

	<p style="text-align: center;">HO CHI MINH UNIVERSITY OF TECHNOLOGY AND EDUCATION</p> <p style="text-align: center;">FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING</p>	<p>Programme: Biomedical Engineering</p> <p>Programme Level: Undergraduate</p>
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Syllabus

1. Course Name: Introduction to Biomedical Engineering

2. Course Code: INBE130165

3. Credits: 3 credits (2:1:4) (4-hour lecture, 1-hour lab session and 4 hours of self-study/week)

4. Course Instructor(s):

- A. Dang-Khoa Tran, MEng
- B. Duc-Dung Vo, MEng
- C. Assoc. Prof. Thanh-Hai Nguyen

5. Registration Requirements

- A. Pre-requisite Course(s): None
- B. Previous Course(s): None

6. Course Descriptions:

This course introduces first-year undergraduates to the field of biomedical engineering. It equips learners with a broad range of technical knowledge in biomedical technology and introduces them to the roles of biomedical engineers, their ethical and professional responsibilities. The course also prepares learners with essential soft skills such as collaboration, communication, and presentation skills. It also equips students with the right tools and study methods to advance their working capabilities and future performance. Furthermore, students will learn and participate in activities to structure and manage a research project. These activities can help them manage their team, their work, and schedule to complete any project efficiently on time. Throughout this course, students will be exposed to various types of problems and scenarios to learn how to put knowledge into practice.

7. Course Learning Outcomes (CLOs)

CLOs	Descriptions <i>After completing this course, learners should be able to:</i>	ELO(s)/PI(s)	Competency
CLO1	Demonstrate understandings about their study program and basic knowledge in biomedical engineering.	ELO1/PI1.2	I
CLO2	Develop professional project plans, project reports, and progress reports throughout a project.	ELO2/PI2.3	R
CLO3	Demonstrate understandings of the professional and ethical responsibilities associated with the biomedical engineering field.	ELO3/PI3.2	R

CLO4	Apply study management, time management, project management skills to develop a sustainable learning strategy for the future.	ELO4/PI4.1	I
	Apply the most advanced tools and effective study methods to support students' study, boosting their productivity and performance.	ELO4/PI4.2	
CLO5	Develop good teamwork, team management, collaboration, and communication skills.	ELO5/PI5.1	R
CLO6	Analyze and improve the design and performance of existing biomedical applications through creative thinking and freedom of innovation.	ELO7/PI7.3	I

Notes: I: Introduction, R: Reinforce, M: Mastery

8. Course Content

- Overview of biomedical engineering; The importance of biomedical engineering; biomedical engineers' work and career opportunities in the field.
- Introduction to the degree program, course program and an overview of HCMUTE University, Faculties, Departments.
- Professional and ethical responsibilities including: ethics of practitioners, engineers, their primary work, and responsibilities of engineers in certain career positions.
- Introduction to biomedical engineering, industrial fields, medical systems and their applications.
- Visit the University's biomedical laboratories, other mechanical and electronic laboratories, companies, and/or factories.
- Skills related to teamworking, project management, time management, literature research, reference citation, oral presentation.

9. Teaching Methods

- Presentation
- Group projects
- Group discussion

10. Student Assessments

- Grading scale: **10**
- Assessment plan:

No.	Content	CLOs	Competency	Assessment Methods	Assessment Tools	Weighting (%)
Formative Assessment						50
1	Curriculum, the basic engineering knowledge	CLO1	I	Short answer questions	Questions	10
2	Project report writing and presentation	CLO2	R	Short answer questions	Grading Rubric	10

3	Professional and ethical responsibilities of an engineer in the biomedical engineering field.	CLO3	R	Short answer questions	Scenarios	10
4	Study management, time management, and project management skills	CLO4	I	Short answer questions	Questions	5
5	Teamwork, team management, collaboration, and communication skills.	CLO5	R	Short answer questions	Questions	5
Summative Assessment						50
6	- Analyze and improve the design and performance of existing biomedical applications - Utilization of effective study tools and methods to boost productivity and performance.	CLO4	I	Essay	Grading Rubric	50

11. Learning Materials

- R. S. Khandpur, Compendium of Biomedical Instrumentation, Volume 1, Wiley, 2020.
- E. Hall and J. Johnson, Integrated Project Management, Prentice Hall, 2002.

12. General Information

Academic Integrity

All students in this class are subject to HCMUTE's Academic Integrity Policy (<http://sao.hcmute.edu.vn/>) and should acquaint themselves with its content and requirements, including a strict prohibition against plagiarism. Any violations will be reported to the Faculty of Electrical and Electronic Engineering Dean's office.

Notice of Change

All information in this syllabus (other than grading and absence policies) may be subject to change with reasonable advanced notice. Students need to regularly update the information of their registered class.

Intellectual Property

All contents of these lectures, including written materials distributed to the class, are under copyright protection from HCMUTE's Intellectual Property Regulations. Notes based on these materials may not be sold or commercialized without the express permission of the instructor.

13. Approval Date:

14. Endorsement:

Dean of Faculty	Head of Department	Course Instructor
Assoc. Prof. Minh-Tam Nguyen	Assoc. Prof. Thanh-Hai Nguyen	

15. Revision History:

<p>1st Revision:</p>	<p><i>Course Instructor</i></p> <p>Assoc. Prof. Thanh-Hai Nguyen <i>Head of Department</i></p>
<p>2nd Revision:</p>	<p><i>Course Instructor</i></p> <p>Assoc. Prof. Thanh-Hai Nguyen <i>Head of Department</i></p>