VIETNAM NATIONAL UNIVERSITY – HO CHI MINH CITY
UNIVERSITY OF INFORMATION TECHNOLOGY

INFORMATION SYSTEMS UNDERGRADUATE PROGRAMME

HO CHI MINH CITY – August, 2024

CONTENTS

EDUCATIONAL UNDERGRADUATE PROGRAMME

Programme title:	**Information systems undergraduate programme**
Level of study:	**Undergraduate**
Major:	**Information Systems**
Major code:	**7480104**
Apply for (Issue year):	**Valid for admission year 2024 onwards.**
Final degree:	**Bachelor of Science in Information Systems**

1 GENERAL

1.1 The program educational objectives

Provide the resource of highly-qualified IS engineers. The graduates receive in-depth training in specialized knowledge needed to develop system analysis and design skills, synthesis skills, problem-solving skills, analytical reasoning skills and career skills.

Provide graduates with training in the latest achievements of the Information Systems field, as well as the basic and specialized technical knowledge. The graduates have the capacity to organize and develop IT applications in order to support the operational and managerial activities in variety of social and economic organizations, to enhance the quality of the healthcare system, treatment and care services in hospitals.

The graduates receive basic training in political quality, morality and good health.

1.2 Career opportunities

- ✓ Analysis, design, installation, testing and maintaining IT projects, satisfying different application demands of organizations and business (Healthcare, Administration, bank, telecommunication, aviation, building, etc).
- ✓ IT researchers in the research centers of many ministries, universities and colleges, clinics, hospitals, IT teachers at high schools, colleges and universities.
- ✓ Chief information officers, project managers, database managers.
- ✓ Working as a project designer, IT development policy planner or programmer in the domestic foreign enterprise producing, processing software, and consultancy firms promoting solutions, building and maintaining IT projects.

1.3 Program construction

The program is constructed and carried out to provide manpower resource in Information Systems. Many organizations use information systems for many different purposes. In internal management, information systems will help to gain internal understanding, action unification, maintain the power of the organization, and achieve competitive advantage. For the external, Information Systems help to collect more information about customers, improves the services,

enhance competitive capacity, and creates the conditions for the development. In the situation of the knowledge economy of the present and future time, the construction of robust Information Systems workforce to assist many other organizations is an indispensable requirement. Information Systems affect all employees working in many organizations, especially those working in the field of Information Technology. Applications of Information Technology in economic – social – administrative, financial, and commercial management systems in the real world have promoted the scientific formation of Information Systems engineering. In the context of achieving digital transformation goals across all sectors, especially in healthcare, the development of information systems to support organizations is an inevitable necessity (medical resources, healthcare services, medical history, medications, health insurance,....).

From the practical demands of training engineers who have the ability to analyze, design, construct and manage the activities of Information Systems, the Faculty has designed an undergraduate engineering program, which can educate students into people who have deep knowledge and strong skills in constructing and operating systems of information.

Furthermore, the Information Systems Engineering program of the University of Information Technology contributes to expanding the ability to do research, training and cooperation in the field of Information Systems toward domestic and foreign organizations and researching center.

1.4 Training time

- Mode of attendance: Full time.
- Total credits: minimum of 132 credits (include English modules).
- Training Time: 4 years (8 semesters).

2 ENROLLMENT

Admission condition: According to the annual enrollment scheme of the University of Information Technology - Vietnam National University, Ho Chi Minh City.

3 TRAINING REGULATIONS

The full-time Bachelor of Information Systems training program is implemented in accordance with the current training regulations and regulations of the University of Information Technology.

4 INTENDED LEARNING OUTCOMES

The Intended Learning Outcomes (ILOs) of the training program includes the following general standards of learning outcomes, which are referenced with the outcome standards of ABET 2021-2022 and set of Graduate Competencies issued by Vietnam National University - Ho Chi Minh city under Decision 1658/QD in 2020 (GAC):

- (ILO1) Master the basic knowledge of the natural and social sciences and apply the knowledge in Information Systems (abet 3.1).
- (ILO2) Master the fundamental and advanced knowledge in Information Systems (abet 3.2, gac2.b).

- (ILO3) Conduct research, analyze information and propose innovative solutions for Information Systems problems, Health Information System problems; Recognize the needs and motivation to engage in for life-long learning (abet 3.6, abet 3.7, gac2.a)
- (ILO4) Design, implement and evaluate systems and solutions in Information Systems fields, Health Information System (abet 3.2, abet 3.6, gac2.a)
- (ILO5) Communicate and collaborate effectively with individuals and groups in social and enterprise contexts (abet 3.5, gac2.c)
- (ILO6) Communicate at work, read documents and present IS solutions in a foreign language
- (ILO7) Recognize leadership and management (gac2.d)
- (ILO8) Perceive and respect professional responsibilities, law and ethical values (abet 3.4)

Details of ILOs are listed as follows

LEVEL		**Expected Learning Outcomes (ELOs)**
1st	**2nd**	
ILO1		**Master the basic knowledge of the natural and social sciences and apply of the knowledge in Information Systems**
1	1	Mathematics, Natural Science
1	2	Social Science
ILO2		**Master the fundamental and advanced knowledge in Information Systems**
2	1	Fundamental professional knowledge
2	2	Professional knowledge
ILO3		**Conduct research, analyze information and propose innovative solutions for Information Systems problems; Recognize the needs and motivation to engage in for life-long learning**
3	1	Documentary investigation, theoretical formation and problem identification
3	2	Problem analysis and using models (conceptual model, mathematical model, visualization...)
3	3	Solutions and recommendation
3	4	Updating to the latest information in the IS field
ILO4		**Design, implement and evaluate systems and solutions in Information Systems fields**
4	1	Get customer requirements, conceive, design, implement, and operate IS systems
4	2	Evaluate systems
ILO5		**Communicate and collaborate effectively with individuals and groups in social and enterprise contexts**
5	1	Group formation and assign roles for members
5	2	Communication strategies
5	3	Paper Communication
5	4	Visual Communication
5	5	Presentation
5	6	Making questions, listening and responding

ILO6		**Communicate at work, read documents and present IS solutions in a foreign language**
6	1	Communication in general English
6	2	Communication in professional language and seminar/presenting IS solutions
ILO 7		**Recognize leadership and management**
7	1	Understand leadership and management activities
ILO8		**Perceive and respect professional responsibilities, law and ethical values**
8	1	Critical thinking
8	2	Time and manpower management
8	3	Morality, fidelity and social responsibility
8	4	Professional manners
8	5	Identifying life overview and purposes, contributing to the communities
8	6	understand and respect the nation's legal system

5 BLOOM's TAXONOMY FOR PROGRAMME

Note that: K (Knowledge) stands for Cognitive (knowledge based), S (Skill) means Psychomotor (action based) according to Bloom Taxonomy

Code	Level	Name	Description
Cognitive			
K1	1	Remembering	Is the ability to record and retrieve received knowledge and information; demonstrated by being able to recall that knowledge and information.
K2	2	Understanding	Is the ability to grasp the meaning of spoken, written or visual messages; demonstrated by being able to interpret, give examples, classify, summarize, infer, compare, and explain
K3	3	Applying	The ability to apply learned knowledge to related situations.
K4	4	Analyzing	Is the ability to divide knowledge, information into small parts; then determine the relationship between these small parts to each other and to the whole or the overall goal
K5	5	Evaluating	Is the ability to make judgments based on standards and criteria; demonstrated through testing and commenting.
K6	6	Creating	Is the ability to connect related things together to form a useful product; expressed through planning and creating a product.
Psychomotor			

S1	1	Perception and awareness	The ability to use one's own sensory signals to guide motor activities (actions).
S2	2	Ready for action	The ability to be mentally, physically, and emotionally ready to take action.
S3	3	Guided response	Is the first stage of learning complex skills; demonstrated through the ability to solve simple math problems by imitation, trial and error.
S4	4	Mechanism (basic proficiency)	The act of mastery is an intermediate stage in the process of acquiring complex skills; demonstrated through the actions that have become habits and confident, fluent actions.
S5	5	Complex overt response (expertise)	Is the ability to perform complex operations proficiently and efficiently, demonstrated through coordinated, fast, accurate manipulation with the lowest energy consumption.
S6	6	Adaptation (strong independent skills)	Is the ability to change the mode of operation (method) to meet new requirements.
S7	7	Origination (creativity)	The ability to create new modes of action (new methods) to suit a particular situation or problem.
Affective			
A1	1	Receiving	It is an attitude of focused attention and listening
A2	2	Responding	An attitude of active participation in the collective learning process, expressed through participation and interaction in learning activities.
A3	3	Valuing	The attitude of acknowledging or appreciating an object, phenomenon, or behavior.
A4	4	Organizing	The ability to organize values to form one's own value system.
A5	5	Characterizing	Having a value system that controls one's own behavior, helping individuals to express their individuality and act with their own identity without affecting the collective.

6 PROGRAMME

6.1 Programme structure

<table>
<tr><th colspan="2">IS Knowledge block (Physical training and National defense education are excluded)</th><th>Total credits</th><th>ECTS credit</th></tr>
<tr><td rowspan="4">General education
(45 credits)</td><td>Political and law modules</td><td>13</td><td rowspan="7">Theoretical credit: (104 x 1.5 = 156)

Practical credit: (16 x 2 = 32)</td></tr>
<tr><td>Mathematics - Informatics - Natural Sciences</td><td>18</td></tr>
<tr><td>English modules</td><td>12</td></tr>
<tr><td>Professional Skills</td><td>2</td></tr>
<tr><td rowspan="3">Professional education
(75 credits)</td><td>Core modules</td><td>23</td></tr>
<tr><td>Major modules:
• Management Information system specialization (45 credits)
• Health Information system specialization (45 credits)</td><td>45</td></tr>
<tr><td>Elective modules</td><td>7</td></tr>
<tr><td rowspan="2">Graduation (12 credits)</td><td>Internship</td><td>2</td><td>4</td></tr>
<tr><td>o Thesis (IS401): 10 credicts (20 ECTS)
o Capstone Project (IS407): 06 credits (12 ECTS) + interchangeable modules for every specialization (Management Information system or Health Information system): 04 credits (08 ECTS)
o Industry Capstone Project (IS503): 10 credits (20 ECTS)</td><td>10</td><td>20</td></tr>
<tr><td>Total required credits</td><td></td><td>132</td><td>212</td></tr>
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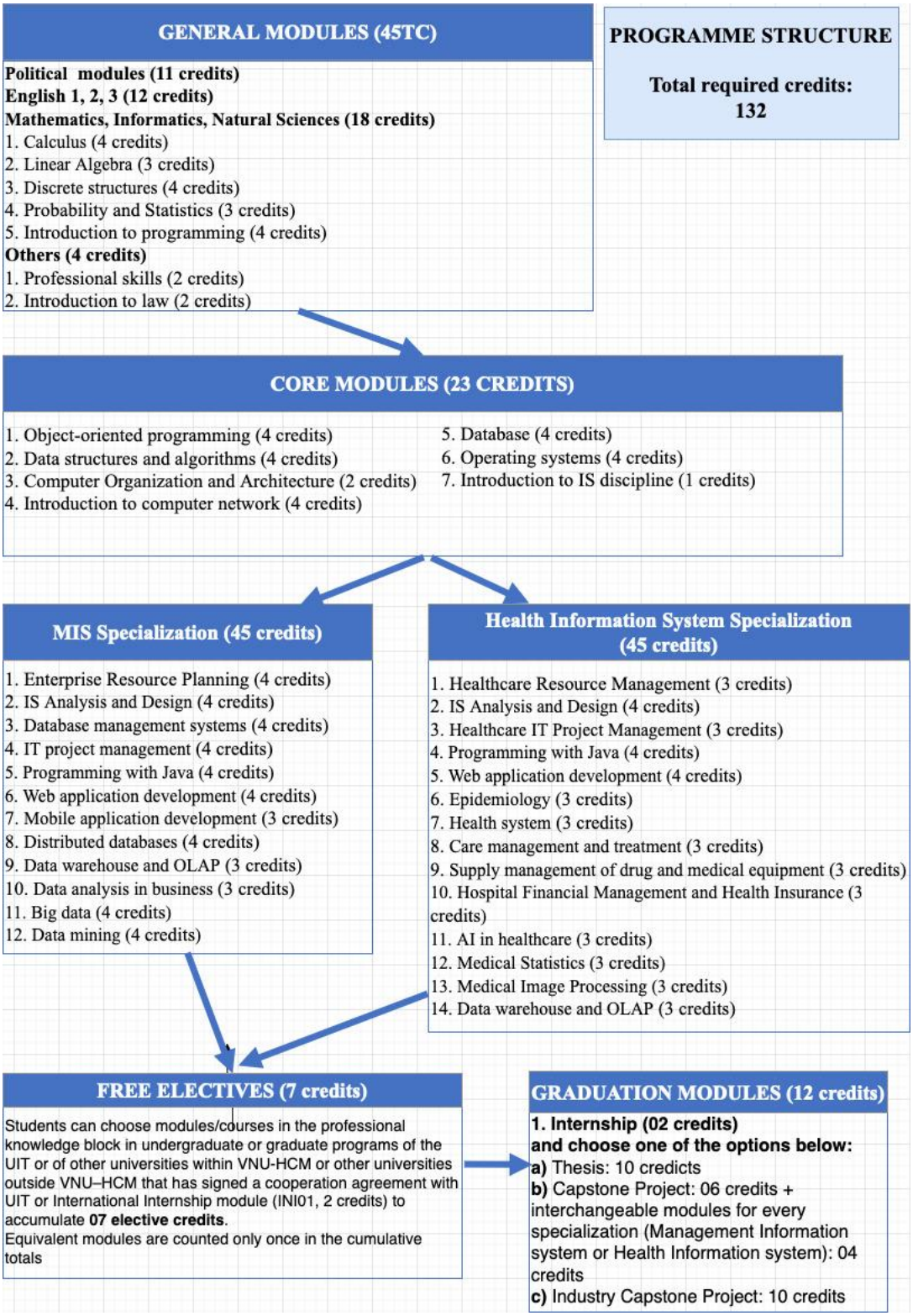
6.2 Blocks of knowledge of the IS programme



6.3 General knowledge block

General knowledge block includes of **45 credits** (Physical training and National defense education are excluded)

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
Political subjects						
1.	SS003	Ho Chi Minh thought	2	2	0	3
2.	SS007	Marxist-Leninist philosophy	3	3	0	4.5
3.	SS008	Marxist Leninist political economy	2	2	0	3
4.	SS009	Scientific socialism	2	2	0	3
5.	SS010	History of the Communist Party of Vietnam	2	2	0	3
Mathematics, Informatics, Natural Sciences						
6.	MA006	Calculus	4	4	0	6
7.	MA003	Linear Algebra	3	3	0	4.5
8.	MA004	Discrete structures	4	4	0	6
9.	MA005	Probability and Statistics	3	3	0	4.5
10.	IT001	Introduction to programming	4	3	1	6.5
English						
11.	ENG01	English 1	4	4	0	6
12.	ENG02	English 2	4	4	0	6
13.	ENG03	English 3	4	4	0	6
Physical training and National defense education						
14.	PE231	Physical education 1	N/A			
15.	PE232	Physical education 2	N/A			
16.	ME001	Military education	N/A			
Others						
17.	SS004	Professional skills	2	2	0	3
18.	SS006	Introduction to law	2	2	0	3

6.4 Professional knowledge block

Professional knowledge block includes of **75 credits**

6.4.1 Core modules/courses

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IT002	Object-oriented programming	4	3	1	6.5

2.	IT003	Data structures and algorithms	4	3	1	6.5
3.	IT004	Databases	4	3	1	6.5
4.	IT005	Introduction to computer networks	4	3	1	6.5
5.	IT010	Computer Organization and Architecture	2	2	0	3
6.	IT007	Operating systems	4	3	1	6.5
7.	IS005	Introduction to Information Systems discipline	1	1	0	1.5

6.4.2 Major modules/courses

a) Management Information System specialization

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IS336	Enterprise Resource Planning	4	3	1	6.5
2.	IS201	Information System Analysis and Design	4	3	1	6.5
3.	IS210	Database management systems	4	3	1	6.5
4.	IS208	Information-technology project management	4	3	1	6.5
5.	IS216	Programming with Java	4	3	1	6.5
6.	IS207	Web application development	4	3	1	6.5
7.	NT118	Mobile application development	3	2	1	5
8.	IS211	Distributed databases	4	3	1	6.5
9.	IS405	Big data	4	3	1	6.5
10.	IS252	Data mining	4	3	1	6.5
11.	IS217	Data warehouse and OLAP	3	3	0	4.5
12.	IS403	Data analysis in business	3	3	0	4.5

b) Health Information System specialization

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IS344	Healthcare Resource Management	3	2	1	5
2.	IS201	Information System Analysis and Design	4	3	1	6.5
3.	IS346	Healthcare Information Technology Project Management	3	2	1	5
4.	IS216	Programming with Java	4	3	1	6.5
5.	IS207	Web application development	4	3	1	6.5

6.	IS348	Epidemiology	3	2	1	5
7.	IS349	Health system	3	3	0	4.5
8.	IS360	Care management and treatment	3	3	0	4.5
9.	IS361	Supply management of drug and medical equipment	3	3	0	4.5
10.	IS362	Hospital Financial Management and Health Insurance	3	3	0	4.5
11.	IS345	AI in healthcare	3	3	0	4.5
12.	IS347	Medical Statistics	3	3	0	4.5
13.	DS312	Medical Image Processing	3	3	0	4.5
14.	IS217	Data warehouse and OLAP	3	3	0	4.5

Students can choose modules/courses in the professional knowledge block in undergraduate or graduate programs of the UIT or of other universities within VNU-HCM or other universities outside VNU–HCM that has signed a cooperation agreement with UIT or International Internship module (INI01, 2 credits) to accumulate 0**7 elective credits**. Equivalent modules are counted only once in the cumulative totals

Recommended Free Electives:

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IS354	Introduction to financial technology	3	3	0	4.5
2.	IS356	Agile IT with DevOps	3	3	0	4.5
3.	IS357	Service Oriented Architecture	3	3	0	4.5
4.	IS232	Accounting information systems	4	4	0	6
5.	IS254	Decision Support System	3	3	0	4.5
6.	IS334	E-Commerce	3	3	0	4.5
7.	IS335	Safety and security in Information Systems	3	3	0	4.5
8.	IS339	Bioinformatics	3	3	0	4.5
9.	IS220	.Net Technology	4	3	1	6.5
10.	NT532	Advanced Internet of Things Technologies	3	2	1	5
11.	EC213	Customer Relationship Management and Supplier Relationship Management	3	2	1	5
12.	EC214	Introduction to Supply Chain Management	3	3	0	4.5
13.	EC331	Electronic Strategic Business Management	3	3	0	4.5
14.	IS363	Law on Health and Medical	2	2	0	3

15.	IS358	Hospital Infection control	3	3	0	4.5
16.	IS364	Medical Coding	3	3	0	4.5

6.5 Graduation knowledge block

Graduation knowledge block includes of **12 credits**.

6.5.1 Internship

- Intership (IS502): 2 credits (4 ECTS).

6.5.2 Thesis or interchangeable modules

- Thesis (IS401): 10 credits (20 ECTS).

Or interchangeable modules (capstone modules) as bellows:

- Capstone Project (IS407): 06 credits (12 ECTS) + interchangeable modules for every specialization (Management Information system or Health Information system): 04 credits (08 ECTS)
- Industry Capstone Project (IS503): 10 credits (20 ECTS)

Interchangeable modules for Management Information System specialization

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IS402	Cloud computing	3	3	0	4.5
2.	IS355	Blockchain Technology	4	3	1	6.5
3.	IS353	Social network	3	3	0	4.5

Interchangeable modules for Health Information System specialization

No.	Code ID	Module name	Credits	Theory	Practice	ECTS
1.	IS406	Cloud Computing and Big data	3	3	0	4.5
2.	IS355	Blockchain Technology	4	3	1	6.5

7 MATRIX OF RELATIONSHIP BETWEEN THE MODULES AND THE INTENDED LEARNING OUTCOMES OF THE TRAINING PROGRAM

GENERAL MODULES									
No	**Module ID**	**Module Name**	**Intended Learning Outcomes (ILOs)**						
			ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO 8
1	SS003	Ho Chi Minh Thought	K2							
2	SS007	Marxist Leninist Philosophy	K2							
3	SS008	Marxist Leninist Political Economy	K2							
4	SS009	Scientific Socialism	K2							
5	SS010	History of Vietnamese Communist Party	K2							
6	SS006	Introduction to Law	K2							A3
7	MA006	Calculus		S3	S3					
8	MA003	Linear Algebra		S3	S3					
9	MA004	Discrete Structures		S3	S3					
10	MA005	Probability and Statistics		S3	S3					
11	ENG01	English 1	K3				S3	S4		A4
12	ENG02	English 2	K3				S3	S4		A4
13	ENG03	English 3	K3				S3	S4		A4
14	PE231	Physical Education 1			S2		S4			
15	PE232	Physical Education 2			S2		S4			
16	ME001	Military Education	K2							A5
17	SS004	Professional Skills	K2				S3		S2	A2
18	IT001	Introduction to Programming		K3	S3	S3				A2

CORE MODULES									
No	**Module ID**	**Module Name**	**Intended Learning Outcomes (ILOs)**						
			ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8
1	IT010	Computer Organization and Architecture		K2				S3		
2	IT007	Operating Systems		K3			S3			
3	IT003	Data structures and Algorithms		K3	S3	S3				A2
4	IT004	Databases		K3	S3					
5	IT002	Object-oriented Programming		K3	S3			S3		

6	IT005	Introduction to Computer networks		K3	S2			S2		
7	IS005	Introduction to Information Systems Discipline		K2			S2			A2
MAJOR MODULES (Management Information System specialization)										
No	**Module ID**	**Module Name**	**Intended Learning Outcomes (ILOs)**							
			ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8
1	IS336	Enterprise Resource Planning		K3	S3				S3	
2	IS201	Information system analysis and design		K4	S4	S3	S3			
3	IS210	Database management systems		K3		S3				
4	IS208	Information technology project management		K3			S3			
5	IS216	Programming with Java		K3			S3			
6	IS207	Web application development		K3		S4	S3			
7	NT118	Mobile application development		K3		S4				
8	IS211	Distributed databases		K3		S3	S3			
9	IS405	Big data		K3	S4		S4			
10	IS252	Data mining		K4	S4			S2		
11	IS217	Data warehouse and OLAP		K3		S4				
12	IS403	Data analysis in business		K3	S4		S3			
MAJOR MODULES (Health Information System specialization)										
13	IS346	Healthcare Information Technology Project Management		NT3			KN3			
14	IS344	Healthcare Resource Management		NT3	KN3				KN 3	
15	IS348	Epidemiology		NT3	KN3					
16	IS349	Health system		NT3	KN3					
17	IS361	Supply management of drug and medical equipment		NT3		KN4				
18	IS360	Care management and treatment		NT3		KN4				
19	IS362	Hospital Financial Management and Health Insurance		NT3		KN3	KN3			
20	IS347	Medical Statistics		NT3	KN4		KN3			
21	IS345	AI in healthcare		NT4	KN4			KN2		
22	DS312	Medical Image Processing		NT3		KN3				

GRADUATION MODULES

No	Module ID	Module Name	Intended Learning Outcomes (ILOs)							
			ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8
1	IS502	Internship				S3	S4			A4
2	IS401	Thesis		K5	S5	S5		S3		
3	IS407	Capstone Project		K4	S4	S4		S2		
4	IS503	Industry Capstone Project		K5	S5	S5		S3		
5	IS402	Cloud Computing		K3	S3			S2		
6	IS353	Social network		K3	S4			S2		
7	IS355	Blockchain Technology		K3	S3			S2		
8	IS406	Cloud Computing and Big data		K3	S3			S2		

RECOMMENDED ELECTIVE MODULES

No	Module ID	Module Name	Intended Learning Outcomes (ILOs)							
			ILO1	ILO2	ILO3	ILO4	ILO5	ILO6	ILO7	ILO8
1	IS354	Introduction to financial technology		K3	S3					
2	IS254	Decision Support System		K3	S4	S4	S4	S3		
3	IS232	Accounting information systems		K3	S3					
4	IS334	E-Commerce		K3	S3		S3			
5	IS335	Information systems security		K3	S3	S3				
6	IS220	.Net Technology		K3		S3				
7	NT532	Advanced Internet of Things Technologies		K4		S4	S3	S3		
8	EC213	Customer Relationship Management and Supplier Relationship Management		K3	S3					
9	EC214	Introduction to Supply Chain Management		K3	S3					
10	EC331	Electronic Strategic Business Management		K3	S3					

8 MODULE SERIES

Series 1 – Modules for ILO3 Skill

ILO	Description	Semester 3	Semester 4	Semester 5	Semester 6	Semester 8
LO3 level	Conduct research, analyze information and propose innovative solutions for Information Systems; Recognize the needs and motivation to engage in for life-long learning	Module: IT004 Database **(Skill - 3)**	Module: IS201 Information system analysis and design **(Skill - 4)**	Module: IS403 Data analysis in business **(Skill - 4)** Medical Statistics **(Skill - 4)**	Module: IS252 Data mining **(Skill - 4)** AI in Healthcare **(Skill - 4)**	Module: IS401 Thesis **(Skill - 5)**

Series 2 – Modules for ILO4 Skill

ILO	Description	Semester 4	Semester 5	Semester 5	Semester 8
LO4 level	Design, implement and evaluate systems and solutions in Information Systems field	Module: IS201 Information system analysis and design **(Skill - 3)**	Module: IS207 Web application development **(Skill - 4)**	Module: IS217 Data warehouse and OLAP **(Skill - 4)**	Module: IS401 Thesis **(Skill - 5)**

Series 3 – Modules for ILO5 Skill

ILO	Description	Semester 1	Semester 4		Semester 6	Semester 8
LO5 level	Conduct research, analyze information and propose innovative solutions for Information Systems; Recognize the needs and motivation to engage in for life-long learning	Module: IS005 Introduction to Information Systems Discipline **(Skill - 3)**	Module: IS216 Programming with Java **(Skill - 3)**	Module: IS208 Information technology project management **(Skill - 3)**	Module: IS211 Distributed databases **(Skill - 3)**	Module: IS502 Internship **(Skill - 4)**

9 STUDY PLAN

a) Stage I (General)

STAGE I: 58 CREDITS					
	Module ID	**Module Name**	Total Credits	Lecture Credits	Lab Credits
Semester 1	IT001	Introduction to Programming	4	3	1
	MA006	Calculus	4	4	0
	MA003	Linear Algebra	3	3	0
	IT010	Computer Organization and Architecture	2	2	0
	IS005	Introduction to Information Systems Discipline	1	1	0
	ENG01	English 1	4	4	0
	ME001	Military Education			
		Total credits of Semester 1	**18**		
Semester 2	IT002	Object-oriented Programming	4	3	1
	IT003	Data structures and Algorithms	4	3	1
	MA004	Discrete Structures	4	4	0
	MA005	Probability and Statistics	3	3	0
	ENG02	English 2	4	4	0
		Total credits of Semester 2	**19**		
Semester 3	IT004	Databases	4	3	1
	IT005	Introduction to Computer networks	4	3	1
	SS007	Marxist-Leninist Philosophy	3	3	0
	SS008	Marxist Leninist Political Economy	2	2	0
	ENG03	English 3	4	4	0
	SS006	Introduction to Law	2	2	0
	SS004	Professional Skills	2	0	2
		Total credits of Semester 3	**21**		

b) Stage II: Management Information System specialization

STAGE II: 74 CREDITS (Management Information System specialization)					
Semester 4	IS201	Information system analysis and design	4	3	1
	IS210	Database management systems	4	3	1
	IS208	Information technology project management	4	3	1
	IS216	Programming with Java	4	3	1
	IT007	Operating Systems	4	3	1
		Total credits of Semester 4	**20**		
Semester 5	PE231	Physical Education 1			
	SS010	History of Vietnamese Communist Party	2	2	0
	IS403	Data analysis in business	3	3	0
	IS217	Data warehouse and OLAP	3	3	0

	IS207	Web Application Development	4	3	1
	IS336	Enterprise Resource Planning	4	3	1
		Total credits of Semester 5	**16**		
Semester 6	PE232	Physical Education 2			
	SS003	Ho Chi Minh Thought	2	2	0
	IS252	Data mining	4	3	1
	IS211	Distributed databases	4	3	1
	IS405	Big data	4	3	1
		Total credits of Semester 6	**14**		
Semester 7	SS009	Scientific Socialism	2	2	0
	IS502	Internship	2		
	NT118	Mobile application development	3	2	1
		Electives (1)	3		
		Elective (2)	4		
		Total credits of Semester 7	**14**		
Semester 8	**Choose one of the options below**				
	IS401	o Thesis 10 credits (20 ECTS) o Capstone Project (IS407): 06 credits (12 ECTS) + interchangeable modules for Management Information system specialization: 04 credits (08 ECTS) o Industry Capstone Project (IS503): 10 credits (20 ECTS)	10		
		Total credits of Semester 8	**10**		

c) Stage II: Health Information System specialization

STAGE II: 74 CREDITS **(Health Information System specialization)**					
Semester 4	IS201	Information system analysis and design	4	3	1
	IS349	Health system	3	3	0
	IS346	Healthcare Information Technology Project Management	3	2	1
	IS216	Programming with Java	4	3	1
	IT007	Operating Systems	4	3	1
		Total credits of Semester 4	**18**		
Semester 5	PE231	Physical Education 1			
	SS010	History of Vietnamese Communist Party	2	2	0
	IS347	Medical Statistics	3	3	0
	IS217	Data warehouse and OLAP	3	3	0
	IS207	Web Application Development	4	3	1
	IS344	Healthcare Resource Management	3	2	1
	IS348	Epidemiology	3	2	1
		Total credits of Semester 5	**18**		

Semester 6	PE232	Physical Education 2			
	SS003	Ho Chi Minh Thought	2	2	0
	IS345	AI in healthcare	3	3	0
	IS360	Care management and treatment	3	3	0
	IS361	Supply management of drug and medical equipment	3	3	0
	IS362	Hospital Financial Management and Health Insurance	3	3	0
		Total credits of Semester 6	**14**		
Semester 7	SS009	Scientific Socialism	2	2	0
	IS502	Internship	2		
	DS312	Medical Image Processing	3	3	0
		Electives (1)	3		
		Elective (2)	4		
		Total credits of Semester 7	**14**		
Semester 8	**Choose one of the options below**				
	IS401	o Thesis 10 credits (20 ECTS) o Capstone Project (IS407): 06 credits (12 ECTS) + interchangeable modules for Health Information system specialization: 04 credits (08 ECTS) o Industry Capstone Project (IS503): 10 credits (20 ECTS)	10		
		Total credits of Semester 8	**10**		

10 GRADUATE CERTIFICATION

- Students who have accumulated **a minimum of 132 credits**, have completed the required courses of the training program corresponding to the major.

- In addition, students must meet other conditions according to the current training regulations of the University of Information Technology at university level

REFERENCES:

1. Decision No. 749/QĐ-TTg dated June 30, 2020 of the Prime Minister on the approval of National Digital Transformation Program by 2025, with a vision towards 2030.

2. Circular No. 08/2021/TT-BGDDT dated March 18, 2021 of the Ministry of Education and Training on promulgating regulations on training at university level.

3. Circular No. 17/2021/TT-BGDĐT dated June 22, 2021 of the Ministry of Education and Training on Regulations on standards of training programs; formulating, appraising and promulgating training programs at university level.

4. Decree No. 99/2019/NĐ-CP dated December 30, 2019 of Prime Minister about detailing and guiding the implementation of a number of articles of the Law amending and supplementing a number of articles of the law on higher education. Decree 99).

5. Decision No. 1982/QĐ-TTg of the Prime Minister dated October 18, 2016 on approving the Vietnam National Qualifications Framework.

6. Decision No. 85/ĐHQG-DH dated January 15, 2020 on reviewing and updating training programs for specialized training majors at university level at VNU-HCM in 2020.

7. Decision No. 1685/QD-ĐHQG dated December 24, 2020 on the pilot approval of the Ministry of Qualities and Competencies of VNU-HCM graduates.

8. Decision No: 790/QĐ-ĐHCNTT dated September 28, 2022, of the University of Information Technology on issuing the regulation on credit-based training for the regular undergraduate program at the University of Information Technology.

9. Decision No: 185/QD-ĐHCNT dated March 30, 2018, of the University of Information Technology on promulgating the process of evaluating and updating the training program at the undergraduate/graduate level.

10. IS Undergraduate Programme – University of Science, Vietnam National University Ho Chi Minh City.

11. IS Undergraduate Programme – Hanoi University of Science and Technology.

12. IS Undergraduate Programme – University of Economics and Law, Vietnam National University Ho Chi Minh City.

13. IS Undergraduate Programme - NUS, Singapore:

https://www.comp.nus.edu.sg/about/depts/is/

(The Department of Information Systems and Analytics)

https://www.comp.nus.edu.sg/programmes/ug/is/curr/

(Bachelor of Computing in Information Systems)

https://www.comp.nus.edu.sg/programmes/ug/ulr/

14. Bachelor of Science in Health Information Management & Technology, University of Wisconsin https://uwex.wisconsin.edu/himt/#curriculum

15. http://HealthIT.Gov

16. https://www.bachelorsdegreecenter.org/best-Health-Information-Management/

17. Book “Hospital Management for Department Heads”, Ho Chi Minh City Department of Health, Medical Publishing House.
18. The Training Program “Hospital Management” of the Center for Training Healthcare Human Resources According to Social Demand, University of Medicine and Pharmacy of Ho Chi Minh City.
19. Undergraduate Programme - Bachelor of Hospital Management, University of Economics Ho Chi Minh City.

20. Undergraduate Programme - Bachelor of Hospital Management, Hung Vương University

21. Undergraduate Programme - Bachelor of Hospital Management – Duy Tan University

22. Undergraduate Programme - Bachelor of Business Administration with specialization in Hospital Management, Phan Chau Trinh University.