

TRAINING PROGRAM OF FOOD TECHNOLOGY

(Issued together with Decision No 469/QĐ-ĐHTĐ 20/08/2021 by Rector of Tay Do University)

A. GENERAL INFORMATION

1. Name of training program (English name)	Food Technology
2. Degree	Higher education
3. Training codes	7540101
4. Admission candidates:	Graduated from high school or equivalent
5. Training time	4.0 years
6. Training form	Full time
7. Required credits	150 (no include Military Training and Physical Education)
8. Scale	10.0 scale or 4.00 scale
9. Diploma	Engineer in Food Technology
10. Working position	Working at company or food processing factories
11. Possibility for further education	After graduating, if no working, may be continuing study MSc. program, PhD. program to improve the knowledge and skill on food technology and learn more majors related to food technology such as Biotechnology and Post-harvest Technology.

B. TRAINING OBJECTIVE AND LEARNING OUTCOMES

I. Training Objectives

1. General objectives

Education program food technology for training students on science and food technology, professional skills, soft skills food production, research and food technology transfer, suitable for the business context. economic, social and environmental.

2. Specific objectives

2.1. Quality

Knowing and understanding about the political qualities, ethics and good health to participate in building and protecting the Fatherland.

2.2. Knowledges

G1.Equip learners with basic knowledge of mathematics as well as basic scientific knowledge such as physics and environment.

G2. Being able to and understanding about core knowledges such as chemical theory, analytical chemistry, biochemistry, food chemistry, process and equipment, microbiology and specialized knowledge such as factory design and food equipment.

G3. Realising technic skills of food processing technology including fermented products, sugar, cakes, and candy; food processing technology, meat, fish, milk, products from tropical plants such as vegetable oil, coffee, cocoa, drinks..., food preservation techniques, food packaging; food analysis, food quality management.

2.3. Skills

G4. Advise design

Equipping for students with advising skills on technology and food processing and preservation equipment.

G5. Organizing installation and operation

Equipping for students with skills to organize, install and operate food technology equipment and production lines through practical exercises, cognitive exercises and internships at the factory.

G6. Executive management

Team students with skills to manage and operate food production lines.

G7. Analyzing and processing for information

Group students with skills to look up, find specialized information, analyze and process information through exercises in subjects, course projects and graduation theses.

G8. Problem - solving

Equipping for students with problem-solving skills through specialized software and course projects.

G9. Communication

Equipping for students with basic skills in presenting and explaining problems, designing solutions, and implementing solutions in the Food Technology industry through laboratory reports, internships, and subject projects. studies, graduation projects or professional presentation reports.

G10. Work in team

Equipping for students to work effectively in different roles such as organizing and managing teams to achieve efficiency from groups of students with different interests, living environments and technical expertise levels through carrying out professional presentations, internships, course projects and graduation projects.

G11. Foreign language

Good application of information technology and foreign languages (English level 3/6 of Vietnam's foreign language proficiency framework, equivalent level of TOEIC \geq 450 points)

2.4. Attitude

G12. Equipping for students with a sense of responsibility towards work and the community; Cultivating a sensitivity of discipline and industrial style.

II. Learning outcomes

2.1. Knowledges

Learning outcomes	Explain
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LO1	Application the basic knowledges of general law, social sciences and humanities, and natural sciences to respond to requirements for acquiring specialized knowledge and using knowledge of Marxist-Leninist philosophy, the policies of The Communist Party of Vietnam, Ho Chi Minh's ideology, knowledge of Military Training, Physical Education to meet the requirements of building and protecting the homeland.
LO2	Good at using English, computers, office software and other Applied informatics software for working.
LO3	Application knowledges of Biochemistry, Thermodynamic Engineering, Food engineering, reading drawings and operating food equipments.
LO4	Mastering knowledge of scientific research methods, experimental designs and data collections in performing experiments, analyzing and evaluating the quality of raw materials, using in a food technology process as well as evaluating the quality of corresponding food products.
LO5	Students apply well-specialized knowledges about food nutrition, food microbiology, food chemistry, preservation, cold techniques, post-harvest techniques, quality management systems (ISO, GMP, HACCP, SQF, ...) as well as the end-product belonging to the fields of food technology to participate in the management, operation and control of equipment systems, production processes and production management of food products.
LO6	Having enough knowledges to participate in research and development of products in the food technology industry, and be able to participate in scientific research projects and assess the impact of technical solutions on society and the environment in a global context.
LO7	Application practical knowledges about processing at the laboratory, in the factory, dissertation, and professional to design a system, a device or a technological process to meet practical requirements as well as be able to identify, Set directions and solve technical problems in food processing.

2.2. Skills

2.2.1. Professional skills

Learning outcomes	Explain
LO8	Competently use a system of modern laboratory equipment. Organizing and managing production in food processing
LO9	Participating in operating, managing, and solving professional work scientifically. Analyzing, evaluating and controlling indicators to ensure quality, safety and food hygiene.
LO10	Ability to calculate, design, construct, install, maintain and repair machines and equipment in factories; production design and planning; project planning; Operating and managing technology for production facilities and food product processing plants.
LO11	Self-study to improve qualifications in specialized fields of food science. Access, research and deploy new technology, improve productivity and product quality.

2.2.2. Soft skills

Learning outcomes	Explain
LO12	Effectively apply soft skills such as the ability to work independently, dynamically, and creatively; ability to collaborate, organize, lead and work in groups; Communicate effectively through writing, presentations, discussions, negotiations, and mastering situations in practical work.
LO13	Good use of information technology and foreign languages (English level 3/6 of Vietnam's foreign language proficiency framework, level equivalent to TOEIC \geq 450 points) to serve professional and management work.

2.3. Capacity for autonomy and responsibility

Students need to achieve autonomy and responsibility as presented in the table below for the training process to be effective.

Learning outcomes	Explain
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LO14	Be self-reliant, confident and conscious of lifelong learning, proactively improve professional qualifications in learning activities, research and application of professional knowledge in food technology
LO15	Having civic responsibility, have professional ethics, love the profession, and be aware of the responsibility of a food technology engineer in improving and protecting the health of food users.
LO16	Self-directed work independently, professional in living and industrial style, working planned and scientifically.

III. The content of studying program (name and credit for each subject): 150 credits (not include Military Training and Physical Education)

Total credit		
1	General knowledges	36
2	Professional knowledges	98
	- Compulsory Knowledges	88
	- Optional knowledges	10
3	Graduation	16
	- Graduation essay	6
	- Graduation thesis (or do the minor Graduation project and study 02 alternative subjects)	10

1. General Knowledge: 36 + (11 Military Training and Physical Education) credits

Number	Code	Subject	Credits	Note
1.	0301001769	Marxist - Leninist Philosophy	3	
2.	0301001825	Marxist - Leninist Political Economy	2	
3.	0301001826	Scientific Socialism	2	
4.	0301001827	History of Vietnamese Communist Party	2	
5.	0301000665	Ho Chi Minh Ideology	2	
6.	0301000946	TOEIC 1	4	
7.	0301000947	TOEIC 2	4	
8.	0301001673	Basic informatics	3	
9.	0301000669	Advanced Mathematics	3	

Number	Code	Subject	Credits	Note
10.	0301000676	General Mechanics and Heat	2	
11.	0301000760	General Mechanics and Heat Laboratoy	1	
12.	0301000761	General chemistry	2	
13.	0301000762	General Chemistry Laboratoy	1	
14.	0301001556	Analytical Chemistry	2	
15.	0301001557	Practical Analytical Chemistry	1	
16.	0301000667	General law	2	
17.	0301001035	Physical Education 1 - volleyball**	1	
18.	0301001036	Physical Education 1 - Football**		
19.	0301001037	Physical Education 1 - Badminton**		
20.	0301000660	Physical Education 2 - volleyball **	1	
21.	0301001038	Physical Education 2 - Football **		
22.	0301001039	Physical Education 2 - Badminton **		
23.	0301001030	Physical Education 3 - volleyball **	1	
24.	0301000661	Physical Education 3 - Football **		
25.	0301000662	Physical Education 3 - Badminton **		
26.	0301000650	Military Trainning**	8	

2. Professional knowledges: 98 credits

Number	Code	Subject	Credits	Note
1. Compulsory Knowledge				
Core				
1.	0301000467	Biochemistry B	2	
2.	0301000595	Experimental Biochemistry B	1	
3.	0301000375	Thermodynamic Engineering	2	
4.	0301000171	Engineering Drawing	2	
5.	0301000268	Food Engineering 1	3	
6.	0301000269	Food Engineering 2	3	
7.	0301000593	Food Engineering Practice 1 (Lab)	1	
8.	0301000594	Food Engineering Practice 2 (Lab)	1	
9.	0301000270	Food Engineering 3	2	
10.	0301000507	Statistical methods and experimental design in food technology	2	
11.	0301000592	Unit Operation in Food Processing – in Factory	2	

Number	Code	Subject	Credits	Note
12.	0301001560	Sensory Evaluation of Foods	2	
13.	0301002071	Practice sensory evaluation of food	1	
14.	0301000385	Case Study of Unit Operations in Food Processing	2	
15.	0301000411	Food additives	2	
16.	0301000415	Scientific research methods in Food technology	2	
17.	0301000006	Specialized English for food technology	2	
18.	0301002180	Introduction to scientific research in Food technology	2	
19.	0301000112	Human Nutrition	2	
20.	0301000388	Principle of water supply and wastewater treatment)	2	
Speciality				
21.	0301000636	Food Microbiology	3	
22.	0301000589	Laboratory of Food Microbiology	1	
23.	0301000178	Food Chemistry	2	
24.	0301001034	Laboratory of Food Chemistry	1	
25.	0301000366	Principles of Food preservation and processing	2	
26.	0301000430	Food quality management and Food Law	2	
27.	0301000071	Wine, beer and beverages technology	2	
28.	0301001561	Postharves technology of fruit and vegetables processing	2	
29.	0301000064	Technology of Canned Food Processing)	2	
30.	0301000384	Specialized Projects	2	
31.	0301000597	Laboratory manual in food technology	5	
32.	0301002080	Actual visit to the factories	2	
33.	0301000069	Fish and fisheries technology	2	
34.	0301000070	Food refrigeration technology	2	
35.	0301001562	Postharvest Technology of Cereals and cereal processing	2	
36.	0301000065	Milk and dairy product technology	2	
37.	0301000066	Technology of Meat and meat products	2	
38.	0301000063	Tea, coffee and cocoa processing technology	2	
39.	0301000068	Technology of sugar and biscuits processing	3	
40.	0301002325	Technology for producing sauces and spices	2	
41.	0301002326	Technology of Beverage	2	

Number	Code	Subject	Credits	Note
42.	0301002327	Practicing Technology of Beverage	1	
43.	0301002328	Management and utilization of co-products in food processing	2	
44.	0301000407	New food development	2	
2. Optional Knowledge				
		Optional of General Knowledge 2 credits		
45.	0301000549	Vietnamese in use	2	
46.	0301000321	Environment and Human	2	
47.	0301000643	Overview of Sociology	2	
48.	0301002324	Introduction to food technology	2	
		Optional of core 6 credits		
49.	0301000315	Food Processing Machinery	2	
50.	0301000005	Safety and pollution in food processing	2	
51.	0301000010	Food Packaging	2	
52.	0301001566	Food Plant Design	2	
53.	0301001565	Physical and Colloid Chemistry	4	
54.	0301000511	Functional foods	2	
55.	0301000126	Food toxicology	2	
		Optional of Speciality 2 credits		
56.	0301000067	Fat and oil technology	2	
57.	0301000074	Traditional Food Processing	2	
58.	0301002323	Applied informatics - food technology	2	

3. Graduation: 16 credits

Number	Code	Subject	Credits	Note
1. Graduation Internship				
1.	0301002072	Dissertation – Professional	6	
2. Graduation thesis				
2.	0301001563	Form 1: Graduation thesis	10	
3	0301001564	Form 2:	10	
		Graduation essay	6	
		Choose 02 alternative subjects	4	