The Hong Kong University of Science and Technology

UG Course Syllabus Template

Introduction to Bioengineering

BIEN 1600 (25 weeks)

3 units

No prerequisites

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Course Description

This course aims to first introduce the basic concepts, engineering methodologies and real-life applications in bioengineering. We will cover areas such as biomolecular foundations, imaging and instruments, as well as biomaterials and tissue engineering. Students will become familiar with bioengineering applications in the various concentration areas and see how engineering principles can be applied to biological and medical problems.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Have a broad scope of what bioengineering majors do
2. Learn how to apply engineering methods to biological questions

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

The course is letter-graded. The final grade will be awarded based on performance in the following categories, with weights in parentheses:

- Class participation (10%, in-class Canvas)
- Homework (10%, 4 sets)
- Group Project (Total 20%, 5% report, 5% peer evaluation, 10% poster presentation)
  If your peer evaluation score is less than 30%, you will lose that 5% report
  If you do not show up for the poster presentation, you will lose that 10% poster presentation
- Midterm examination (30%)
- Final examination (30%), **only** covers the second half of the course materials and about 1.5 hours

All homework and reports should be submitted through Canvas*
Graded homework submitted after the deadline will receive no credit. No exceptions.
Class participation will be graded on the basis of Canvas responses.

Course AI Policy

AI can be used except in exams

Communication and Feedback

Assessment marks for PSets will be provided via Canvas within three weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Late Submission Policy

Graded homework submitted after the deadline will receive no credit. No exceptions.

Suggested Texts and Materials

1. "Biomedical Engineering: Bridging Medicine and Technology", W. Mark Saltzman, Cambridge University Press; 2nd edition (2009)

2. "Introduction to Biomedical Engineering", John Enderle, Academic Press; 3rd edition (2011)

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.