CURRICULUM MAJOR: Electrical and Electronics Engineering Technology (2024)

1. Program Overview

This report outlines the academic framework for the Electrical and Electronics Engineering program at the Ho Chi Minh City University of Industry and Trade (HUIT), as issued under **Decision No. 2551/QĐ-DCT** (dated August 19, 2024).

- **Program Name:** Electrical and Electronics Engineering Technology (Công nghệ kỹ thuật điện, điện tử).
- **Program Code:** 7510301.
- **Field of Study:** Engineering Technology
- **Mode of Study:** Full-time.
- **Training Duration:** 4 years (design time).
- **Degree Awarded:** A two-stage awarding process. Students receive a **Bachelor's Degree** upon completion of Stage 1 and an **Engineer's Degree** upon completion of Stage 2.
- **Managing Department:** Faculty of Electrical and Electronics Technology (Khoa Công nghệ Điện – Điện tử).

2. Program Objectives and Professional Learning Outcomes (PLOs)

Training Objectives The program is designed to produce high-quality human resources with strong ethical foundations and applied thinking. The curriculum balances scientific theory with technical mastery, enabling graduates to analyze, evaluate, and deploy complex electrical and electronic systems. The Engineer level further emphasizes specialized synthesis and management capabilities to meet international integration and national security demands.

Program Learning Outcomes (PLO1 - PLO9) The following outcomes are categorized by proficiency levels: **Cognitive Domain (C)**, **Psychomotor Domain (P)**, **Affective Domain (A)**, and **Proficiency Rating (R)**.

- **PLO1:** Apply basic knowledge of science and society (math, IT, political theory, law). [C3]
- **PLO2:** System Analysis and Evaluation.
    - **Bachelor Level:** Analyze electrical/electronic systems based on core knowledge. [C4]
    - **Engineer Level:** Evaluate electrical/electronic systems based on specialized knowledge. [C5]
- **PLO3:** Operational problem-solving.
    - **Bachelor Level:** Accurately apply operational skills to resolve failures. [P3]
    - **Engineer Level:** Expertly perform complex skills for stable system solutions. [P4]
- **PLO4:** Accurately perform self-study and scientific research. [P3]
- **PLO5:** Adhere to professional ethics and discipline. [A3]
- **PLO6:** Expertly apply cooperation and teamwork skills. [P4]
- **PLO7:** Accurately apply communication and information exchange skills. [P3]
- **PLO8:** Deploy solutions meeting enterprise needs in the field. [R4]
- **PLO9:** Activity Management.

- **Bachelor Level:** Fluently execute planning, coordination, and evaluation of activities. [P3]
- **Engineer Level:** Expertly manage organization, management, and improvement of activities. [P4]

3. Curriculum Structure

The program follows a rigorous credit-based distribution:

Knowledge Block	Total Credits	Percentage (%)
General Education	30	19.87%
Foundation (Core) Knowledge	37	24.50%
Specialized Knowledge (Stage 1)	54	35.76%
Advanced/Specialized Specific (Stage 2)	30	19.87%
Total Accumulated Credits	**151**	**100%**

Note: Graduation at the Bachelor level requires **121 credits** (Stage 1). The Engineer level requires the full **151 credits** (Stage 1 + 2). These totals exclude Physical Education and National Defense-Security.

4. Detailed Course List and 2024 Academic Plan

Legend:

- **T/P:** Credits represented as Total (Theory, Practice).
- **EE:** Electrical Engineering Track.
- **ET:** Electronic Engineering Track.
- **(*) Core:** Required courses that must be completed; includes internships and thesis.

Semester	Course Code	Course Name	Credits (T/P)	Type
1	0101100651	Marxist-Leninist Philosophy	3 (3,0)	Required
1	0101003671	General Law	2 (2,0)	Required
1	0101006144	Advanced Mathematics A1	3 (3,0)	Required
1	0101006150	Advanced Mathematics A2	2 (2,0)	Required
1	0101003731	Scientific Research Methods	2 (2,0)	Required
1	0101001657	National Defense - Security 1-4	8 (7,1)	Non-accum.
2	0101002298	Marxist-Leninist Political Economy	2 (2,0)	Required
2	0101102246	English 1	2 (1,1)	Required
2	0101005019	Basic Electrical Practice	1 (0,1)	Required
2	0101003128	Electric Circuits 1	3 (3,0)	Required
2	0101001260	Basic Electronics	3 (3,0)	Required
2	0101100944	Programming App. in Elec. Engineering	2 (0,2)	Required
2	0101003121	Electromagnetic Field Theory	2 (2,0)	Required
2	*Elective*	*General Elective Pool 1 (Choose 2)*	4 (4,0)	Elective
3	0101000476	Scientific Socialism	2 (2,0)	Required
3	0101102247	English 2	2 (1,1)	Required
3	0101001274	Power Electronics	3 (3,0)	Required
3	0101005024	Basic Electronics Practice	2 (0,2)	Required

3	0101003131	Electric Circuits 2	2 (2,0)	Required
3	0101006562	Linear Integrated Circuits	2 (2,0)	Required
3	0101002530	Measurement Techniques	3 (3,0)	Required
3	*Elective*	*Foundation Elective Pool (Choose 2)*	4 (2,2)	Elective
4	0101006322	Ho Chi Minh Ideology	2 (2,0)	Required
4	0101102248	English 3	2 (1,1)	Required
4	0101000005	Electrical & Electronic Safety	2 (2,0)	Required
4	0101005161	Measurement Techniques Practice	1 (0,1)	Required
4	0101005031	Power Electronics Practice*	1 (0,1)	Required
4	0101002877	Digital - Pulse Techniques	3 (3,0)	Required
4	0101003239	Electrical Machines	3 (3,0)	Required
4	0101100839	Project 1*	1 (0,1)	Required
4	0101003072	Automatic Control Theory	3 (3,0)	Required
4	0101100843	Microcontrollers	3 (1,2)	Required
5	0101001625	Hist. of Vietnamese Communist Party	2 (2,0)	Required
5	0101005271	Digital - Pulse Techniques Practice	2 (0,2)	Required
5	0101007289	Signals and Systems	2 (2,0)	Required
5	0101006231	Electrical Equipment	3 (3,0)	Required
5	0101007966	Electrical Machines Experiment	2 (0,2)	Required
5	0101005040	Automatic Control Practice	2 (0,2)	Required
5	0101100844	Advanced Microcontrollers	2 (0,2)	Required
5 (EE)	0101006899	Power Supply Networks	3 (3,0)	Required
5 (EE)	0101006249	Electric Drives	2 (2,0)	Required
5 (ET)	0101100851	Robot Techniques	3 (3,0)	Required
5 (ET)	0101100852	Advanced Digital Techniques	2 (2,0)	Required
6	0101100842	Programmable Logic Control (PLC)	3 (1,2)	Required
6	0101100841	Electrical Equipment Practice	2 (0,2)	Required
6	0101100838	English for Elec. & Electronic Eng.	2 (2,0)	Required
6	0101100845	Project 2*	1 (0,1)	Required
6 (EE)	0101006787	Computer-Based Network Analysis*	2 (0,2)	Required
6 (EE)	0101100884	Electric Drives Practice	1 (0,1)	Required
6 (EE)	0101001774	Power Systems	3 (3,0)	Required
6 (EE)	0101007967	Power Systems Experiment	1 (0,1)	Required
6 (ET)	0101100854	VLSI Design	2 (2,0)	Required
6 (ET)	0101100855	VLSI Design Practice	2 (0,2)	Required
6 (ET)	0101100856	Embedded Systems Design*	2 (0,2)	Required
6 (ET)	0101100853	Adv. Digital Techniques Practice	1 (0,1)	Required
6 (All)	*Elective*	*Track Elective Pool (Choose 2)*	4 (2,2)	Elective
7	0101102819	Graduation Internship*	4 (0,4)	Required
7	0101102820	Graduation Thesis*	6 (0,6)	Required
7	0101001783	SCADA Systems*	2 (2,0)	Required
7	0101003868	Energy Efficiency and Management*	2 (2,0)	Required
7	0101102818	Machine Learning and Applications	3 (3,0)	Required
7	0101102822	Renewable Energy	3 (3,0)	Required
8	0101100860	Engineering Internship*	8 (0,8)	Required

8	0101102821	Engineering Project*	3 (0,3)	Required
8	0101102823	Power Elec. in Wind/Solar Systems	3 (3,0)	Required
8	*Elective*	*Engineering Elective Pool (Choose 2)*	6 (6,0)	Elective

Elective Pool Highlights:

- **Semester 2:** Practical Vietnamese, General Psychology, Communication Skills
- **Semester 6 (EE):** Advanced PLC 1, Relay Protection, Standardized Electrical Design.
- **Semester 6 (ET):** Biomedical Electronics, Internet of Things (IoT), Computer-based Measurement and Control.
- **Semester 8:** Advanced Electrical Machine Analysis, Smart Grid, TMS320 Microcontroller

5. Career Opportunities and Further Study

Career Positions Graduates are prepared for professional practice in the following roles:

- **Design & Technical Consulting Engineer:** Developing infrastructure and system solutions.
- **Maintenance & Service Specialist:** Ensuring the longevity and safety of industrial systems.
- **Technical Supervisor:** Managing installation and production of electrical/electronic units.
- **Academic Lecturer:** Teaching at vocational schools, colleges, or specialized training centers.

Advancement Opportunities

- **Postgraduate Education:** Direct pathway to Master's and Doctoral programs in Electrical or Electronic Engineering.
- **Extended Degrees:** Eligibility to pursue a second degree in Law, Economics, or related Engineering fields at HUIT.
- **Global Integration:** Access to international exchange programs and study-abroad scholarships with partner universities.

6. Admission Requirements

Admission Code: DCT

Eligibility

- High School graduation or equivalent.
- Standard health requirements for engineering students.

Admission Methods

1. **Method 1:** 2025 High School Graduation Exam results.
2. **Method 2:** High School Academic Records/GPA (Class 10, 11, and 12).
3. **Method 3:** VNU-HCM Competency Assessment Exam (2025).
4. **Method 5:** HCMC University of Education Specialized Competency Assessment.

Quality Thresholds

- **GPA (Method 2/5):** Average of 3 subjects in the combination must reach ≥ **20.0 points**.
- **Competency Assessment (Method 3):** Minimum score of **600 points**.

Contact Information

- **Center:** HUIT Admission & Communication Center.
- **Address:** 140 Le Trong Tan Street, Tay Thanh Ward, Tan Phu District, Ho Chi Minh City.

7. Evaluation and Quality Assurance

Training and assessment strictly adhere to the University's legal framework for credit-based systems:

- **Decision No. 3020/QĐ-DCT:** General Credit-Based Training Regulations.
- **Decision No. 2402/QĐ-DCT:** Testing and Assessment Regulations.
- **Graduation Requirements:** Beyond credit accumulation, students must fulfill Foreign Language Proficiency (**Decision 1281/QĐ-DCT**) and Information Technology standards (**Decision 3297/QĐ-DCT**).