MINISTRY OF EDUCATION AND TRAINING
UNIVERSITY OF TECHNOLOGY AND EDUCATION

UNDERGRADUATE DEGREE PROGRAM
(Applied since 2013)

TRAINING PROGRAM	**FOOD TECHNOLOGY**
PROGRAM	**FOOD TECHNOLOGY**
PROGRAM CODE	**52540101**
TRAINING DEGREE	**BACHELOR OF ENGINEERING**
TYPE OF TRAINING	**OFFICIAL**

Issued base on decision number: 3140/QĐ-ĐHSPKT
of Director of HCMUTE, date : 11/12/2015

Ho Chi Minh City, 2015

MINISTRY OF EDUCATION AND TRAINING HCMC UNIVERSITY OF TECHNOLOGY AND EDUCATION	Socialist Republic of Vietnam Independence - Freedom - Happiness

UNDERGRADUTE DEGREE PROGRAM

Name of program: FOOD TECHNOLOGY

Training degree Bachelor of Engineering

Training program: **FOOD TECHNOLOGY**

Type of training: OFFICIAL

(Issued base on decision number: 3140/QĐ-ĐHSPKT

of Director of HCMUTE, date : 11/12/2015)

I. Training time: 4 years

II. Candidates: High school graduates

III. Evaluate, Training process, graduate conditions

- **Grading scale:** 10
- **Training process:** Base on regulation issued by decision no.43/2007/GDĐT
- **Gradute conditions:**
- *General conditions***:** Base on regulation issued by decision no.43/2007/GDĐT
  Specialized conditions : None

IV. Program objectives and expected learning outcomes (ELO)

Goals:

Training Food Technology Engineers with high political and moral qualities, awareness about serving people, good health, basic knowledge, fundamental knowledge about science and professional education in food technology; the ability to identify, analyze, resolve problems, the capability of designing, building and managing systems related to food technology, communication and teamwork skills; appropriate professional attitudes to meet the requirements for developing the sector and society, as well as constructing and defending the country.

Graduates are able to work at agencies, organizations and training institutions related to food industry.

Training Objectives:

Graduates from the Food Technology program will

1. Possess technical knowledge and reasoning ability: to apply them to production practice, research and intensive learning to meet the requirements in profession and personal development.

2. Obtain personal and technical skills and qualities in approaching, analyzing, synthesizing problems and proposing solutions in practice.

3. Express communication and teamwork skills: to communicate, negotiate, persuade; to establish, organize and lead their team to achieve the set goals.

4. Be able to conceive ideas, design, implement and operate in business and social context: to realize a comprehensive development of a food technology engineer.

Program outcomes:

1. Technical knowledge and reasoning.

1.1. Possess fundamental knowledge in mathematics, natural sciences and social sciences to be able to acquire professional and higher academic education.

1.2. Obtain a firm background in food technology that is essential to the operation, control and management of technological processes in practical production.

1.3. Acquire advanced technical background in food technology to meet the requirements of technological research, technological innovation and new product development.

2. Personal and technical skills and qualities

2.1. Identify and analyze problems, offer suggestions and solutions to them.

2.2. Possess empirical skills and evaluate experimental results.

2.3. Possess skills of systematically approaching and thinking.

2.4. Possess skills of recognizing, analyzing and synthesizing to solve problems; be able to think creatively.

2.5. Acquire professional ethics, self-study and self-direct in the profession; express professional attitudes.

3. Communication and teamwork skills

3.1. Be able to work in a team, set up, manage and lead a team.

3.2. Be able to communicate by verbal, written, electronic or multimedia means, present orally, discuss and negotiate.

3.3. Be able to communicate in English.

4. Conceiving, designing, implementing and operating in business and social context

4.1. Be aware of their role and responsibility in the social context.

4.2. Understand the culture of organizations and companies; Be able to integrate in the working environment of organizations and companies.

4.3. Generate ideas, model systems, implement and manage projects in food technology.

4.4. Design operating systems of food technology corresponding to the generated ideas.

4.5. Deploy and manage the setting up of systems in food technology.

4.6. Operate systems in the field of food technology.

V. Total number of credits: 150 credits

(not including credits of physical education and national security education)

VI. Program structure

Name	Credits		
	Total	**Required**	**Elective**
General education	**56**	**50**	**6**
Politics	10	10	
Social Sciences	8	2	6
Foreign Languages	9	9	
Science and Maths	23	23	
Introduction to Environmental Engineering Technology	3	3	
Informatics	3	3	
Professional Education	**94**	**88**	**6**
Fundamental courses	28	28	
Specialized courses	36	30	6
Practice	20	20	
Graduation Thesis	10	10	

Name	Credits		
	Total	**Required**	**Elective**
General education	**56**	**50**	**6**
Politics	10	10	
Social Sciences	8	2	6
Foreign Language	9	9	
Maths and Science	23	23	0
Information technology	3	3	
Introduction to Food Technology	3	3	
Professional Education	**94**	**90**	**4**
Fundamental courses	42		
Specialized courses	22	18	4
Practice	20	20	
Graduation practice	10	10	
Graduation thesis	**56**	**50**	**6**

VII. Program content *(name and credits of Required courses)*

1.1. Required courses

1.1.1. General education (56 credits)

№	Course code	Course name	Credits	Notes
I		**Social sciences**	**12**	

1	LLCT150105	Fundamental principles of Marxism-Leninism	5	
2	LLCT230214	Revolution lines of Communist Party of Vietnam	3	
3	LLCT120314	Ho Chi Minh Ideology	2	
4	GELA220405	General laws	2	
II		**Foreign language**	**9**	
5	ENGL130137	English 1	3	
6	ENGL230237	English 2	3	
7	ENGL330337	English 3	3	
III		**Introduction to the major**	**3**	
8	INFT130850	Introduction to Food Technology	3	(2+1)
IV		**Introductory Information Technology**	**3**	
9	ADPR131185	Management Programming (MS Access)	3	
V		**Maths and Sciences**	**23**	
10	MATH130101	Advanced Mathematics 1	3	
11	MATH130201	Advanced Mathematics 2	3	
12	MATH130301	Advanced Mathematics 3	3	
13	MATH130401	Applied Statistics and Probability	3	
14	PHYS120102	General Physics A1	3	
15	PHYS120202	General Physics A2	2	
	PHYS110302	General Physics Laboratory Experiments	1	
16	GCHE130103	General Chemistry A1	3	
17	PLEX321750	Experimental planning and optimization	2	
VI		**Physical education**	**5**	
18	PHED110513	Physical education 1	1	
19	PHED110613	Physical education 2	1	
20	PHED130715	Physical education 3	3	*chosen by students*
VII		**National security education**		
21		**National security education**	165 periods	

1.1.2. Professional Education (94 credits)

1.1.2.1. Fundamental courses

№	Course code	Course name	Credits	Notes
22	EDDG230120	Technical Drawing B	3	
23	OCHE220203	Organic chemistry	2	
	EOCH210403	Organic chemistry Laboratory Experiments	1	
24	ACHE220303	Analytical chemistry	2	
	EACH210503	Analytical chemistry Laboratory Experiments	1	
25	PCHE222550	Physical chemistry	2	
26	NUSA332650	Nutrition and Food Safety	3	
27	FCHE232750	Food Chemistry	3	
28	FBCH322850	Food Biochemistry	2	
	PFBC312850	Food Biochemistry Laboratory	1	

		Experiments		
29	FMIC222950	Food Microbiology	2	
	PFMI222950	Food Microbiology Laboratory Experiments	2	
30	ELEE220144	Electrical Engineering	2	
31	THER222932	Thermal Engineering	2	
32	FEGF333250	Food Engineering 1	3	
33	FEGS333350	Food Engineering 2	3	
34	FEGT323450	Food Engineering 3	2	
35	FANA323550	Food Analysis	2	
	PFAN313550	Food Analysis laboratory Experiments	1	
36	FQMA323650	Food Quality Management	2	
37	FADE323750	Design of Food Technology and Factory	2	
38	FBIT323850	Food Biotechnology	2	
39	FENG223950	Technical English in Food Technology	2	

1.1.2.2. Specialized courses (theoretical and experimental courses)

№	Course code	Course name	Credits	Notes
40	CERE324050	Food Processing Technology	2	
41	SBCT324150	Bakery and Confectionary Technology	2	
42	FADD324250	Food Additives	2	
43	FVBT324350	Beverage, Vegetable and Fruit Processing Technology	2	
44	DAIT324450	Milk and Milk Products Processing Technology	2	
45	TCCT324550	Tea, Coffee and Cocoa Processing	2	
46	MSET324650	Sea Food and Meat Processing Technology	2	
47	SERD324750	Product Research and Development	2	
48	SVSD324850	Sensory Evaluation of Food	2	(1 + 1)
49	DPEM424950	Project in Processes and Equipment in Food Technology	2	

1.1.2.3. Specialized courses (Laboratory Experiments, Workshop Practice and Factory Practice)

№	Course code	Course name	Credits	Notes
50	SBCP415050	*Practice in Food Processing Technology*	1	
51	TCCP415150	*Practice in Tea-Coffee-Cocoa Processing Technology*	1	
52	PFER415250	*Practice in Fermentation Technology*	1	
53	PSBC425350	*Practice in Confection Processing Technology*	2	
54	DFBP425450	*Practice in Vegetables and Softdrinks Processing Technology*	2	
55	MITP415550	*Practice in Milk-related Products Processing Technology*	1	
56	MSEP425650	*Practice in Meat and Seafood Processing Technology*	2	

57	PPEF415750	*Practice in Processes and Equipment in Food Technology*	1	
58	FACP425850	*Factory Practice*	2	

1.1.2.4. Graduation thesis (or graduation exam)

№	Course code	Course name	Credits	Notes
59	FIPR405950	**a- Graduation thesis**	**10**	
		b- Graduation courses	**10**	
60	SSUF426050	Major 1 (Food Biochemistry)	2	
61	SSUS426150	Major 2 (Food Microbiology)	2	
62	SSUT436250	Major 3 (Food Processing Technology)	3	
63	SSUT436350	Major 4 (Processes and Equipment in Food Technology)	3	

1.2. Elective courses

1.2.1. General education knowledge (Social sciences)

№	Course code	Course name	Credits	Notes
		A. Elective courses in Social sciences (chosen by student when registering courses)	**(6)**	
64	GEEC220105	General economics	2	
65	TDTS320605	Presentation of Scientific Texts and Documents	2	
66	PLSK320805	Plan-building skills	2	
67	INSO321005	Introduction to Sociology	2	

1.2.2. Professional education (theoretical courses)

№	Course code	Course name	Credits	Notes
		B. Elective courses (Student must choose 2 from these courses)	**4**	
68	OILT326850	Oil Processing Technology	2	
69	FPRO326950	Basic Processes in Food Technology	2	
70	DRYT327050	Food Drying Technology	2	
71	FPPT327150	Low-Temperature Food Preservation Technology	2	
72	FPAT327250	Food Packaging Technology	2	
73	EBIE327350	Enzyme and Protein Technology	2	
74	FUNF327450	Functional Food	2	
75	DFPT327550	Cooking Techniques	2	(1 + 1)
76	FTOX327650	Food Toxicology	2	
77	FPMA327750	Food Processing Machinery	2	
78	ADEN327850	Modern Methods in Food Technology	2	
79	ECHE327950	Environmental Chemistry	2	
80	TPCF328050	Canned Food Processing Technology	2	
81	FLAW328150	Food Law	2	
82	FERT328250	Fermentation Technology	2	

II. Expected Teaching Schedule (for 8 main semesters only)

№	Course code	Course name	Credits	Required Prequisites
	Semester 1:			
Required courses				
1.	ADPR131185	Management Programming (MS Access)	3	
2.	ENGL130137	English 1	3	
3.	GCHE130103	General Chemistry A1	3	
4.	INFT130850	Introduction to Food Technology	3	
5.	LLCT150105	Fundamental principles of Marxism-Leninism	5	
6.	MATH130101	Advanced Mathematics 1	3	
7.	PHED110513	*Physical education 1*	*1*	
		Total	**21**	
	Semester 2:			
Required courses				
8.	ACHE220303	Analytical chemistry	2	
9.	ENGL230237	English 2	3	
10.	LLCT230214	Revolution lines of Communist Party of Vietnam	3	
11.	MATH130201	Advanced Mathematics 2	3	
12.	OCHE220203	Organic chemistry	2	
13.	EACH210503	Analytical chemistry Laboratory Experiments	1	
14.	PHED110613	*Physical education 2*	1	
15.	PHYS120102	General Physics A1	3	
16.	EOCH210403	Organic chemistry Laboratory Experiments	1	
Elective courses (Select one from the social science courses below)			2	
17.	GEEC220105	General Economics	2	
18.	INSO321005	Introduction to Sociology	2	
		Total	**21**	
	Semester 3:			
Required courses				
19.	FCHE232750	Food Chemistry	3	GCHE130103
20.	ENGL330337	English	3	
21.	FEGF333250	Food Engineering 1	3	
22.	THER222932	Thermal Engineering	2	
23.	LLCT120314	Ho Chi Minh Ideology	2	
24.	MATH130301	Advanced Mathematics 3	3	
25.	PHED130715	Physical education 3	3	
26.	PHYS110302	General Physics Laboratory Experiments	1	
27.	PHYS120202	General Physics A2	2	
Elective courses (select one from the social science courses below)			**2**	
28.	INSO321005	Introduction to Sociology	2	
29.	PLSK320605	Plan-Building Skills	2	
		Total	**24**	
	Semester 4:			
Required courses				
30.	CERE324050	Food Processing Technology	2	
31.	ELEE220144	Electrical Engineering	2	

32.	EDDG230120	Technical Drawing B	3	
33.	FEGS333350	Food Engineering 2	3	
34.	FMIC222950	Food Microbiology	2	
35.	MATH130401	Applied Statistics and Probability	3	
36.	PFMI222950	Food Microbiology Laboratory Experiments	2	
37.	SBCT324150	Bakery and Confectionary Technology	2	
Elective courses (select one from the social science courses below)			**2**	
38.	INSO321005	Introduction to Sociology	2	
39.	TDTS320805	Presentation of Scientific Texts and Documents	2	
		Total	**21**	
	Semester 5:			
Required courses				
40.	DAIT324450	Milk and Milk Products Processing Technology	2	
41.	FANA323550	Food Analysis	2	GCHE130103
42.	FBCH322850	Food Biochemistry	2	
43.	FEGT323450	Food Engineering 3	2	
44.	FVBT324350	Beverage, Vegetable and Fruit Processing Technology	2	
45.	GELA220405	General laws	2	
46.	PCHE222550	Physical chemistry	2	GCHE130103
47.	PFAN313550	Food Analysis laboratory Experiments	1	GCHE130103
48.	PFBC312850	Food Biochemistry Laboratory Experiments	1	GCHE130103
49.	PSBC425350	*Practice in Confection Processing Technology*	2	
50.	SBCP415050	*Practice in Food Processing Technology*	1	
		Total	**19**	
	Semester 6:			
Required courses				
51.	FENG223950	Technical English in Food Technology	2	ENGL330337
52.	FADE323750	Design of Food Technology and Factory	2	EDDG230120
53.	FADD324250	Food Additives	2	
54.	FBIT323850	Food Biotechnology	2	
55.	MITP415550	*Practice in Milk-related Products Processing Technology*	1	
56.	NUSA332650	Nutrition and Food Safety	3	FCHE232750, FMIC222950
57.	DFBP425450	*Practice in Vegetables and Softdrinks Processing Technology*	2	
58.	PPEF415750	*Practice in Processes and Equipment in Food Technology*	1	
59.	MSET324650	Sea Food and Meat Processing Technology	2	
60.	TCCT324550	Tea, Coffee and Cocoa Processing	2	
		Total	**19**	
	Semester 7			
Required courses				
61.	DPEM424950	Project in Processes and Equipment in Food Technology	2	
62.	FACP425850	*Factory Practice*	2	(Summer after semester 6)
63.	PFER415250	*Practice in Fermentation Technology*	1	FMIC222950

64.	FQMA323650	Food Quality Management	2	
65.	MSEP425650	*Practice in Meat and Seafood Processing Technology*	2	
66.	PLEX321750	Experimental planning and optimization	2	MATH130401
67.	SERD324750	Product Research and Development	2	
68.	SVSD324850	Sensory Evaluation of Food	2	MATH130401
69.	TCCP 415150	*Practice in Tea-Coffee-Cocoa Processing Technology*	1	
Elective courses (Choose 2 from the following courses)			4	
70.	ADEN327850	Modern Methods in Food Technology	2	
71.	DRYT327050	Food Drying Technology	2	FEGS333350
72.	ECHE327950	Environmental Chemistry	2	GCHE130103
73.	FLAW328150	Food Law	2	
74.	FPAT327250	Food Packaging Technology	2	
75.	FPMA327750	Food Processing Machinery	2	
76.	FPPT327150	Low-Temperature Food Preservation Technology	2	FEGS333350
77.	FPRO326950	Basic Processes in Food Technology	2	
78.	FERT328250	Fermentation Technology	2	FMIC222950
79.	FTOX327650	Food Toxicology	2	
80.	FUNF327450	Functional Food	2	
81.	OILT326850	Oil Processing Technology	2	
82.	EBIE327350	Enzyme and Protein Technology	2	FBCH322850
83.	DFPT327550	Cooking Techniques	2	
84.	TPCF328050	Canned Food Processing Technology	2	
		Total	**20**	
	Semester 8			
		Graduation thesis	**10**	
85.	FIPR405950	a- Graduation thesis	10	FEGF333250, FCHE232750, FMIC222950
86.	SSUF426050	Major 1 (Food Biochemistry)	2	
87.	SSUS426150	Major 2 (Food Microbiology)	2	
88.	SSUT436250	Major 3 (Food Processing Technology)	3	
89.	SSUT436350	Major 4 (Processes and Equipment in Food Technology)	3	
		Total	**10**	
First-year Summer Semester				
Required courses				
90.	GDQP008031	National Security Education	1	
91.	GDQP008031	National Security Education	1	
92.	GDQP008031	National Security Education	2	
		Total	4	