	HO CHI MINH UNIVERSITY OF TECHNOLOGY AND EDUCATION	**Programme:** Biomedical Engineering
	FACULTY OF ELECTRICAL AND ELECTRONICS ENGINEERING	**Programme Level:** Undergraduate

Syllabus

1. **Course Name:** Healthcare Information System

2. **Course Code:** IMSY332065

3. **Credits:** 4 credits (3:0:6) (3-hour lecture and 6 hours of self-study per week)

4. **Course Instructor(s):**

   A. Chief lecturer: Assoc. Prof. Thanh-Hai Nguyen

   B. Fellow lecturer: Thanh-Tam Nguyen, MEng

   C. Fellow lecturer: Ba-Viet Ngo, MEng

5. **Registration Requirements**

   A. Pre-requisite Course(s): None

   B. Previous Course(s): None

6. **Course Descriptions:**

   Knowledge of healthcare information systems used in healthcare system applications, the development trends of systems serving the development of healthcare, the process of building and operating a medical information system.

7. **Course Learning Outcomes (CLOs)**

CLOs	Descriptions *After completing this module you should be able to:*	ELO(s)/PI(s)	Competency
CLO1	Demonstrate fundamental characteristics of healthcare information systems.	ELO1/PI1.1	R
CLO2	Compute the design parameters of healthcare information systems in preparation for the design and construction of the system.	ELO2/PI2.2	R
CLO3	Explain the importance of health information systems, the present and state-of-the-art HIS models available worldwide.	ELO3/PI3.3	R
CLO4	Collaborate with others in a group discussion to resolve theoretical problems related to health information systems.	ELO5/PI5.3	R

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

8. **Course Content**

   – Overview of a health information system and its applications in both developed and developing countries.

- Designing a health information system.
- Database administration in health information systems.
- Decision support system.
- Data transfer and receive techniques in a health information system and data standards.
- Issues of medical ethics, data safety and security in operating a health information system

9. Teaching Methods
- Presentation
- Group activities
- Problem solving

10. Student Assessments
- Grading scale: **10**
- Assessment plan:

No.	Content	CLOs	Competency	Assessment Methods	Assessment Tools	Weighting (%)
Formative Assessment						**50**
1	Presenting data transmission techniques, data transmission standards in medical information systems.	CLO1	3	MCQs	UTEx	10
2	Presenting the characteristics and working principles of medical information systems, data storage and querying structures on SQL	CLO2	2	Essay	Grading scale	20
3	Designing and simulating a specific application circuit. (The group of students selects a topic and then informs the teacher, the teacher suggests and guides students on how to do it).	CLO4	3	Essay	Grading rubric	20
Summative Assessment						**50**
4	Explanatory questions; calculating, designing a specific health information system	CLO3	3	Essay MCQs	Grading scale	50

11. Learning Materials

A. Main reading:
- Giáo trình chính (Main Syllabus): Merida Johns, Health Information Management Technology, 3rd edtion, Ahima Press, 2010.

B. Extra reading:
- Keonwook Kim, Conceptual Digital Signal Processing with MATLAB, Springer Nature Singapore, Singapore, 2021.
- Samir I. Abood, Digital Signal Processing A Primer With MATLAB, CRC Press, Taylor & Francis Group, 2020.

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:

1st Revision:	
	Course Instructor

	Assoc. Prof. Thanh-Hai Nguyen *Head of Department*
2nd Revision:	*Course Instructor* **Assoc. Prof. Thanh-Hai Nguyen** *Head of Department*