THAI NGUYEN UNIVERSITY
UNIVERSITY OF INFORMATION AND COMMUNICATION TECHNOLOGY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

PROGRAM LEARNING OUTCOMES (PLOs)
OF AUTOMATION UNDERGRADUATE PROGRAM

Issued under Decision No. 69/QĐ-ĐHCNTT&TT dated on 10/02/2020 by Rector of The University of Information and Communication Technology

Major: Automation and Control Engineering Technology
Program name: Automation undergraduate program
Level of training: Undergraduate
Training period: 4.5/5 years

I. TRAINING OBJECTIVES

Overall objectives:

Training Automation engineers in Control Engineering Technology and Automation aim to train human resources to meet social needs, have in-depth knowledge of electrical engineering, electronics, metrology, power electronics, electrical machines, PLC control, SCADA and automation of the production process; have professional ethics, health, have the ability to study independently and work in teams, have the ability to communicate and present specialized issues in English.

Specific Objectives:

- Have basic and intensive knowledge of electrical engineering, electronics, metrology, power electronics, generators, PLC control, SCADA and production process automation.
- Being in good health, ensuring the ability to work with high intensity;
- Have sufficient knowledge of politics, security, national defense and law as required by the Ministry of Education and Training;
- Have ability to use foreign languages for work;
- Have the soft skills required for the job.

II. LEARNING OUTCOMES

Notation of PLOs	Content of PLOs
L1	Understand the fundamental knowledge of mathematics and physics to solve theoretical and practical problems related to the industry and major.
L2	Understand the basic of the theory of Marxism-Leninism, Ho Chi Minh's Ideology, the contents of the Revolutionary Way of the Communist Party of Vietnam, the law of the state, security - defense.
L3	Achieve a foreign language level 3/6 (English) foreign language competence framework of Vietnam; skills in using specialized English

L4	Apply fundamental knowledge of electronic and electrical engineering, control theory, electrical machines, ... and the quality criteria of control and automation systems to reason and solve theoretical and practical problems in the automation field.
L5	Apply specialized knowledge to the operation, exploitation and maintaining small and medium-sized industrial control systems, service and public systems, PLC system, microprocessor, mini SCADA, industrial production lines.
L6	Analyze, model design, microcontroller programming, industrial programming for control circuits, machines and production lines: drives of robots, machine tools and CNC, industrial lines.
L7	Repair, operation and inspection of electrical equipment (AC generators, DC generators and transformers), measuring and control equipment in industry and civil engineering;
L8	Formulate ideas, propose solutions for control systems, flexible production modules, process control systems with control, monitoring and data collection functions; propose and implement energy management and power saving solutions.
L9	Have ability to competently use the necessary tools and specialized software to solve problems related to the discipline and specialized training.
L10	Have the skills to work independently and in groups; write reports, give presentations on technical issues.
L11	Have the capacity to lead on the trained professional; proposing initiatives in performing assigned tasks; have the ability to self-study, accumulate knowledge and experience to improve professional qualifications; have the capacity to plan, coordinate and promote collective wisdom; have an understanding of professional responsibility and professional ethics.
L12	Achieve one of the following certificates: IC3, MOS, ICDL, Certificate of Information Technology Application (according to Circular 03/2014/TT-BTTTT of the Ministry of Information and Communications)
L13	Apply intensive knowledge and skills in designing systems to automate the production process in a number of specific fields; building classic/modern control laws; adjusting the control law parameters; evaluating the performance of the system.

III. JOB POSITION AFTER GRADUATION

- Software design engineer: design, programming, testing, operation, inspection and acceptance of the project.
- Research and teaching in research institutes and training institutions related to automation solutions.

- Perform management work in foreign joint ventures, facilities with modern production lines, high level of automation and automatic control systems.
- Specialist of Measurement and Accreditation Department
- Technicians, operators, operators, design engineers....
- Continue to study and research in depth at postgraduate training levels.

VICE RECTOR	FACULTY OF AUTOMATION TECHNOLOGY DEAN
	
Ph.D Vu Duc Thai	**Ph.D Nguyen Duy Minh**