

CURRICULUM IN CIVIL ENGINEERING

1. Description of the training program

1.1 General introduction about the training program

The Civil Engineering program trains Civil Engineers with sufficient knowledge, skills, political qualities, ethics, professional style, and good health to be able to work effectively in various construction-related fields.

1.2 General information about the training program

Program name	Civil Engineering
Training program code	7580201
Issuing university	Nam Can Tho University
Degree name	Construction engineer
Level of training	University
Required credits	151
Training form	Formal
Training duration	4 years
Admission requirements	High school graduates
Grading scale	4
Graduation requirements	<ul style="list-style-type: none">- Students must have accumulated enough credits and completed all the required courses of the training program, with a total of 167 credits;- Students must have a cumulative grade point average (GPA) of 5.0 or higher for all courses throughout the entire program;- Students must meet the university's general requirements for English and computer proficiency standards;- Students must meet the program's requirements for soft skills and professional skills;- Students must have completed the national defense and security education program and fulfilled all the required courses.
Job position	<ul style="list-style-type: none">- Staff at the management boards of the Departments, District People's Committees, Districts; economic and infrastructure departments...- Design staff at Architectural Institutes, Department of Construction.....;- Technical officers, and supervisors at enterprises and organizations related to the construction industry.- Scientific and technological researchers in construction research institutes.

	- Teaching staff in universities, colleges, and intermediate schools in the field of construction.
Advanced education and training	Graduates can pursue master's and doctoral degrees both domestically and internationally.
Reference curriculum	Can Tho University, Can Tho University of Technology, Ho Chi Minh City University of Technology University of Architecture Ho Chi Minh City.
Update time	7/2022

1.3 Training Objectives

1.3.1 General objective

The Civil Engineering curriculum trains engineers to have enough knowledge, skills, political qualities, ethics, professional behavior, and good health to be able to work effectively in related fields. The undergraduate Civil Engineering program provides students with an overview of politics, the military, natural sciences, and specialized knowledge of construction. Therefore, students can develop soft skills and professional skills corresponding to the major in construction. In addition, students are supported and guided to form and develop political personalities and ethics. The undergraduate construction program provides graduates with an overview of politics, the military, the natural sciences, and specialized knowledge of construction.

1.3.2 Detailed objectives

M1: Understanding the Basic Principles of Marxism-Leninism, the Revolutionary line of the Vietnamese Communist Party, Ho Chi Minh's Ideology, National Defence Education

M2: Having a basic knowledge of mathematics, natural sciences, and suitable basic engineering to the construction industry to acquire and master knowledge and specialized skills in construction;

M3: Having in-depth knowledge in the fields of civil and industrial construction, including surveying, measuring, geology, foundation, building structure, knowing the structural design, engineering design construction organization;

M4: Knowing and having competence in forecasting, estimating, economic analysis, management, organization, supervision, construction direction and management, administration, and exploitation of civil and industrial construction works; having the ability to apply basic scientific knowledge and industry foundations such as: General Informatics, Graphics - Technical Drawing, Construction Mechanics, Building Materials, Geodesy, etc in learning the specialized knowledge on civil and industrial construction;

M5: Equipped with specialized knowledge in civil and industrial construction such as Civil and industrial architecture, Reinforced concrete structure, Steel structure, Foundation, Electrical engineering, Water supply and drainage, Engineering construction, Construction organization, Construction economics, etc for calculating the design, formulating measures, organizing, managing and administering construction, construction supervision of civil and industrial construction works.

M6: Capable of self-study, self-research, experience, soft skills for self-development, and creativity in solving practical problems in the field of construction.

M7: Having professional ethics, and responsibility towards work, school, community, and society.

2. Training duration: 4 years

3. The total credit volume of the course: 151 credits (excluding the Physical Education and Defense-Security Education modules), distributed as follows:

KNOWLEDGE VOLUME	Compulsory knowledge	Elective knowledge	Total
General education knowledge	38		38
Professional education knowledge	104	9	113
- Basic knowledge of the field	45		45
- Specialized knowledge	55	3	58
- Graduation internship	4		4
- Graduation thesis/Alternative courses		6	6
Total credit volume	142	9	151

4. Admission requirements

- Admission is based on the results of the National High School Graduation Examination or the evaluation of academic records at the high school level in accordance with the combination of subjects for each major and admission is open nationwide.

5. Training process and graduation requirements

5.1 Training process

- Implement the university and college training regulations in the credit system and the current training regulations of Nam Can Tho University.

5.2 Graduation requirements

- Students who complete the training program are evaluated for graduation and recognized as graduates according to Article 27 of the credit-based training regulations.

- Attain the required level of English and computer skills in accordance with the university's general regulations (in terms of computer skills, students must attain modules 01 to 06 of the standard for using information technology skills according to Circular 03/2014/TT-BTTTT)

- Obtain certificates in National Defense-Security Education, Physical Education, Soft Skills, and Professional Skills.

- Evaluate the sectional score and course grade according to Articles 22 and 23 of the credit-based training regulations.

- Academic rankings and graduation rankings are determined in accordance with Articles 14 and 28 of the credit-based training regulations.

6. Curriculum Content

6.1 General education knowledge

Order	Course code	Course name	Number of Credits	Theory	Practice	Type
A	Political theory		10			
1	0101000889	Marxist-Leninist philosophy	2	2		Required
2	0101000641	Political Economy	2	2		Required
3	0101000890	Science socialism	1	1		Required
4	0101000900	Ho Chi Minh Ideology	2	2		Required

5	0101000869	History of the Communist Party of Vietnam	3	3		Required
B	Humanities and Social Sciences		2			
6	0101000891	Introduction to law	2	2		Required
C	Foreign Language		9			
7	0101000861	General English 1	3	3		Required
8	0101000862	General English 2	3	3		Required
9	0101000863	General English 3	3	3		Required
D	Math, Informatics, Natural Science		17			
10	0101000898	Advanced Math 1	3	3		Required
11	0101000899	Advanced Math 2	3	3		Required
12	0101000896	Basic information	3	2	1	Required
13	0101000883	Theory of probability and mathematical statistics	3	3		Required
14	0101000868	Linear algebra	2	2		Required
15	0101000902	General Physics	2	2		Required
16	0101000902	General Physics – Practice	1		1	Required
E	Physical education		3			
17	0101000872	Physical Education 1 (*)	1		1	Condition
18	0101000873	Physical Education 2 (*)	1		1	Condition
19	0101000874	Physical Education 3 (*)	1		1	Condition
F	Defense Education		8			
20	0101000871	Defense Education (*)	8	5	3	Condition

(*)Conditional courses, cumulative GPA is not calculated

6.2 The volume of professional education knowledge

Order	Course code	Course name	Number of Credits	Theory	Practice	Category
Industry knowledge section			45			
1	0101000077	Graphical drawing	3	2	1	Required
2	0101000026	Theoretical mechanics	3	3		Required
3	0101000042	Engineering geology	3	3		Required
4	0101000132	Strength of materials	3	2	1	Required
5	0101000132	Strength of materials – Practice	1		1	Required
6	0101000025	Structural Mechanics 1 (stationary)	3	3		Required

Order	Course code	Course name	Number of Credits	Theory	Practice	Category
7	0101000025	Structural Mechanics 2 (Super Static)	3	3		Required
8	0101000147	Hydraulic	3	3		Required
9	0101000024	Soil mechanics	3	3		Required
10	0101000024	Soil Mechanics – Practice	1		1	Required
11	0101000154	Geodetic	2	2		Required
12	0101000154	Geodetic - Practice	1		1	Required
13	0101000157	Building materials	3	3		Required
14	0101000157	Building Materials – Practice	1		1	Required
15	0101000100	Construction Electrical Engineering	3	3		Required
16	0101001219	Occupational safety engineering	3	3		Required
17	0101001548	Architectural technician internship (architectural and structural drawing on computer)	3		3	Required
18	0101000003	English for specific purposes	3	3		Required
Specialized knowledge section			58			
19	0101000096	Civil and industrial architecture	3	3		Required
20	0101000910	Civil and industrial architecture – Project	1		1	Required
21	0101000082	Reinforced concrete structure 1- basic structure	3	2	1	Required
22	0101000081	Reinforced concrete structure 1 - Project	1		1	Required
23	0101000084	Reinforced concrete structure 2 (house structure)	3	2	1	Required
24	0101000083	Reinforced concrete structure 2 - Project	1		1	Required
25	0101000116	Construction machine	3	3		Required
26	0101000118	Background and foundation	3	2	1	Required
27	0101000119	Foundations and	1		1	Required

Order	Course code	Course name	Number of Credits	Theory	Practice	Category
		foundations - Projects				
28	0101000014	Water supply and drainage	3	3		Required
29	0101000102	Construction Engineering	3	3		Required
30	010100103	Construction Engineering – Project	1		1	Required
31	0101000138	Organization of construction	3	3		Required
32	010100139	Construction organization – Project	1		1	Required
33	0101000135	Applied Informatics – Engineering 1 (Autocad 2D)	3		3	Required
34	0101000136	Applied Informatics – Engineering 2 (SAP)	3		3	Required
35	0101000137	Applied Informatics – Engineering 3 (ETABS)	2		2	Required
36	0101000093	Basic steel structure	3	3		Required
37	0101000123	Methods of research and writing scientific reports	2	2		Required
38	0101000095	Industrial building steel structure	3	3		Required
39	0101000091	Steel Structure – Project	1		1	Required
40	0101000141	Project experiment	2	2		Required
41	0101000964	Project Experiment – Practice	1		1	Required
42	0101000112	Construction law	2	2		Required
43	0101001566	Project Estimation	3	2	1	Required
44		Elective (choose 1 of 2 subjects)	3	3	0	
45	0101000090	Reinforced concrete high-rise building structure	3	3		Elective
46	0101000140	Soft ground treatment for works *	3	3		Elective
47		Graduation internship and graduation thesis	10		10	

Order	Course code	Course name	Number of Credits	Theory	Practice	Category
48	0101000152	Graduation internship	4		4	Required
49		Group 1: Making Graduation Thesis				
50	0101000073	Graduation thesis	6		6	Elective
51		Group 2: If you don't do the graduation thesis, you will study 2 subjects instead				
52	0101000086	Special reinforced concrete structure	3	2	1	Elective
53	0101001347	Designing a civil work	3	2	1	Elective

7. Teaching plan

7.1 Semester 1

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Graphical drawing	3	60	30	30	Required
2	Basic English 1	3	45	45		Required
3	Linear algebra	2	30	30		Required
4	Defense and security education*	8*	165	75	90	Condition
5	Physical Education 1*	1*			30	Condition
6	Philosophy	2	30	30		Required
7	General law	2	30	30		Required
8	Basic information	3	60	30	30	Required
	Total	15				

7.2 Semester 2

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Theoretical mechanics	3	45	45		Required
2	Basic English 2	3	45	45		Required
3	Physical Education 2*	1*	30		30	Required
4	Probability theory of math statistics	3	45	45		Required
5	Political Economy	2	30	30		Required
6	Science socialism	1	15	15		Required
7	Advanced Math 1	3	45	45		Required
8	General Physics	2	30	30		Required
9	General Physics - Practice	1	30		30	Required
	Total	18				

7.3 Semester 3

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Advanced Math 2	3	45	45		Required
2	Building materials	3	45	45		Required
3	Building Materials – Practice	1	30		30	Required
4	Strength of materials	3	60	30	30	Required
5	Strength of materials – Practice	1	30		30	Required
6	Structural Mechanics 1 (Static)	3	45	45		Required
7	Applied Informatics Technology 1 (Autocad 2D)	3	90		90	Required
8	Basic English 3	3	45	45		
9	Physical Education 3*	1*	30		30	Condition
	Total	20				

7.4 Semester 4

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Engineering geology	3	45	45		Required
2	Soil mechanics	3	45	45		Required
3	Soil Mechanics - Practice	1	30		30	Required
4	Reinforced concrete structure 1 – Basic structure	3	60	30	30	Required
5	Reinforced concrete structure 1 – Project	1	30		30	Required
6	Geodetic	2	30	30		Required
7	Geodetic - Practice	1	30		30	Required
8	Ho Chi Minh Thought	2	30	30		Required
9	Structural Mechanics 2 (Super Static)	3	45	45		Required
10	Architectural technician - Internship (architectural and structural drawing on machine)	3	90		90	Required
	Total	22				

7.5 Semester 5

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Hydraulic	3	45	45		Required
2	Reinforced concrete structure 2 (house structure)	3	60	30	30	Required
3	Reinforced concrete structure 2 - Project	1	30		30	Required
4	Basic steel structure	3	45	45		Required
5	Construction Electrical Engineering	3	45	45		Required
6	Applied Informatics 2 (SAP)	3	90		90	Required
7	Revolutionary line of the Communist Party of Vietnam	3	45	45		Required
8	Water Supply – Drainage	3	45	45		Required
	Total	22				Required

7.6 Semester 6

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Specialized English (Construction)	3	45	45		Required
2	Civil and industrial architecture	3	45	45		Required
3	Civil and industrial architecture - Project	1	30		30	Required
4	Background and foundation	3	60	30	30	Required
5	Foundations and foundations - Projects	1	30		30	Required
6	Applied Engineering Informatics 3 (ETABS)	2	60		60	Required
7	Project Estimation	3	60	30	30	Required
	<i>Elective course, choose 1 of 2 subjects</i>	3				
8a	Structural reinforced concrete high-rise buildings	3	45	45		Elective
8b	Soft ground treatment for works*	3	45	45		Elective

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
	Total	19				

7.7 Semester 7

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Industrial building steel structure	3	45	45		Required
2	Steel Structure – Projects	1	30		30	Required
3	Construction Engineering	3	45	45		Required
4	Construction Engineering - Projects	1	30		30	Required
5	Construction machine	3	45	45		Required
6	Organization of construction	3	45	45		Required
7	Construction organization - Project	1	30		30	Required
8	Project experiment	2	30	30		Required
9	Work experiment – practice	1	30		30	Required
10	Occupational safety engineering	3	45	45		Required
	Total	21				

7.8 Semester 8

Order	Course name	Number of Credits	Total period	Number of periods		Type
				Theory	Practice	
1	Construction law	2	30	30		Required
2	Methods of research and writing scientific reports	2	30	30		Required
3	Graduate Internship (Undergraduate Civil Engineering)	4	120		120	Required
Group 1: Making Graduation Thesis						
4	Graduation Thesis (Project)	6	180		180	Elective
Group 2: If you don't do the Graduation Thesis, study 2 instead						
5	Special reinforced concrete structure	3	60	30	30	Elective
6	Designing a civil work	3	60	30	30	Elective
	Total	14				

8. Instruction for program implementation

8.1 For Departments and Faculties

- The department of specialized management is responsible for reviewing, and leading the compilation of detailed outlines for subjects belonging to the basic knowledge blocks of the program in accordance with the credit load of this program. They provide a list of textbooks, lectures, and reference materials for all subjects to the University Library and keep them in the Faculty's Office. At the beginning of each semester, they coordinate with other units in the University to implement the training plan according to the schedule.
- Assign lecturers with a Master's degree or above (in the same or related fields) to teach theoretical subjects, and provide detailed outlines of subjects for lecturers to ensure adherence to the University's teaching plan.
- The study advisor team must thoroughly understand the entire credit-based training program to guide students in registering for subjects.

8.2 For Lecturers

- When assigned to teach one or more subjects, lecturers must study the detailed outline of the subject's content thoroughly to prepare suitable lectures, teaching aids, and tools.
- Lecturers must fully prepare lectures, and course materials, and provide them to students to prepare before class.
- Organize seminars, focus on organizing group learning, and guide students in writing essays, and projects, determine teaching methods, present in class, guide discussions, solve problems in class, in practice rooms, in labs and guide students in writing reports.
- Pay attention to developing students' ability to learn and research independently throughout the teaching process and guide them in internships and practice.
- Pay attention to the logic of imparting and absorbing knowledge blocks, stipulate prerequisite subjects for mandatory subjects, and prepare lecturers to meet the teaching requirements of elective subjects.

8.3 For Students

- Students must consult their study advisor for advice in selecting subjects that are appropriate to the schedule. They must study the lesson before class to better understand the lecture. They must ensure that they have enough time to attend lectures and listen to the lecturer's guidance. Students must be self-motivated in self-learning and research, while actively participating in group learning and attending all seminars.
- Students should proactively and actively exploit the resources available online and in the university library to serve their self-learning and research.
- Regularly participating in extracurricular activities, and cultural and artistic events to improve communication skills and understanding of society and people.

8.4 Facilities and equipment for teaching, practice, and internship

- A system of lecture rooms with traditional equipment, additionally equipped with teaching aids (projector).
- Computer labs with software installed for basic computer training.
- Physics labs equipped with visual aids for basic physics courses.
- Equipment such as electronic total stations, and leveling instruments used for practical surveying courses.

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