MINISTRY OF EDUCATION AND TRAINING
QUY NHON UNIVERSITY

UNDERGRADUATE PROGRAM

Level of education: **Undergraduate**

Major: **Electronics and Telecommunications Engineering**

Specicality (if any): **1. Electronics and Telecommunications Engineering**

2. Embedded Systems and IoT

3. IC Design

Code: **7520207**

Type of education: **Full-time**

Gia Lai, 2025

MINISTRY OF EDUCATION AND TRAINING
QUY NHON UNIVERSITY

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness

UNDERGRADUATE PROGRAM

(Issued together with Decision No. 2094/QĐ-ĐHQN dated July 22, 2025 of the Rector of Quy Nhon University)

Level of education:	**Undergraduate**
Major:	**Electronics and Telecommunications Engineering**
Specicality (if any):	**1. Electronics and Telecommunications Engineering** **2. Embedded Systems and IoT** **3. IC Design**
Code:	**7520207**
Type of education:	**Full-time**

1. PROGRAM OBJECTIVES (POs)

1.1. General objectives

To train Electronics and Telecommunications engineers who possess fundamental knowledge oriented towards comprehensive development; have solid professional expertise with the capacity for research and self-study; possess the necessary professional practice and social skills to adapt well to the working environment and fulfill various job positions within the scope of the training major; and maintain good political qualities, ethics, and health to meet the requirements of national construction and defense.

1.2. Specific objectives

- Regarding Knowledge:

+ **PO1:** Possess basic knowledge of social sciences, politics, and law.
+ **PO2:** Possess basic knowledge of natural sciences suitable for the training block to acquire and master the body of knowledge and skills of the Electronics and Telecommunications engineering industry.
+ **PO3:** Possess core industry and deep specialized knowledge to adapt well to different job positions in the field of Electronics and Telecommunications engineering and for higher-level studies.
+ **PO4:** Possess knowledge of analyzing, designing, and operating electronic systems,

telecommunications, embedded systems and IoT, and electronic integrated circuit design to meet practical work requirements.

- *Regarding Skills:*

+ **PO5:** Possess communication skills, teamwork skills, and critical thinking to work effectively in multidisciplinary environments.
+ **PO6:** Possess professional skills, foreign language skills, information technology skills, and digital competency in professional activities.
+ **PO7:** Possess skills in conceiving ideas, designing, implementing, and operating electronic systems, telecommunications, embedded systems, and IoT to meet the development needs of society.

- *Regarding Autonomy and Responsibility:*

+ **PO8:** Clearly recognize the awareness of lifelong self-study and research; possess professional ethics and responsibility towards work, the community, and society.

2. EMPLOYMENT OPPORTUNITIES AND FURTHER STUDY PROSPECTS

Graduates from the Electronics and Telecommunications Engineering training program can work in the following agencies, companies, general corporations, or groups:

- State management agencies at all levels regarding post, information and communications, science and technology.
- Groups, companies, and general corporations operating in the telecommunications field: VNPT, Viettel, MobiFone, FPT Telecom, VTC Telecom, Vietnam Airlines, data communication companies, and interprovincial and international telecommunications companies.
- Companies and agencies in the field of information and communications: cable television, and television and radio stations from central to local levels.
- Companies operating in the field of information technology: FPT Software, TMA Solutions, etc.
- Companies operating in the field of hardware design and IC design such as TSMC, Intel, AMD, Qualcomm, Nvidia, Samsung Semiconductor, etc.
- Enterprises operating in the field of manufacturing, trading, and providing electronic equipment, computers, and telecommunications.
- Starting own businesses such as electronics and telecommunications design consultancy companies, or communication network system design and administration consultancy companies, etc.
- Teaching and conducting research at research institutes, universities, colleges, and intermediate schools in the fields of telecommunications engineering, electronics engineering, IC design engineering, and computers.

- Continuing education for higher qualifications according to Master's or Doctoral training programs at prestigious domestic and international training institutions.

3. PROGRAM LEARNING OUTCOMES (PLOS)

PLO1: Possess general knowledge of political theory, natural sciences, and social sciences.	PI 1.1 Understand basic knowledge of social sciences, politics and law, physical education, and national defense - security in professional activities and daily life.
	PI 1.2 Apply communication and teamwork skills to effectively achieve the set goals of multidisciplinary groups.
PLO2. Understand and apply core industry knowledge to calculations and simulations of problems related to Electronics and Telecommunications engineering.	PI 2.1 Apply basic scientific knowledge of mathematics, physics, and informatics to calculate, simulate, and solve problems in the Electronics and Telecommunications industry.
	PI 2.2 Analyze core industry knowledge to reason and solve industry problems in practice.
PLO3: Analyze and apply fundamental and specialized knowledge to explain, calculate, and determine models and operating characteristics of electronic and telecommunication systems.	PI 3.1. Apply core industry knowledge of Electronics and Telecommunications engineering to explain, calculate, and determine models and operating characteristics of electronic and telecommunication systems.
	PI 3.2. Apply specialized knowledge of electronics and telecommunications engineering to analyze, design, and operate applied electronic, information electronic, and telecommunication systems.
	PI 3.3. Apply specialized knowledge of electronics, communications, embedded systems, and IoT in the calculation, design, and operation of applied electronic systems and smart electronic systems based on embedded and IoT platforms.
	PI 3.4. Apply specialized knowledge of hardware design and IC design techniques to calculate and design electronic integrated circuits.
PLO4: Analyze and apply professional knowledge to compare, evaluate, and determine technical solutions in the field of electronics and telecommunications.	PI 4.1. Evaluate technical solutions in the operation, use, and exploitation of applied electronic, information electronic, and telecommunication systems.
	PI 4.2. Determine technical solutions in the operation, use, and exploitation of applied electronic systems and smart electronic systems based on embedded and IoT platforms.
	PI 4.3. Apply professional skills in electronic design and experimentation to evaluate and determine impacting parameters, characteristics, and operating performance of systems in the fields of electronics, telecommunications, and IC design.
PLO5: Propose technical ideas and solutions, while possessing skills in consulting, designing, constructing, and operating electronic-telecommunication systems.	PI 5.1. Analyze problems and form ideas along with technical solutions; participate in project development within Electronics and Telecommunications engineering project.
	PI 5.2. Propose ideas and solutions; implement and operate electronic and telecommunication systems.
PLO6: Apply general skills in foreign languages, informatics, and	PI 6.1 Attain foreign language proficiency equivalent to Level 3/6 of the 6-level Foreign Language Proficiency Framework for Vietnam; effectively apply foreign language skills in

digital skills to solve professional problems.	communication and professional activities.
	PI 6.2 Apply informatics skills combined with modern computer tools and programming languages to effectively solve engineering problems.
	PI 6.3 Possess skills in using artificial intelligence application tools; collect, store, process, and analyze digital data effectively; while ensuring information safety and security in the digital environment.
PLO7: Possess an industrial work style and professional ethics of an engineer; maintain an awareness of self-study and research to improve professional qualifications.	PI 7.1 Maintain a spirit of honesty and responsibility, a sense of discipline, an industrial work style, and the professional ethics of an engineer.
	PI 7.2 Maintain an awareness of proactive learning and self-research to improve professional expertise and the ability to solve urgent social issues.

4. PROGRAM DURATION AND TOTAL CREDITS

4.1. Program Duration: 4.5 years

4.2. Total credits: 150 credits (excluding 3 Physical Education credits and 9 National Defense and Security Education credits).

Program structure	No. Credits
General Knowledge	24
Professional Knowledge	126
- Fundamental knowledge	44
- Specialized knowledge (if any)	47
- Supplementary Knowledge	19
- Internship	8
- Graduation thesis, Alternative courses	8
Total	**150**

5. ADMISSION REQUIREMENTS

In accordance with the current admission regulations of the Ministry of Education and Training and Quy Nhon University.

6. TRAINING METHOD, GRADUATION REQUIREMENTS

6.1. Training Method

Training based on the credit system.

6.2. Graduation Requirements:

- Accumulate a sufficient number of courses and the required volume of the training program.
- Achieve a cumulative grade point average (GPA) for the entire course of 2.00 or higher.

- Complete Physical Education courses and possess a National Defense and Security Education certificate.
- Meet the foreign language and Information Technology (IT) proficiency standards as prescribed by the University.
- Meet the program learning outcomes of the training program.

7. TEACHING METHODS AND LEARNING ASSESSMENT

7.1 Teaching Methods

Depending on the form of teaching, courses will have corresponding teaching methods.

1. *Direct teaching:* Most theoretical courses are taught using methods such as presentation, lecturing, inquiry, suggestive questioning, assigning homework, and checking students' self-study ability through assignments and discussions. Corresponding teaching methods include:

+ Lecturing
+ Suggestive questioning
+ Discussion

2. *Indirect teaching:* Some courses involve indirect teaching without clear intervention from the lecturer, such as course projects and graduation theses. Corresponding teaching methods include:

+ Open-ended questioning
+ Idea generation
+ Case studies
+ Problem-solving

3. Experiential learning: Courses in the training program designed for experiential learning include practical and laboratory courses at the university's practice labs, specialized internships, graduation internships at enterprises, course design projects, and graduation design projects. Corresponding teaching methods include:

+ Modeling
+ Internship and field trips
+ Experimentation
+ Practice
+ Design

4. Interactive teaching: Implemented in several subjects within the training program. Students perform group assignments, group presentations, experiments, group practice, corporate internships, field visits, and graduation projects. Corresponding teaching methods include:

+ Discussion
+ Problem-solving
+ Group learning

+ Interaction and feedback

5. Independent Study: Experimental activities, design in course projects and graduation theses, presentation of course projects and graduation theses, doing homework, writing laboratory reports, presenting experiments, and free study. Corresponding teaching methods include:

+ Individual task assignment
+ Research projects and theses
+ Instruction on computer usage

7.2 Learning Assessment Method

* ***Assessment Grading Scale:*** A 10-point scale is used for all forms of assessment within the course.

* ***Assessment Forms, Criteria, and Weighting:***

a. Theoretical Courses

No.	Form of Assessment	Assessment Criteria	Weight
1	Learning Process	Proactiveness, level of active preparation, and participation in class activities.	40%
		Attendance time for mandatory classes. Depending on the number of absences, the lecturer decides the score based on the absence rate.	
		Students complete 1 individual test: Assessment criteria for the test (specifically stated by the lecturer).	
		Group reports, seminars, or major assignments as regulated by the person in charge of teaching: Assessment criteria for reports, seminars, or major assignments (specifically stated by the lecturer).	
2	Final Exam	- Final examination; Exam form: Written/Oral/...; - Assessment criteria: According to the answer key provided by the examiner.	60%

b. Practical courses

+ Students must attend all laboratory and practical sessions.
+ The arithmetic mean of the practical sessions during the semester, rounded to one decimal place, is the final score for the practical course.

c. Course Project Courses

+ 40% process score; 60% project presentation score.

d. Graduation Thesis/Project Courses

+ Implemented according to the Undergraduate Training Regulations issued with Decision No. 1487/QD-DHQN dated July 1, 2021, by Quy Nhon University.

8. PROGRAM CONTENT

No	Course Code	Course Name	Semester	No. credits	In-Class hours			Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department	Note
					Theory	Practice	Discussion						
I. General Knowledge				**24**									
Compulsory Part													
I.1. Political Science and Law				**13**									
1	1130049	Fundamental of Law	2	2	27		6			57		DPESM	
2	1130299	Philosophy of Marx – Lenin	2	3	40		10			85		DPESM	
3	1130300	Political Economy of Marx – Lenin	3	2	27		6			57	1130299	DPESM	
4	1130301	Scientific Socialism	4	2	27		6			57	1130300	DPESM	
5	1130302	History of the Communist Party of Vietnam	5	2	27		6			57	1130301	DPESM	
6	1130091	Ho Chi Minh Ideology	6	2	27		6			57	1130302	DPESM	
I.2. Physical Education, National Defense and Security Education				Conditional									
7	1120168	National Defense and Security Education 1	4	3	37		8			82		CNDSE	
8	1120169	National Defense and Security Education 2	4	2	22		8			52		CNDSE	
9	1120170	National Defense and Security Education 3	4	2	14			16		44		CNDSE	
10	1120171	National Defense and Security Education 4	4	2	4			56		64		CNDSE	
Physical Education - Elective 1 out of 8 groups													
11	1120172	Physical Education 1 (Football 1)	1	1	4			26		21		DPE	
12	1120173	Physical Education 2 (Football 2)	2	1	4			26		21	1120172	DPE	
13	1120174	Physical Education 3 (Football 3)	3	1	4			26		21	1120173	DPE	
14	1120175	Physical Education 1 (Volleyball 1)	1	1	4			26		21		DPE	
15	1120176	Physical Education 2 (Volleyball 2)	2	1	4			26		21	1120175	DPE	
16	1120177	Physical Education 3 (Volleyball 3)	3	1	4			26		21	1120176	DPE	
17	1120178	Physical Education 1 (Basketball 1)	1	1	4			26		21		DPE	
18	1120179	Physical Education 2 (Basketball 2)	2	1	4			26		21	1120178	DPE	
19	1120180	Physical Education 3 (Basketball 3)	3	1	4			26		21	1120179	DPE	
20	1120181	Physical Education 1 (Badminton 1)	1	1	4			26		21		DPE	
21	1120182	Physical Education 2 (Badminton 2)	2	1	4			26		21	1120181	DPE	
22	1120183	Physical Education 3 (Badminton 3)	3	1	4			26		21	1120182	DPE	

23	1120184	Physical Education 1 (Vietnamese Traditional Martial Arts 1)	1	1	4			26		21		DPE	
24	1120185	Physical Education 2 (Vietnamese Traditional Martial Arts 2)	2	1	4			26		21	1120184	DPE	
25	1120186	Physical Education 3 (Vietnamese Traditional Martial Arts 3)	3	1	4			26		21	1120185	DPE	
26	1120187	Physical Education 1 (Taekwondo 1)	1	1	4			26		21		DPE	
27	1120188	Physical Education 2 (Taekwondo 2)	2	1	4			26		21	1120187	DPE	
28	1120189	Physical Education 3 (Taekwondo 3)	3	1	4			26		21	1120188	DPE	
29	1120190	Physical Education 1 (Karatedo 1)	1	1	4			26		21		DPE	
30	1120191	Physical Education 2 (Karatedo 2)	2	1	4			26		21	1120190	DPE	
31	1120192	Physical Education 3 (Karatedo 3)	3	1	4			26		21	1120191	DPE	
32	1120239	Physical Education 1 (Pickleball 1)	1	1	4			26		21		DPE	
33	1120240	Physical Education 2 (Pickleball 2)	2	1	4			26		21	1120239	DPE	
34	1120241	Physical Education 3 (Pickleball 3)	3	1	4			26		21	1120240	DPE	
I.3. Foreign Language				**7**									
35	1090061	English 1	1	3	30	15				90		DFL	
36	1090166	English 2	2	4	40	20				120	1090061	DFL	
I.4. Social Sciences				**4**									
37	2030003	Communication Skills	1	2	18		4	20		48		DSSH	
38	1150422	Start up	6	2	20	5	10			55		FBA	
II. Professional Education Knowledge				**126**									
***II.1.* Fundamental Knowledge**				**47**									
39	1010354	Linear Algebra	1	3	30	15				105		DMS	
40	1010476	Calculus	1	3	30	15				105		DMS	
41	2020610	General Physics	1	3	39	6				105		DNS	
42	1160491	Autocad and Engineering drawing	3	3	35			20		95		DET	
43	1010129	Probability and statistics	3	2	27	3				70	1010476	DMS	
44	1010098	Numerical Methods	3	2	24	6				70	1010129 1010476	DMS	
45	1160448	Introduction to Electronics and Telecommunications Engineering	1	1	15					35		DET	
46	2020611	Physics Experiment	2	1				30		20	2020610	DNS	
47	1160490	Basis informatics	1	3	30			30		90		DET	
48	1160559	Signals and Systems	3	2	20	9	2			69	1010476	DET	
49	1160560	Electronic Circuit Theory	2	3	30	15				105	2020610	DET	
50	1160825	Electrical - Electronic Circuit Theory Laboratory	3	1				30		20	1160560	DET	
51	1160117	Electrical engineering	2	2	25	5				70	2020610	DET	
52	1160452	Electronic Components	2	2	20	10				70	2020610	DET	
53	1160453	Electronic Circuits - 1	3	2	25	5				70	1160560 1160452	DET	
54	1160450	Programming Engineering	3	2	25	5				70	1160490	DET	

55	1160826	Programming Engineering Laboratory	4	1				30		20	1160450	DET	
56	1160122	Information Theory	4	3	30	15				105	1010129 1160560	DET	
57	1160489	English for Electronic and Telecommunication Engineering	4	2	30					70	1090166	DET	
58	1160685	Automatic Control Theory	5	2	24	4	4		BTL	68	1010476 1160559	DET	
59	1160395	Electromagnetic Field	5	2	22	6	4			68	1010476 2020610	DET	
60	1160639	Computer Architecture	4	2	24	6				70		DET	
II.2. Industry and Specialization Knowledge				**63**									
II.2.1. Industry Knowledge				**42**									
61	1160132	Microprocessor engineering	5	3	36	6	6			102	1160450 1160339	DET	
62	1160456	Electronic circuit 2	4	2	20	8	4			68	1160453	DET	
63	1160339	Pulse and Digital Circuits	4	3	35	10				105	1160560 1160453	DET	
64	1160686	Electronic circuit engineering practice	4	1				30		20	1160453 1160456	DET	
65	1160133	Digital Signal Processing	5	3	35	10				105	1160559 1160122	DET	
66	1160204	Electronic Measurement and Sensors	5	2	24	4	4			68	1160453 1160456	DET	
67	1160687	Practice of designing circuit	5	1				30		20	1160439 1160456	DET	
68	1160827	Information Theory and Digital Signal Processing Laboratory	5	1				30		20	1160133	DET	
69	1160688	Pulse and Digital Circuits Laboratory	5	1				30		20	1160339	DET	
70	1160148	Digital Communication	6	3	25	18	4			103	1160122 1160133	DET	
71	1160283	Antennas and Propagation	6	3	36	6	6			102	1160122 1160395	DET	
72	1160828	Antenna and Electronic Measurement Laboratory	6	1				30		20	1160283	DET	
73	1160569	Microcontroller and Applications	6	2	25	5				70	1160450 1160132	DET	
74	1160323	Design Projects 1	6	1					ĐA	50	1160456	DET	
75	1160834	Machine Learning	6	2	22	8			BTL	70	1160450 1160133	DET	
76	1160809	Application-Electronic Circuit Design Laboratory	6	1				30		20	1160456 1160687	DET	
77	1160201	Wireless Communications	7	2	24	6			BTL (6)	70	1160283 1160148	DET	
78	1160693	Telecommunication Networks	7	2	24	6				70	1160122 1160148	DET	
79	1160457	Computer network Engineering	7	2	25	5				70	1160490	DET	
80	1160572	Integrated Circuit Design	7	2	25	5				70	1160339 1160456	DET	
81	1160324	Design Projects 2	7	1					ĐA	50	1160374 1160569	DET	
82	1160570	Microprocessor&Microcontroller Engineering Laboratory	7	1				30		20	1160569 1160450	DET	
83	1160829	IC Design Laboratory 1	7	1				30		20	1160572	DET	
84	1160830	Telecommunication Laboratory 1	7	1				30		20	1160457	DET	

II.2.2. Electronics and Telecommunications				**21**									
II.2.2a. Compulsory part				**15**									
85	1160308	Information Electronics	7	2	20	8	4			68	1160456 1160148	DET	
86	1160705	Digital television and multimedia	7	2	20	5				70	1160456 1160148	DET	
87	1160156	Optical Fiber Communications	8	3	38	5			BTL (6)	105	1160148	DET	
88	1160700	Mobile Communications	8	3	39	6			BTL	105	1160693	DET	
89	1160697	Telecommunication specialized project	8	1					ĐA	50		DET	
90	1160299	Special Topic In Telecommunication Engineering	8	2	24	6				70		DET	
91	1160831	Telecommunication Laboratory 2	8	1				30		20	1160156	DET	
92	1160833	Specialized Laboratory	8	1				30		20	1160156	DET	
II.2.2b. Elective Courses (6/18 credits)				**6**									
93	1160161	Satellite Communications	8	2	25	5				70	1160201	DET	
94	1160701	Techniques of Positioning and Navigation	8	2	25	3	4			68	1160148 1160201	DET	
95	1160162	Microwave Engineering	8	2	22	8				70	1160283	DET	
96	1160160	Telecommunications Network Organization and Management	8	2	30					70	1160210	DET	
97	1160579	Wireless Sensor Network and IoT	8	2	30					70	1160457	DET	
98	1160164	Industrial Electronics	8	2	20	10				70	1160456 1160569	DET	
99	1160400	Speech and image processing	8	2	22	8				70	1160133	DET	
100	1160357	Applied Optoelectronics	8	2	24	6				70	1160156	DET	
101	1160462	Special Topics in Electronics and Computing	8	2	24	6				70	1160132	DET	
II.2.3. Embedded system và IoT				**21**									
II.2.3a. Compulsory part				**15**									
102	1160579	Wireless Sensor Network and IoT	7	2	30					70	1160457	DET	
103	1160568	Embedded Systems	7	2	30					70	1160132	DET	
104	1160582	Embedded Operating Systems	8	2	24	6				70	1160132	DET	
105	1160583	Embedded Systems Design	8	2	27		6			67	1160568 1160132	DET	
106	1160303	Application Database	8	2	23	7				70	1160450	DET	
107	1160585	Special Topics in Internet of Things	8	2	28	4				68	1160132 1160569	DET	
108	1160702	Specialized Project in Embedded Systems and IoT	8	1					ĐA	50	1160217	DET	
109	1160584	Embedded Systems Laboratory	8	1				30		20	1160583 1160575	DET	
110	1160833	Specialized Laboratory	8	1				30		20	1160156	DET	
III.2.3b. Elective Courses (6/22 credits)				**6**									
111	1160461	Artificial intelligence	8	2	22	8				70	1160565	DET	
112	1160327	Cloud Computing System	8	2	26	2	4			68	1160457	DET	
113	1160565	Data structures and Algorithms	8	2	25	5				70	1160450	DET	
114	1160163	Object-Oriented Analysis and Design	8	2	24	6				70	1160450	DET	
115	1160335	Advanced Programming Techniques	8	2	25	5				70	1160450 1160565	DET	
116	1160625	Parallel Computing Programming	8	2	30					70	1160450	DET	
117	1160308	Information Electronics	8	2	20	8	4			68	1160456 1160148	DET	

118	1160400	Speech and image processing	8	2	22	8				70	1160133	DET	
119	1160357	Applied Optoelectronics	8	2	24	6				70	1160156	DET	
120	1160462	Special Topics in Electronics and Computing	8	2	24	6				70	1160132	DET	
121	1160703	Java Programming	8	2	20	10				70	1160450	DET	
II.2.4. IC Design				**21**									
II.2.4a. Compulsory part				**15**									
122	1160640	Digital System Design using HDL	7	3	42	3				105	1160339 1160450	DET	
123	1160707	Digital Integrated Circuit Design	8	2	25	5				70	1160572 1160640	DET	
124	1160641	Digital System Design using HDL Laboratory	8	1				30		20	1160640	DET	
125	1160642	SoC Design	8	3	39	6				105	1160572 1160640	DET	
126	1160643	Analog and Mixed-Signal Integrated Circuit Design	8	3	40	5				105	1160572	DET	
127	1160708	Project in IC Design	8	1					ĐA	50	1160572 1160642	DET	
128	1160833	Specialized Laboratory	8	1				30		20	1160156	DET	
129	1160709	IC Design Laboratory 2	8	1				30		20	1160707	DET	
III.2.4b. Elective Courses (6/12 credits)				**6**								DET	
130	1160625	Parallel Computing Programming	8	2	30					70	1160450	DET	
131	1160644	Embedded Systems on SoC	8	2	25	5				70	1160132 1160583	DET	
132	1160638	Image Processing on FPGA	8	2	24	6				70	1160400	DET	
133	1160645	Specialized in IC Design (ASIC)	8	2	25	5				70	1160640 1160572	DET	
134	1160583	Embedded Systems Design	8	2	27		6			67	1160568 1160132	DET	
135	2020608	Nano Materials and Devices	8	2	26		8			66		DET	
II.3. Supplementary Knowledge ***Internship***				**8**									
136	1160711	Cognitive internship	3	2					TT	100		DET	
137	1160712	Specialized internship	7	2					TT	100	1160711	DET	
138	1160713	Graduation internship	9	4					TT	200		DET	
II.4. Graduation thesis				**8**									
139	1160588	Graduation Project	9	8					ĐA	400		DET	
Total				**150**									

9. TENTATIVE TEACHING PLAN

Semester 1:

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1090061	English 1	3	30	15				105		DFL	
2	1010354	Linear Algebra	3	30	15				105		DMS	
3	1010476	Calculus	3	30	15				105		DMS	
4	2020610	General Physics	3	39	6				105		DNS	
5	1160490	Basis informatics	3	30			30		90		DET	
6	2030003	Communication Skills	2	18		4	20		58		DSSH	
7	1160448	Introduction to Electronics and Telecommunications Engineering	1	15					35		DET	

Select 1 out of the following 8 courses: (1/8 credit)												
8	1120172	Physical Education 1 (Football 1)	1	4			26		21		DPE	
9	1120175	Physical Education 1 (Volleyball 1)	1	4			26		21		DPE	
10	1120178	Physical Education 1 (Basketball 1)	1	4			26		21		DPE	
11	1120181	Physical Education 1 (Badminton 1)	1	4			26		21		DPE	
12	1120184	Physical Education 1 (Vietnamese Traditional Martial Arts 1)	1	4			26		21		DPE	
13	1120187	Physical Education 1 (Taekwondo 1)	1	4			26		21		DPE	
14	1120190	Physical Education 1 (Karatedo 1)	1	4			26		21		DPE	
15	1120239	Physical Education 1 (Pickleball 1)	1	4			26		21		DPE	
Total:			**18**									

Semester 2

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1130049	Fundamental of Law	2	27		6			67		DPESM	
2	1130299	Philosophy of Marx – Lenin	3	40		10			100		DPESM	
3	1090166	English 2	4	40	20				140	1090061	DFL	
4	1160117	Electrical engineering	2	25	5				70	2020610	DET	
5	1160452	Electronic Components	2	20	10				70	2020610	DET	
6	2020611	Physics Experiment	1				30		20	2020610	DNS	
7	1160560	Electronic Circuit Theory	3	30	15				105	2020610	DET	
Select 1 out of the following 8 courses: (1/8 credits)												
8	1120173	Physical Education 2 (Football 2)	1	4			26		21	1120172	DPE	
9	1120176	Physical Education 2 (Volleyball 2)	1	4			26		21	1120175	DPE	
10	1120179	Physical Education 2 (Basketball 2)	1	4			26		21	1120178	DPE	
11	1120182	Physical Education 2 (Badminton 2)	1	4			26		21	1120181	DPE	
12	1120185	Physical Education 2 (Vietnamese Traditional Martial Arts 2)	1	4			26		21	1120184	DPE	
13	1120188	Physical Education 2 (Taekwondo 2)	1	4			26		21	1120187	DPE	
14	1120191	Physical Education 2 (Karatedo 2)	1	4			26		21	1120190	DPE	
15	1120240	Physical Education 2 (Pickleball 2)	1	4			26		21	1120239	DPE	
Total:			**17**									

Semester 3

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1130300	Political Economy of Marx – Lenin	2	27		6			67	1130299	DPESM	
2	1010129	Probability and statistics	2	27	3				70	1010476	DMS	
3	1010098	Numerical Methods	2	24	6				70	1010129 1010476	DMS	
4	1160491	Autocad and Engineering drawing	3	35			20		95		DET	
5	1160453	Electronic Circuits - 1	2	25	5				70	1160560 1160452	DET	

6	1160825	Electrical - Electronic Circuit Theory Laboratory	1				30		20		DET	
7	1160559	Signals and Systems	2	20	9	2			69	1010476	DET	
8	1160450	Programming Engineering	2	25	5				70	1160490	DET	
9	1160711	Cognitive internship	2					TT	100		DET	
Select 1 out of the following 8 courses: (1/8 credits)												
9	1120174	Physical Education 3 (Football 3)	1	4			26		21	1120173	DPE	
10	1120177	Physical Education 3 (Volleyball 3)	1	4			26		21	1120176	DPE	
11	1120180	Physical Education 3 (Basketball 3)	1	4			26		21	1120179	DPE	
12	1120183	Physical Education 3 (Badminton 3)	1	4			26		21	1120182	DPE	
13	1120186	Physical Education 3 (Vietnamese Traditional Martial Arts 3)	1	4			26		21	1120185	DPE	
14	1120189	Physical Education 3 (Taekwondo 3)	1	4			26		21	1120188	DPE	
15	1120192	Physical Education 3 (Karatedo 3)	1	4			26		21	1120191	DPE	
16	1120241	Physical Education 3 (Pickleball 3)	1	4			26		21	1120240	DPE	
Total:			**18**									

Semester 4

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1130301	Scientific Socialism	2	27		6			67	1130300	DPESM	
2	1160489	English for Electronic and Telecommunication Engineering	2	30					70	1090166	DET	
3	1160639	Computer Architecture	2	24	6				70		DET	
4	1160339	Pulse and Digital Circuits	3	35	10				105	1160560 1160453	DET	
5	1160122	Information Theory	3	30	15				105	1010129 1160560	DET	
6	1160686	Electronic circuit engineering practice	1				30		20	1160453 1160456	DET	
7	1160456	Electronics circuit 2	2	20	8	4			68	1160453	DET	
8	1160826	Programming Engineering Laboratory	1				30		20	1160450	DET	
9	1120168	National Defense and Security Education 1	3	37		8			105		CNDSE	
10	1120169	National Defense and Security Education 2	2	22		8			70		CNDSE	
11	1120170	National Defense and Security Education 3	2	14			16		70		CNDSE	
12	1120171	National Defense and Security Education 4	2	4			56		40		CNDSE	
Total:			**16**									

Semester 5

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1130302	History of the Communist Party of Vietnam	2	27		6			67	1130301	DPESM	

2	1160685	Automatic Control Theory	2	24	4	4		BTL	68	1010476 1160559	DET	
3	1160132	Microprocessor engineering	3	36	6	6			102	1160450 1160339	DET	
4	1160133	Digital Signal Processing	3	35	10				105	1160559 1160122	DET	
5	1160395	Electromagnetic Field	2	22	6	4			68	1010476 2020610	DET	
6	1160204	Electronic Measurement and Sensors	2	24	4	4			68	1160453 1160456	DET	
7	1160687	Practice of designing circuit	1				30		20	1160439 1160456	DET	
8	1160827	Information Theory and Digital Signal Processing Laboratory	1				30		20	1160133	DET	
9	1160688	Pulse and Digital Circuits Laboratory	1				30		20	1160339	DET	
Total:			**17**									

Semester 6

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1130091	Ho Chi Minh Ideology	2	27		6			67	1130302	DPESM	
2	1150422	Start up	2	20	5	10			65		FBA	
3	1160148	Digital Communication	3	25	18	4			103	1160122 1160133	DET	
4	1160283	Antennas and Propagation	3	36	6	6			102	1160122 1160395	DET	
5	1160828	Antenna and Electronic Measurement Laboratory	1				30		20	1160283	DET	
6	1160569	Microcontroller and Applications	2	25	5				70	1160450 1160132	DET	
7	1160323	Design Projects 1	1					ĐA	50	1160456	DET	
8	1160834	Machine Learning	2	22	8			BTL	70	1160450 1160133	DET	
9	1160809	Application-Electronic Circuit Design Laboratory	1				30		20	1160456 1160687	DET	
Total:			**17**									

Semester 7

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1160201	Wireless Communications	2	24	6			BTL (6)	70	1160283 1160148	DET	
2	1160693	Telecommunication Networks	2	24	6				70	1160122 1160148	DET	
3	1160457	Computer network Engineering	2	25	5				70	1160490	DET	
4	1160572	Integrated Circuit Design	2	25	5				70	1160339 1160456	DET	
5	1160324	Design Projects 2	1					ĐA	50	1160374 1160569	DET	
6	1160570	Microprocessor & Microcontroller Engineering Laboratory	1				30		20	1160569 1160450	DET	
7	1160829	IC Design Laboratory 1	1				30		20	1160572	DET	

8	1160830	Telecommunication Laboratory 1	1				30		20	1160457 1160148	DET	
9	1160712	Specialized Internship	2					TT	100	1160711	DET	
Electronics and Telecommunications Engineering												
10	1160308	Information Electronics	2	20	8	4			68	1160456 1160148	DET	
11	1160705	Digital television and multimedia	2	20	5				70	1160456 1160148	DET	
Total:			**18**									
Embedded Systems and IoT												
12	1160579	Wireless Sensor Network and IoT	2	30					70	1160457	DET	
13	1160568	Embedded Systems	2	30					70	1160132	DET	
Total:			**18**									
IC Design												
14	1160640	Digital System Design using HDL	3	42	3				105	1160339 1160450	KT&CN	
Total:			**17**									

Semester 8

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
Electronics and Telecommunications Engineering												
1	1160156	Optical Fiber Communications	3	39	5			BTL (6)	105	1160148	DET	
2	1160700	Mobile Communications	3	39	6			BTL	105	1160693	DET	
3	1160299	Special Topic In Telecommunication Engineering	2	24	6				70		DET	
4	1160697	Telecommunication specialized project	1					ĐA	50		DET	
5	1160831	Telecommunication Laboratory 2	1				30		20	1160705 1160156	DET	
6	1160833	Specialized Laboratory	1				30		20	1160156	DET	
Select 3 out of the following 9 courses: (6/18 credits)												
7	1160161	Satellite Communications	2	25	5				70	1160201	DET	
8	1160701	Techniques of Positioning and Navigation	2	25	3	4			68	1160148 1160201	DET	
9	1160162	Microwave Engineering	2	22	8				70	1160283	DET	
10	1160160	Telecommunications Network Organization and Management	2	30					70	1160210	DET	
11	1160579	Wireless Sensor Network and IoT	2	30					70	1160457	DET	
12	1160164	Industrial Electronics	2	20	10				70	1160456 1160569	DET	
13	1160400	Speech and image processing	2	22	8				70	1160133	DET	
14	1160357	Applied Optoelectronics	2	24	6				70	1160156	DET	
15	1160462	Special Topics in Electronics and Computing	2	24	6				70	1160132	DET	
Total:			**17**									
Embedded and IoT												
1	1160582	Embedded Operating Systems	2	24	6				70	1160132	DET	

2	1160583	Embedded Systems Design	2	27		6			67	1160568 1160132	DET	
3	1160303	Application Database	2	23	7				70	1160450	DET	
4	1160585	Special Topics in Internet of Things	2	28	4				68	1160132 1160569	DET	
5	1160702	Specialized Project in Embedded Systems and IoT	1					ĐA	50	1160217	DET	
6	1160584	Embedded Systems Laboratory	1				30		20	1160583 1160575	DET	
7	1160833	Specialized Laboratory	1				30		20	1160156	DET	
Select 3 out of the following 1 courses: (6/22 credits)												
9	1160461	Artificial intelligence	2	22	8				70	1160565	DET	
10	1160327	Cloud Computing System	2	26	2	4			68	1160457	DET	
11	1160565	Data structures and Algorithms	2	25	5				70	1160450	DET	
12	1160163	Object-Oriented Analysis and Design	2	24	6				70	1160450	DET	
13	1160335	Advanced Programming Techniques	2	25	5				70	1160450 1160565	DET	
14	1160625	Parallel Computing Programming	2	30					70	1160450	DET	
15	1160308	Information Electronics	2	20	8	4			68	1160456 1160148	DET	
16	1160400	Speech and image processing	2	22	8				70	1160133	DET	
17	1160357	Applied Optoelectronics	2	24	6				70	1160156	DET	
18	1160462	Special Topics in Electronics and Computing	2	24	6				70	1160132	DET	
19	1160703	Java Programming	2	20	10				70	1160450	DET	
Total:			**17**									
IC Design												
1	1160707	Digital Integrated Circuit Design	2	25	5				70	1160572 1160640	DET	
2	1160641	Digital System Design using HDL Laboratory	1				30		20	1160640	DET	
3	1160642	SoC Design	3	39	6				105	1160572 1160640	DET	
4	1160643	Analog and Mixed-Signal Integrated Circuit Design	3	40	5				105	1160572	DET	
5	1160708	Project in IC Design	1					ĐA	50	1160572 1160642	DET	
6	1160833	Specialized Laboratory	1				30		20	1160156	DET	
7	1160832	IC Design Laboratory 2	1				30		20	1160707 1160643	DET	
Select 3 out of the following 6 courses: (6/12 credits)												
8	1160625	Parallel Computing Programming	2	30					70	1160450	DET	
9	1160644	Embedded Systems on SoC	2	25	5				70	1160132 1160583	DET	
10	1160638	Image Processing on FPGA	2	24	6				70	1160400	DET	
11	1160645	Specialized in IC Design (ASIC)	2	25	5				70	1160640 1160572	DET	
12	1160583	Embedded Systems Design	2	27		6			67	1160568 1160132	DET	
13	2020608	Nano Materials and Devices	2	26		8			66		DET	
Total:			**18**									

Semester 9

No	Course Code	Course Name	Semester	No. credits			In-Class hours	Experimental/ Practice	Others	Self-study hours	Prerequisite Course Code	Managing Department
				Theory	Practice	Discussion						
1	1160713	Graduation Internship	4					TT	200		DET	
2	1160588	Graduation Project	8					ĐA	400		DET	
Total			**12**									

10. GUIDELINES FOR PROGRAM IMPLEMENTATION

- This training program applies to the 2025 enrollment intake for students majoring in Electronics and Telecommunications Engineering.
- The training process is based on the designed curriculum, training objectives, target audience, human resource requirements, and specific training needs. Regarding elective modules, the Faculty will advise students on selecting appropriate modules based on the actual development trends and social needs.
- The Dean is responsible for organizing and guiding the principles for developing detailed syllabi to ensure that objectives, content, and requirements are met, while satisfying the needs of learners and society.
- The training program is reviewed and updated at least once every two years to meet the development of the Electronics and Telecommunications Engineering industry and align with socio-economic development needs.

Gia Lai, July 22, 2025

RECTOR

Assoc. Prof. Dr. Doan Duc Tung