

PROGRAMME LEARNING OUTCOMES (PLOs)
OF INFORMATION TECHNOLOGY EDUCATION PROGRAMME
*Decision No 415/QĐ-ĐHCNTT&TT dated on June 30th, 2021 by the Rector
of TNU - University of Information and Communication Technology*

Vietnamese name of the programme: *Công nghệ thông tin*

English name of the programme: Information Technology

Academic level:

- Bachelor of Information Technology (4-year training system).
- Information Technology Engineer (5 years training system).

I. TRAINING OBJECTIVES

1.1. General objectives

To train bachelors/engineers in Information Technology (IT) with political qualities, knowledge, basic scientific knowledge and specialized knowledge in IT; Capable of exploiting, researching and developing practical IT applications; Having professional ethics, good health, ability to self-study to improve qualifications to meet the development of the Industry and the requirements of society.

1.2. Specific objectives

By the end of the course, graduates have the knowledge, skills and qualities:

O1. Basic scientific knowledge, foundational and advanced knowledge in the field of information technology.

O2. Skills in operating and exploiting Information Technology application software products; Apply in-depth expertise in information technology project development, implementation and management.

O3. Skills in teamwork, presentation, planning and organization, work implementation; Effective communication skills in a multicultural and multinational environment.

O4. Ability to learn and analyze the context and trends of social change; business and business context to form startup ideas.

O5. Ability to apply legal regulations to solve specialized problems; have research methods and apply modern technology to solve jobs and upgrade IT systems (target for engineers).

II. PROGRAM LEARNING OUTCOMES

PLO		Output standard (PLOs)	Level
1		Knowledge and reasoning	
1.1	L1	<i>Apply general knowledge in social and natural science (such as political theory, mathematics, physics) to solve problems in specialization, career, and daily life.</i>	3
1.1.1		Apply knowledge of Marxism-Leninism, Ho Chi Minh's thought and the Party's viewpoints to perceive scientific, technical and technological issues; build political bravery and develop moral values, responsibility to self, family, social community.	3
1.1.2		Apply basic knowledge of mathematics, physics, and logical thinking as the foundation for studying, researching and solving professional and professional problems.	3
1.1.3		Apply knowledge of national defense and security and physical education to realize responsibility for the cause of national defense and health training to ensure assigned tasks.	3
1.2	L2	<i>Achieve a foreign language proficiency level of 3/6 (B1) with the six-level Foreign Language Proficiency Framework for Vietnam or other equivalent international foreign language certificates.</i>	4
1.2.1		Apply basic knowledge of vocabulary and grammar to meet the acquisition of professional knowledge.	3
1.2.2		Synthesize learned knowledge and language skills to listen, speak, read and write on familiar topics in life and work.	4
1.3	L3	<i>Apply fundamental knowledge in the IT field for implementing practical applications.</i>	3
1.3.1		Apply knowledge of basic programming methods, tools, and source code in the development of software products.	3
1.3.2		Apply knowledge of mathematics to computers to solve problems in system architecture and operation.	3
1.3.3		Apply knowledge of data structures and algorithms to solve problems in the process of designing and building software products.	3
1.3.4		Apply knowledge of computer architectures, operating systems and networks to deploy information technology applications	3
1.3.5		Apply knowledge of computer networks to survey and design infrastructure to ensure the operation of information systems.	3
1.3.6		Apply knowledge and design databases for building and managing data for information systems.	3
1.3.7		Apply knowledge of system analysis and design to build, organize data storage and arrange functions of information technology products in a scientific way.	3
1.4	L4	<i>Apply knowledge of tools and methods in the IT industry and in-</i>	3

PLO		Output standard (PLOs)	Level
		<i>depth knowledge of the IT industry</i>	
1.4.1		Apply the knowledge of object-oriented application development in building Information Technology applications.	3
1.4.2		Understand the principles and methods of IT project management	2
1.4.3		Apply programming languages to build practical applications	3
1.4.4		Efficiently operate information technology infrastructure systems	3
1.4.5		Synthesize modern knowledge and tools in big data analysis for knowledge mining.	4
1.4.6		Analyze the development trend of technology and have the knowledge to start a business in the field of information technology.	4
1.5	L5	<i>Synthesize specialized knowledge, career development and practice of IT (for Engineer degree)</i>	4
1.5.1		Classify research methods in scientific research activities to solve new problems in the IT field.	4
1.5.2		Outline solutions to update and upgrade information technology services to meet the development needs of society.	4
1.5.3		Applying security solutions and information security at work.	3
1.5.4		Apply knowledge of artificial intelligence in solving real-world problems.	3
2		Skills, personal and professional qualities	
2.1	L6	<i>Apply critical thinking and problem-solving skills in building and consulting software application solution</i>	3
2.1.1		Select modeling and problem statement in the field of information technology	3
2.1.2		Solve problems in implementing information technology application projects	3
2.1.3		Develop solutions to implement information technology application projects	3
2.2	L7	<i>Be able to research and explore knowledge</i>	3
2.2.1		Apply knowledge of theoretical foundations and tools to solve information technology application problems	3
2.2.2		Analyze assumptions to explain the points in IT application deployment	4

PLO		Output standard (PLOs)	Level
2.3	<i>L8</i>	<i>Apply systematical thinking</i>	3
2.3.1		Apply specialized knowledge to build the overall system	3
2.3.2		Calculating the priority of work order in problem solving	3
2.3.3		Using different elements in problem solving	3
2.4	<i>L9</i>	<i>Use personal skills and virtues to work independently in in implementing and deploying of IT systems</i>	3
2.4.1		Show honesty in implementation and handling of work	3
2.4.2		Fully implement the provisions of the law of the field of information technology in the implementation and deployment of information technology systems.	3
2.5	<i>L10</i>	<i>Apply IT professional ethics in implementing and deploying of IT systems</i>	3
2.5.1		Apply the ability to think creatively in the implementation and deployment of information technology systems	3
2.5.2		Responsible performance in the assigned work in the implementation of information technology systems	3
2.5.3		Apply knowledge of information security law in the implementation of information technology systems	3
2.5.4		Realize the values in the commitment in the implementation of work	3
3		Communication and teamwork skills	
<i>3.1</i>	<i>L11</i>	Use teamwork skills in group projects	3
3.1.1		Implement the process of forming and working group principles	3
3.1.2		Apply motivation, plan activities, monitor, adjust and evaluate the group's performance.	3
3.1.3		Apply personal and team development skills	4
3.2	<i>L12</i>	<i>Practice communication skills in idea explanation, representation, review, and developing communication relationships in professional life</i>	3
3.2.1		Apply communication skills, from forming coherent and logical ideas to supporting evidence, the ability to present, listen and respect others' opinions.	3
3.2.2		Build relationships with friends, colleagues and social networks	3
4		Ability to conceptualize, design, deploy and operate	

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		application software in business and social contexts	
4.1	L13	<i>Recognize the the enterprise, organization, and societal context</i>	3
4.1.1		Analyze the impact of IT on society and apply state regulations to the field of IT.	4
4.1.2		Identify social, economic and environmental problems in the field of information technology	2
4.1.3		Understand the culture of the organization and the business	2
4.1.4		Analyze goals, strategies, regulations of organizations and enterprises on information technology investment	4
4.1.5		Apply entrepreneurial skills to develop product ideas, services, business plans and form a software-assisted business	3
4.2	L14	<i>Conceive ideas for building a IT system</i>	3
4.2.1		Develop project objectives, collect requirements based on technical methods and tools to collect requirements classification.	3
4.2.2		Proven feasibility and suitability of the project.	3
4.2.3		Select the project's goals and requirements	3
4.3	L15	<i>Design IT systems</i>	3
4.3.1		Apply knowledge and skills in designing information technology solutions	3
4.3.2		Apply processes, methods and tools to develop information technology systems	3
4.3.3		Building an Information Technology system suitable for different purposes.	3
4.3.4		Building architecture and components of information technology systems	3
4.4	L16	<i>Deploy IT projects</i>	3
4.4.1		Apply methods, techniques, tools and environments to develop and deploy applications.	3
4.4.2		Apply knowledge and techniques to realize the design of information technology systems.	3
4.4.3		Apply knowledge to integrate system components and functions during deployment.	3
4.5	L17	<i>Perform the practice on testing, operating, and maintaining software systems</i>	3
4.5.1		Apply processes and methods to verify components or entire systems	3

PLO	Output standard (PLOs)	Level
4.5.2	Apply knowledge and skills to organize and operate systems in operating and maintaining software systems	3

III. WORKING POSITION AFTER GRADUATION

Job positions:

+ Job position of IT bachelor

- Software development specialist.
- Programmer
- Technician in Information Technology.
- Participating in teaching at high schools, information technology training schools, researchers at research institutes.

+ Job position of IT Engineer: In addition to the job positions of IT bachelors, IT engineers can work in the following positions:

- Engineers programming, analyzing and designing systems, building and integrating systems at software companies.
- Consulting engineers to build information systems, manage information systems or administer networks at agencies and enterprises.

These positions are available at companies and businesses in the fields of:

- IT support specialist
- Computer network specialist
- Software/Application developer
- Web developer
- Computer maintenance and repair staff
- Database Administrator
- High schools, colleges, universities, research institutes and vocational training centers.

VICE RECTOR



Ph.D Vu Duc Thai

HEAD OF IT FACULTY



Ph.D Nguyen Hai Minh