MINISTRY OF EDUCATION AND TRAINING
NAM CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIET NAM
Independence – Freedom - Happiness

UNDERGRADUATE PROGRAM

Issued together with Decision No. /QĐ-ĐHNCT dated / /2025 of The Rector of Nam Can Tho University

Name of program: Civil Engineering

Level: Undergraduate

Major: Civil Engineering

Code: 7580201

Type of education: Full-time

1. Program description

1.1. Introduction to the program

Civil Engineering is a program that trains engineers in the design, construction, supervision, and management of civil and industrial projects. Students gain both fundamental and specialized knowledge in structures, foundations, materials, construction techniques, and software such as AutoCAD, SAP, and ETABS. Graduates can work in construction firms, government agencies, research institutes, or pursue careers in teaching at technical institutions.

1.2. General information about the program

Name of program in Vietnamese	Kỹ thuật xây dựng
Name of program in English	Civil Engineering
Program code	7580201
Degree-granting institution	Nam Can Tho University
Degree	Civil Engineering
Level	Undergraduate Degree
The number of required credits	154
Type of education	Official
Program duration	4.5 years
Eligible candidates for admission	High school graduates
Grading scale	4
Graduation requirements	- Accumulate enough modules and volume of the educational program to reach 154 credits;

	- Meet the output standards for English and Computer skills according to the University's regulations; - Meet the output standards of Soft and Professional Skills; - Have a certificate of National Defense and Security Education and complete the required modules.
Job opportunities	- Employees at the management boards of Departments and District People's Committees; Department of infrastructure, ... - Design staff at Architectural Institutes, Departments of Construction, ... - Technicians and supervisors at businesses and organizations related to the construction industry. - Science and technology research staff in construction research institutes. - Teaching staff at Universities, Colleges, and Intermediate Schools in the field of construction.
Postgraduate study options	Continue to study for a master's degree in Vietnam and abroad.
Reference program	Undergraduate training program in Civil Engineering at Can Tho University, Can Tho University of Technology, Ho Chi Minh City University of Technology, Ho Chi Minh City University of Architecture.
Update time	5/2025

1.3. Program goals

1.3.1. General goals

PO: The goal of the Civil Engineering program is to train:

- Civil Engineers in charge of design, construction, supervision consulting, and management of construction projects.

- Science and technology research staff in construction research institutes.

- Teaching staff at Universities, Colleges, and Intermediate Schools in the field of construction.

After graduatation, they have good political and moral qualities, have knowledge and skills for professional practice, have the ability to self-study, research, be creative and solve legal requirements and problems. constructive theory and practice, able to adapt to the working environment, self-adapt for life-long learning, conscious of serving the people.

1.3.2. Specific goals

- **PO1:** Understand basic problems of Marxism-Leninism, Revolutionary policy of the Communist Party of Vietnam, Ho Chi Minh Thought, Vietnamese laws, National Defense policy;

- **PO2:** Have basic knowledge of mathematics, natural sciences and basic engineering suitable for the civil construction to acquire and master specialized and specialized knowledge and skills about construction;

- **PO3:** Have in-depth knowledge in the field of civil and industrial construction, including surveying, measuring, geology, foundations, construction structures, knowing how to design construction structures, and design organizational technology. construction officials;

- **PO4:** Know and master forecasts, estimates, economic analysis, management, organization, supervision, construction direction and management, administration and exploitation of civil and industrial construction projects; Able to apply basic scientific knowledge and industry foundations such as: General information technology, Graphics - Technical drawing, Construction mechanics, Construction materials... in learning knowledge Specialized knowledge of civil and industrial construction;

- **PO5:** Equipped with specialized knowledge in civil and industrial construction such as: Civil and industrial architecture, Reinforced concrete structures, steel structures, Foundations, Electrical engineering, Water supply and drainage, Engineering construction, Construction Management, Construction estimation, ... to calculate design; establish measures, organize, manage and administer construction; Supervision of construction of civil and industrial construction projects;

- **PO6:** Have the ability to self-study, self-research, experience and soft skills to self-develop professionally and be creative in solving practical problems in the field of construction. Work independently, research and solve problems independently, master situations, work in groups, organize and arrange work effectively;

- **PO7:** Have professional ethics, and responsibility towards work, school, community and society;

1.4. Student learning ouselectiveomes

The program is designed to ensure graduates gain the following specific knowledge, skills, autonomy and responsibilities

a. Knowledge

- **SO1:** Understand basic knowledge of Marxism-Leninism, Ho Chi Minh's ideology, revolutionary guidelines of the Communist Party of Vietnam, Vietnamese law, national defense and security in professional activities and life. Apply knowledge about National Defense Education, thereby training awareness and responsibility to protect the homeland.

- **SO2:** Understand and apply basic knowledge of mathematics, natural science and basic engineering to manage, organize and supervise construction activities.

- **SO3:** Understand and apply professional knowledge about architecture, structures, geology, foundations, and specialized software to design and execute construction projects.

- **SO4:** Understand and apply professional knowledge of estimating, construction economic analysis, construction techniques, construction organization, construction

management, to be able to manage, supervise, and organize construction , and management of civil and industrial construction projects.

b. **Skills**

- **SO5:** Analyze, synthesize, evaluate and apply the knowledge accumulated during the study process into actual professional practice, solving problems in the construction field according to requirements and set goals;
- **SO6:** Design and read construction drawings proficiently; survey, measure and locate a construction project; Know and be proficient in forecasting, estimating, economic analysis, management, organization, supervision, construction direction and management, administration and exploitation of civil and industrial construction projects;
- **SO7:** Communicate effectively through presentations, reports, discussions, listening and controlling situations. Collaborate, work in groups, organize and arrange work effectively; Instruct, communicate and evaluate the competencies of others in professional and related fields;
- **SO8:** Can write scientific and technical reports. Present, answer, and criticize issues in the specialized field of construction engineering through words, images, and multimedia software;

c. Capacity for autonomy and responsibility

- **SO9:** Demonstrate civic responsibility, political qualities, patriotism and love of work; Understand and properly implement regulations on personal ethics, professional ethics, personal responsibility and responsibility for the group. Have a persistent, hard-working, disciplined, confident, enthusiastic, honest and objective attitude in life and work;
- **SO10:** Work independently and in groups in changing working conditions, expressing personal perspectives on problems that need to be solved. Plan, coordinate and effectively manage activities;

1.5 Teaching and learning methods/strategies and assessment methods

1.5.1. Teaching and learning methods/strategies

The teaching methods are presented in the table below

Methods and form of teaching	Purpose
Presentation	Provide students with the basic knowledge system of the subject scientifically and logically.
Discussion	Through the question and answer between lecturers and students to clarify the content of knowledge in the subject.
Assignment, practice	Help students understand and apply the subject content to practical issues.
Self-study, reading of reference materials	Help learners enhance self -study and self -study capacity

1.5.2. Grading scale, form, assessment criteria, and weight of scores

No.	Form	%	Assessment criteria	Maximum score
1	Attendance	20	- Proactivity, the level of initiative in preparing lessons and participating in activities during class	5
2	Individual assignment	15	- Compulsory attendance, absent no more than 20% of classes. Depending on the number of absent sessions, the lecturer decides the number of points according to the absence rate.	5
3	Progress assessment	15	- Quality of delivered products. - Test evaluation criteria specified by the instructor - Report to groups or topics or specialized exercises according to the regulations of the lecturer in charge of teaching.	10
4	Final exam	50	According to the answers, the instructor's grading scale.	10

2. Program duration: 4.5 years

3. Required total credits

Required total credits: 154 credits excluding the Physical Education and Defense and security education courses, distributed as follows:

Knowledge	*Obligatory knowledge*	*Elective knowledge*	*Total*
General knowledge	**32**		**32**
Professional knowledge	**113**	**9**	**122**
Fundamental knowledge	45		45
Specialized knowledge	58	3	58
Graduation internship	4		4
Graduation thesis/Alternative courses	6	6	6
Total	**145**	**9**	**154**

4. Eligible candidates for admission: Graduate high school students

5. Curriculum, graduation requirements

5.1. Curriculum

Implement the regulations for regular university and college training according to the credit system and current training regulations of Nam Can Tho University.

5.2. Graduation requirements

Students who complete the training program will be considered for graduation and recognized as graduating according to Article 27 of the training regulations

according to the credit system.

Achieve English proficiency according to the general regulations of the University. For English-taught programs, applicants must meet the English language output requirements as stipulated by the university.

Obtained certificates in National Defense-Security Education; Physical Education; Soft Skills and Vocational Skills.

Evaluation of component scores and course scores are carried out according to Articles 22 and 23 of the training regulations according to the credit system

Academic year ranking and graduation ranking are carried out according to Articles 14 and 28 of the training regulations according to the credit system

6. *Program structure*

6.1. *General knowledge*

No.	Course code	Course name	Number of credits	Theory	Practice	Category
A	*Political theory*					
1.	0101000889	Philosophy	3	3		
2.	0101000641	Political economy	2	2		
3.	0101000890	Scientific socialism	2	2		
4.	0101000900	Ho Chi Minh's Thought	2	2		
5.	0101000869	History of the Communist Party of Vietnam	2	2		
B	*Social Sciences and Humanities*					
6.	0101000891	General law	2	2		
C	*Mathematics - Information Technology - Natural Sciences*					
7.	0101000896	Basic Computer technology	3	2	1	
8.	0101000883	Generative Artificial Intelligence Applications.	2	2		
9.	0101000898	Digital Transformation	2	2		
E	*Physical education*					
10.	0101000872	Physical education 1 *	1		1	
11.	0101000873	Physical education 2 *	1		1	
12.	0101000874	Physical Education 3 *	1		1	

No.	Course code	Course name	Number of credits	Theory	Practice	Category
F	*National Defense Education*					
13.	0101000871	National defense education *	8	5	3	

** Prerequisite courses, not included in the cumulative GPA calculation*

6.2. *Professional knowledge*

No.	Course code	Course name	Number of credits	Theory	Practice	Category
Fundamental knowledge						
14.	0101000902	Engineering graphics and designs	3	3		
15.	0101000960	Elements of mechanical engineering	3	3		
16.	0101000077	Engineering geology	3	3		
17.	0101000026	Strength of Materials	3	3		
18.	0101000868	Strength of materials - Practice	1		1	
19.	0101000898	Structural analysis 1 static	3	3		
20.	0101000899	Structural analysis 2 hyperstatic	3	3		
21.	0101000135	Hydraulics enigeering	3	3		
22.	0101000132	Soil mechanics	3	3		
23.	0101000962	Soil mechanics - Practice	1		1	
24.	0101000024	Surveying	2	2		
25.	0101001035	Surveying - Practice	1		1	
26.	0101000081	Construction materials	3	3		
27.	0101000082	Construction materials - Practice	1		1	
28.	0101000025	Element of electrical engineering	3	3		
29.	0101000042	Labor safety engineering	3	3		
30.	0101001548	Practice for building drawing	3		3	
31.	0101000014	English for Civil Engineering	3	3		
Specialized knowledge						
32.	0101000154	Civil and industrial architecture	3	3		

No.	Course code	Course name	Number of credits	Theory	Practice	Category
33.	0101000156	Civil and industrial architecture – Project	1		1	
34.	0101000014	Reinforced concrete design 1	3	3		
35.	0101000093	Reinforced concrete design 1 – Project	1		1	
36.	0101000907	Reinforced concrete design 2	3	3		
37.	0101000083	Reinforced concrete design 2 - Project	1		1	
38.	0101000084	Construction machines	3	3		
39.	0101000100	Foundation engineering	3	3		
40.	0101000136	Foundation engineering - Project	1		1	
41.	0101000157	Water supply and drainage	3	3		
42.	0101000965	Construction techniques	3	3		
43.	0101000003	Construction techniques - Project	1		1	
44.	0101001566	Construction management	3	3		
45.	0101000096	Construction management - Project	1		1	
46.	0101000910	Computer aided design 1 - Autocad 2D	3		3	
47.	0101000118	Computer aided design 2 - SAP	3		3	
48.	0101000119	Computer aided design 3 - ETABS	2		2	
49.	0101001565	Steel structure	3	3		
50.	0101000095	Research methods and writing scientific reports	2	2		
51.	0101000091	Steel structure design	3	3		
52.	0101001219	Steel structure design - Project	1		1	
53.	0101000102	Construction testing	2	2		
54.	0101000103	Construction testing - Practice	1		1	
55.	0101000141	Construction laws and regulations	2	2		

No.	Course code	Course name	Number of credits	Theory	Practice	Category
56.	0101000964	Project estimate	3	2	1	
Elective course of specialized knowledge						
57.	0101000147	High-rise reinforced concrete building	3	3		
58.	0101002153	Soft soil engineering	3	3		
59.	0101000112	Building information modeling	3	3		
60.	0101000116	Low impact development	3	3		
Graduation internship						
61.	0101000123	Graduation internship	4		4	
62.	0101000138	Graduation thesis	6		6	
Alternative Graduation thesis						
63.	0101002155	Special reinforced concrete structure	3	3		
64.	0101000152	Design a construction project	3	3		

7. *Tentative teaching plan*

7.1. *Semester 1*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Engineering graphics and designs	3	60	30	30	*Comp*
2	Generative Artificial Intelligence Applications.	2	30	30		*Comp*
3	Philosophy	3	45	45		*Comp*
4	General law	2	30	30		*Comp*
5	Basic Computer technology	3	60	30	30	*Comp*
6	Physical education 1 *	1*			30	approve
	Total	**14**				

7.2. *Semester 2*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Elements of mechanical engineering	3	45	45		*Comp*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
2	Probability theory and mathematical statistics	3	45	45		*Comp*
3	Political economy	2	30	30		*Comp*
4	Advanced Mathematics 1	3	45	45		*Comp*
5	National defense education *	8*	165	75	90	APPROVE
6	Physical education 2 *	1*	30		30	APPROVE
	Total	**12**				

7.3. *Semester 3*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	General physics	2	30	30		*Comp*
2	General Physics – Practice	1	30		30	*Comp*
3	Advanced Mathematics 2	3	45	45		*Comp*
4	Construction materials	3	45	45		*Comp*
5	Construction materials - Practice	1	30		30	*Comp*
6	Strength of Materials	3	60	30	30	*Comp*
7	Strength of materials - Practice	1	30		30	*Comp*
	Total	**14**				

7.4. *Semester 4*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Structural analysis 1 static	3	45	45		*Comp*
2	Computer aided design 1 - Autocad 2D	3	90		90	*Comp*
3	Engineering geology	3	45	45		*Comp*
5	Physical Education 3 *	1*	30		30	*Comp*
4	Digital transfomation	2	30	30		*Comp*
	Total	**12**				

7.5. *Semester 5*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Soil mechanics	3	45	45		*Comp*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
2	Soil mechanics - Practice	1	30		30	*Comp*
3	Reinforced concrete design 1	3	60	30	30	*Comp*
4	Reinforced concrete design 1 – Project	1	30		30	*Comp*
5	Surveying	2	30	30		*Comp*
6	Surveying - Practice	1	30		30	*Comp*
7	Ho Chi Minh's Thought	2	30	30		*Comp*
	Total	**13**				

7.6. *Semester 6*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Structural analysis 2 hyperstatic	3	45	45		*Comp*
2	Practice for building drawing	3	90		90	*Comp*
3	Computer aided design 2 - SAP	3	90		90	*Comp*
4	Reinforced concrete design 2	3	60	30	30	*Comp*
5	Reinforced concrete design 2 - Project	1	30		30	*Comp*
	Total	**13**				

7.7. *Semester 7*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Element of electrical engineering	3	45	45		*Comp*
2	Revolutionary policy of the Communist Party of Vietnam	2	30	30		*Comp*
3	Steel structure	3	45	45		*Comp*
4	Scientific socialism	2	30			*Comp*
	Total	**12**				

7.8. *Semester 8*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Civil and industrial architecture	3	45	45		*Comp*
2	Civil and industrial architecture – Project	1	30		30	*Comp*
3	Foundation engineering	3	60	30	30	*Comp*
4	Foundation engineering - Project	1	30		30	*Comp*
5	Water supply and drainage	3	45	45		*Comp*
	Total	**11**				

7.9. *Semester 9*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	English for Civil Engineering	3	45	45		*Comp*
2	Computer aided design 3 - ETABS	2	60		60	*Comp*
3	Construction machines	3	45	45		*Comp*
	Selective					
4	High-rise reinforced concrete building	3	45	45		*Ele*
5	Soft soil engineering	3	45	45		*Ele*
6	Building information modeling	3	45	45		*Ele*
7	Low impact development	3	45	45		*Ele*
	Total	**11**				

7.10. *Semester 10*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Steel structure design	3	45	45		*Comp*
2	Steel structure design - Project	1	30		30	*Comp*
3	Construction techniques	3	45	45		*Comp*
4	Construction techniques - Project	1	30		30	*Comp*
5	Project estimate	3	60	30	30	*Comp*
	Total	**11**				

7.11. *Semester 11*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Construction management	3	45	45		*Comp*
2	Construction management - Project	1	30		30	*Comp*
3	Construction testing	2	30	30		*Comp*
4	Construction testing - Practice	1	30		30	*Comp*
5	Labor safety engineering	3	45	45		*Comp*
	Total	**10**				

7.12. *Semester 12*

No.	*Course name*	*Number of credits*	*Total periods*	*Class periods*		*Category*
				Theory	*Practice*	
1	Construction laws and regulations	2	30	30		*Comp*
2	Research methods and writing scientific reports	2	30	30		*Comp*
3	Graduation internship	4	120		120	*Comp*
4	Graduation thesis	6	180		180	*Ele*
	Special reinforced concrete structure	3	60	30	30	*Ele*
	Design a construction project	3	60	30	30	*Ele*
	Total	**14**				

** If students do not meet the requirements to complete their graduation thesis, they will take alternative courses*

8. *Guidelines for Program Implementation*

8.1 *Faculties and departments*

- Incharges of other departments are required to prepare academic plan at department level referring to institutional academic plan.

8.2 *Lecturers*

- All lecturers/Senior lecturers are required to prepare course level and class level lesson plans referring departmental academic plan.

- Teachers are required to prepare a course plan, taking into account departmental academic plan, number of weeks available and courses to be taught.

- Teachers are required to prepare lesson plan for every theory class. This plan may

comprise of contents to be covered, learning material for execution of a lesson plan.

- Teachers are required to plan for expert lectures from field/industry. Necessary steps are to plan in advance, identify field experts, make correspondence to invite them, take necessary budgetary approval eselective.

- Teachers are required to plan for guided library exercises by identification of course specific experience requirement, setting time, assessment, eselective. The assignments and seminars can be thought of as terminal ouselectiveome of library experiences.

8.3 *Students*

- The student centred activities may be used to develop generic skills like task management, problem solving, managing self, collaborating with others eselective.

- Where ever possible, it is essential to use activity based on learning rather than relying on delivery based conventional teaching all the time.

- Students may be given relevant and well thought out project assignments, which are purposeful and develop practical skills. This will help students in developing creativity and confidence for their gainful employment.

8.4 *Facilities and equipment for teaching, practice, and internships*

- Lecture halls, practice rooms, workshops, laboratories and other facilities for research activities

- Library

- Textbooks and documents

+ Vietnamese language material reading room

+ Foreign language material reading room

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