20
Credit value	15 (150 study hours)
Delivery	UG L4, Campus-based
Reading List	View on UCL website
Tutor	Dr Qasim Rafiq
Term	Term 1
Timetable	View on UCL website

Assessment

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