MINISTRY OF EDUCATION AND TRAINING
NAM CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

MASTER DEGREE TRAINING PROGRAM
Applying Orientation
Name of major: Information Technology
Code: 8480201

1	**Name of training major**	Information Technology
2	**Code**	8480201
3	**Management unit**	Information Technology Department, Faculty of Information Technology
4	**Learning Incomes**	
4.1	**Relevant majors (*without additional knowledge needs*)**	1. Computer Science (7480101) 2. Network and Data communication (7480102) 3. Software Engineering (7480103) 4. Information System (7480104) 5. Artificial Intelligence (7480107) 6. Data Science (7480109) 7. Information Technology (7480201) 8. Information Security (7480202)
4.2	**Relevant majors (*with additional knowledge needs*)**	1. Computer Technology (7480106) 2. Computer Engineering Technology (7480108) 3. Informatics Teacher Education (7140210) 4. Mathematics - Informatics (7460117) 5. Management Information System (7340405) 6. E-commerce (7340122) 7. Multimedia Communication (7320104) 8. Information Management (7320205)
4.3	**General requirements**	Eligible candidates are citizens of the Socialist Republic of Vietnam who fully satisfy the following conditions: - Graduated from university with relevant majors, or relevant majors (with additional knowledge) comparable with the registered major. - Be healthy enough to study. - Having foreign language ability at Level 3 or higher (B1) according to the 6-level Foreign Language Competency Framework or equivalent; Submit a complete application, on time as prescribed by the training institution.
5	**Training Objectives**	- General objective: The Master's Degree Program in Information Technology (IT) has the goal of training senior human resources who are at the forefront of the team of analysis, consulting, design, development

		and implementation of Information Technology solutions (including infrastructure construction, service provision, and IT application development) and application of information technology to solve production, business and management problems; that meet social needs about high-quality humane resources in the era of industrialization, modernization of the country and international integration. After graduating, students are able to use English fluently, and have the ability to adapt to a diverse and ever-changing market economy. In addition to professional knowledge, students have the ability to demonstrate respect for professional ethical standards, social responsibility, motivation for lifelong learning, passion for creativity, scientific research and entrepreneurship. - Detail goal: a. Master the basic principles and scientific methodology of Marxism - Leninism; improve foreign language knowledge and skills; self-adapt for professional responsibility, professional working style. b. Understand and apply advanced knowledge of algorithmic thinking; computer mathematics; computing power of the computer; storing, processing, searching, security ensuring the information to solve specific problems in IT. c. Analyze, evaluate and propose IT-intensive solutions, focusing on digital transformation, with the full techniques and skills in designing and managing in the information technology projects and business electronic systems. d. Forming thinking, methodology and ability to apply in the real problems relative with IT majors. e. Developing the capacity to approach the modern development trend of the computer field; the capacity to participate in consulting, proposing, presiding over and implementing IT achievements into practice; the ability to apply the achievements of the IT industry to the country's socio-economic development and international integration.
6	**Output Standards**	
6.1	**Knowledge**	a. General knowledge: Applying knowledge of Philosophy and English to work practice. b. Industry knowledge: Synthesizing and appling proficiently advanced knowledge in computer mathematics, analysis and design of algorithms, computer architecture, operating systems, system programming and artificial intelligence. c. Specialized knowledge: Proficiently working in IT-related fields such as storing, processing, searching and ensuring information security. Having ability to analyze, evaluate and propose solutions to specialized issues such as digital transformation, techniques and skills in designing and managing in the information technology projects and e-business systems. d. Scientific research knowledge: Mastering scientific research methodology and application in solving specific problems in IT
6.2	**Skills**	a. Hard skills: Participating in consulting, proposing, leading and implementing IT application projects to serve the socio-economic development of the region, the country and the world.

		b. Soft skills: Having ability to work independently and creatively; and ability to present and work in groups.
6.3	**Attitude/Level of self-control and personal responsibility**	Demonstrate a professional working style, a working with ethics and professional responsibilities, and a lifelong learning habits.
6.4	**Foreign language level before the master's degree defense**	Self-study to achieve a B2 certificate (level 4/6) according to the 6-level Foreign Language Competency Framework for Vietnam or equivalent.
7	**Structure of the training program**	- General knowledge: 03 credits (Philosophy) + Foreign language - Industry knowledge: 14 credits - Specialized knowledge: 28 credits - Scientific research: 15 credits
8	**Additional knowledge modules for the required fields in Section 4.2**	- Number of modules: 03, total credits: 09 credits - Names of modules (name, code, number of credits) 1. Basic Programming, 0118000919, 3 credits 2. Analysis and Design of Algorithms , 0101000976, 3 credits 3. Discrete Math 1, 0101000921, 3 credits
9	**Entrance Exam**	1. Basic Programming 2. Discrete Math 1
10	**Admission conditions**	- Graduated university diplome from a relevant major. - Have a foreign language level 3/6 (B1) according to the 6-level Foreign Language Competency Framework for Vietnam or equivalent.

EDUCATION PROGRAM

Total credits: 60 credits

Training period: 2 years

No	Module Code	Module name	No of Credits	Obligatory	Elective	Theory	Pratice	Prerequisite	Period
General knowledge 3 credits									
1	001395	Philosophy	3	x		45	0		
2		Foreign Language	*Self-study to achieve a B2 certificate (level 4/6) according to the 6-level Foreign Language Competency Framework for Vietnam or equivalent.*						
Total: 3 credits (Obligatory 3 credits; Elective: 0 credits)									
Basic knowledge 14 credits									
3	001924	Mathematical basics for information technology	3	x		30	30		
4	001922	Scientific research method	2	x		30	30		
5	001925	Advanced Artificial Intelligence	3	x		30	30		
6	001926	Advanced analysis and design of algorithms	3		x	30	30		
7	001927	Advanced operating system	3		x	30	30		
8	001928	Advanced computer architecture	3		x	45	0		
9	001929	Free and open source software	3		x	30	30		
10	001937	Information search system	3	x		30	30		
Total: 14 credits (Obligatory 11 credits; Elective: 3 credits)									
Specialized knowledge 28 credits									
11	001930	Information technology project management	3	x		30	30		
12	001932	IoT technology	3	x		30	30		

No	Module Code	Module name	No of Credits	Obligatory	Elective	Theory	Pratice	Prerequisite	Period
13	001934	Advanced Database	3		x	30	30		
14	001935	Advanced machine learning	3		x	30	30		
15	001936	Multimedia data processing	3		x	30	30		
16	001940	Natural language processing	3		x	30	30		
17	001941	Technology and E-business Management	3	x		30	30		
18	001943	Advanced Network Technology	3		x	30	30		
19	001944	Geographic information system	2		x	30	30		
20	001945	Suggestion system	3		x	30	30		
21	001950	Blockchain technology	3	x		30	30		
22	001933	Digital transformation	3	x		30	30		
23	001954	Decision support system	3		x	30	30		
Total: 28 credits (Obligatory: 15 credits; Elective: 13 credits)									
Graduation module									
24		Internship	**6**	x					
25	001951	Graduation project	**9**	x					
Cộng: 15 credits (Obligatory: 15 credits; Elective: 0 credits)									
		Total	**60**	**44**	**16**				

The program is built and is based on the references of many institutions that have specialized in Information Technology such as:

- Can Tho University, Master's Program in Information Technology (https://gs.ctu.edu.vn/kctdt2020/ctdt/8480201.pdf)
- University of Information Technology – Vietnam National University, Ho Chi Minh City, Master's Program in Information Technology

A. MATRIX RELATIONSHIP BETWEEN TRAINING OBJECTIVES AND OUTPUT STANDARDS

Training Objectives	**Output Standards (6)**							
	Knowledge (6.1)				***Skills (6.2)***		***Level of self-control and personal responsibility (6.3)***	***Foreign Language (6.4)***
(5)	**a**	**b**	**c**	**d**	**a**	**b**	**a**	
a	3						3	3
b		3		3			2	
c			3,4, 5		3	3	3	3
d		2	3	3	3	3		
e			4	3	3	3,4,5, 6		3

B. MATRIX RELATIONSHIP BETWEEN TRAINING MODULES AND OUTPUT STANDARDS

Module			**Output Standards (6)**							
			Knowledge (6.1)				***Skills (6.2)***		***Level of self-control and personal responsibility (6.3)***	***Foreign Language (6.4)***
			a	**b**	**c**	**d**	**a**	**b**		
General knowledge										
1	001395	Philosophy	3							
2		Foreign Language								3
Basic knowledge										
3	001924	Mathematical basics for information technology		3						3
4	001925	Advanced Artificial Intelligence		3						3
5	001926	Advanced analysis and design of algorithms		3						3
6	001927	Advanced operating system		3						3
7	001928	Advanced computer architecture		3						3
8	001929	Free and open source software		3						3
9	001937	Information search system		3						3
Specialized knowledge										
10	001930	Information technology project management			3		3	3	3	3
11	001932	IoT technology			3					3
12	001934	Advanced Database			3					3

13	001935	Advanced machine learning			3					3
14	001936	Multimedia data processing			3					3
15	001940	Natural language processing			3					3
16	001941	Technology and E-business Management			3					3
17	001943	Advanced Network Technology			3					3
18	001944	Geographic information system			3					3
19	001945	Suggestion system			3					3
20	001950	Blockchain technology			3					3
21	001933	Digital transformation			3					3
22	001954	Decision support system			3					3
23		Internship			3		3	3	3	3
24	001951	Graduation project			3		3	3	3	3
Scientific research										
25	001922	Scientific research method				3				3

Cantho, Date: ……../2022

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PRESIDENT

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DR. NGUYỄN VĂN QUANG