



Syllabus

- 1. Course name:** Engineering Challenges in Medicine
- 2. Course code:** ECME332665
- 3. Credits:** 3 credits (3:0:6) (3 lecture periods, 0 lab period, 6 self-study periods per week)
- 4. Instructors**
 - Chief lecturer: Dr. Nguyen Hoang Hai
 - Co-lecturers: Assoc. Prof. Dr. Nguyen Thanh Hai

5. Course Requirements

Prerequisite course(s): None

Previous course(s): Human and Animal Physiology and Anatomy

6. Course Description

This course is designed for students to study advanced techniques in biomedical engineering. Lecturers with medical and engineering majors and experiences in multidisciplinary research, will teach the subject. The course includes topics about the central nervous system, muscles and bones, lungs and heart. In the course, important biosignals, measurement methods, necessary equipment along with scientific research topics will be discussed.

7. Learning Outcomes (CLOs)

CLOs	Descriptions	ELO(s) /PI(s)	Compe- tency
	<i>On successful completion of this course students will be able to:</i>		
CLO1	Ability to apply knowledge of high techniques in biomedical engineering field	ELO1/PI1.3	M
CLO2	Ability to solve problems in the design and analysis of biomedical systems.	ELO2/PI2.2,	R
CLO3	Ability to work in groups, read and understand English technical documents in the field of biomedical engineering.	ELO4/PI4.2	R
CLO4	Ability to analyze to calculate and design medical systems	ELO7/PI7.2	R

8. Content outline

- General Physiology.
- Neurology – Physiology of the nose.
- Respiratory System Physiology.
- Cardiovascular Physiology.
- Kidney Physiology.
- Stomach-Intestinal Physiology.
- Physiology of the Endocrine System
- Eye Physiology.
- Dental Physiology

9. Teaching Methods

- *Powerpoint presentation*

- *Teamwork*

10. Assessment(s)

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

No.	Content	CLOs	Competency	Assessment methods	Assessment tools	Weighting %
Formative assessment						50
1	Neurology - Physiology of the nose.	CLO1	M	Multichoice questions	Online/paper sheets	20
2	Physiology of the Respiratory System	CLO2	R	Multichoice questions	Online/paper sheets	15
3	Cardiovascular Physiology	CLO2	R	Multichoice questions	Online/paper sheets	15
Summative assessment						50
4	Endocrine System Physiology.	CLO3	R	Multichoice questions	Online/paper sheets	20
5	Essay by topic	CLO4	R	Multichoice questions	Online/paper sheets	30

11. Learning Materials

- Textbook(s): Lecturer's powerpoint slides
- References: Scientific research topics

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.

Flexibility Notice

Any 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

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13. Approval Date: <dd/mm/yyyy>

14. Endorsement:

Dean	Head of Department	Chief Lecturer
Assoc. Prof. Dr. Nguyen Minh Tam	Assoc. Prof. Dr. Nguyen Thanh Hai	<i><Full Name></i>

15. Revision History:

1st Revision: <dd/mm/yyyy>	Lecturer: Head of Department: Assoc. Prof. Dr. Nguyen Thanh Hai
2nd Revision: <dd/mm/yyyy>	Lecturer: Head of Department: