

## Food Technology

### Introduction

Food Technology Study Program Bina Nusantara University aimed at students who are interested to learn deeply on foods and their production processes, to fulfill United Nations' Sustainable Development Goals of (1) zero hunger, and (2) good health and well-being, by understanding the design and production of foods with health benefits. Food Technology Program concerns the application of biological, chemical, and engineering sciences to further understanding and to improve the quality, safety, nutritional, and economic value of food and beverages in industrial scale.

The Study Program is designed not only to meet the market needs but also to produce creative, innovative and productive graduates who are capable of food product innovation, with strong emphasis on engineering sciences, and providing graduates with *entrepreneurship* in food technology to meet global challenges on food security.

The Study Program links to national and multinational food industries and universities all over the world are strong, and there will be one year enrichment program, with five tracks namely, Study Abroad, Internship, Entrepreneurship, Research, and Community Development to enrich the theory obtained in campus.

Facilities in the Study Program include well-equipped laboratories, namely Food Biotechnology, Food Processing, Science (Chemistry/Biochemistry), Sensory, Physics, and Computer Laboratories.

### Vision

A world-class Food Technology Program with IT-support for advanced food enterprise development.

### Mission

The mission of Food Technology Study Program are to:

1. Providing a solid educational experience through the diffusion and integration of knowledge of Food Technology, and services to food industries;
2. Educating students from a diverse background in the fundamental skills, knowledge and practice of Food Technology in order to prepare them for a position in global industries and continue for advanced degrees in Food Technology or related disciplines;
3. Providing research and professional services to streamline and optimize operations which contribute to the enhancement of the quality of life;
4. Acknowledging all talents that positively contribute to the quality of life of Indonesians and the international community.

### Program Objectives

The objectives of the program are:

1. To prepare students with a solid foundation of knowledge and understanding of Food Technology theory that will be beneficial to contribute in International Food Industry;
2. To provide students with the methodological, and computational skills to operate effectively and efficiency through direct involvement in problem solving required in research at Food Technology;
3. To provide students with information, communication and negotiation skills, and understanding of contemporary issues into practice in marketing of Food product..

## **Student Outcomes**

After completing the study, graduates are:

1. Able to apply knowledge in core area of food science and technology;
2. Able to design methods in producing safe and high-quality food product;
3. Able to demonstrate proficiency in oral and written communication;
4. Able to demonstrate professionalism and leadership skills;
5. Able to propose the solution for the problems related to food and create innovated food products;
6. Able to apply functional food and food packaging knowledges to enhance the values in innovated food products;
7. Able to apply interdisciplinary knowledge and skills in developing alternative solutions for problem-solving.

## **Prospective Career of The Graduates**

1. Food Industry: formulator, production, analyst, quality control, quality assurance, R&D in various national and multinational food industries.
2. Food processing system designer/manager.
3. Food safety management system designer/manager.
4. Food product innovator.
5. Researcher in food processing or food technology to support the Government or industry.
6. Food marketer
7. Regulatory affairs specialist
8. Analyst in food policy, and research to develop food industry, nutrition, and food quality standards
9. Consultant in food industry, product formulation, food safety, sanitation.
10. Food Entrepreneur.
11. Business Development and Brand marketing in food industries
12. IT system/Software designer in supporting food processing.

## **Curriculum**

Food Technology Study Program is a solid foundation of knowledge and understanding to contribute in multinational food industries. Students will be equipped with methodological and computational skills as well as practical laboratory skills such as, operating equipment effectively and efficiently through direct involvement in problem solving essentially required in research and food industries.

The curriculum of Food Technology Study Program is specially structured to solve contemporary issues and to produce the innovation in Food Technology with IT support.

### Course Structure

Sem	Code	Course Name	SCU	Total	
1	CHAR6013	Character Building: <i>Pancasila</i>	2	20	
	FOOD6015	Introduction to Food Technology*	2		
	FOOD6048	General Physics	2/1		
	SCIE6024	Biology	2/1		
	SCIE6053	Chemistry*	4/2		
	LANG6027	Indonesian	2		
	<b>English University Courses I</b>				
	ENGL6128	English in Focus	2		
	ENGL6130	English for Business Presentation	2		
2	CHAR6014	Character Building: <i>Kewarganegaraan</i>	2	20	
	SCIE6021	Organic Chemistry	2/1		
	MATH6157	Calculus	2/1		
	FOOD6049	Basic Food Biochemistry*&**	2/1		
	SCIE6026	Basic Microbiology*&**	2/1		
	FOOD6050	Written Scientific Communication*	2		
	ENTR6509	Entrepreneurship: Ideation	2		
	<b>English University Courses II</b>				
	ENGL6129	English Savvy	2		
ENGL6131	English for Written Business Communication	2			
3	CHAR6015	Character Building: <i>Agama</i>	2	20	
	STAT6167	Data & Statistical Analysis	2/2		
	FOOD6082	Food Chemistry*&**	2/1		
	FOOD6051	Human Nutrition*	2/1		
	FOOD6054	Food Processing Technology I**&***	4/2		
	FOOD6052	Food Law and Regulation**	2		
4	FOOD6075	Critical Thinking in Food Technology*	2	20	
	FOOD6057	Food Innovation & Product Development***	2		
	FOOD6056	Food Engineering*&**	2/2		
	FOOD6077	Food Microbiology*&**	2/1		
	FOOD6004	Sensory Evaluation	2/1		
	<b>Streaming: Innovative Food Processing</b>				
	FOOD6074	Food Processing Technology II	2		
	FOOD6059	Food Packaging, Labeling and Shelf-life*&**	2		
	FOOD6073	Current Issues in Food Technology**	2		
	<b>Free Electives</b>				6
5	FOOD6064	Oral Communication in Food Technology	2	20	
	ENTR6511	Entrepreneurship: Market Validation	2		
	FOOD6062	Food Quality Assurance System**	2/1		
	FOOD6063	Food Safety & Sanitation*	2/1		
	FOOD6003	Food Analysis**	2/2		

Sem	Code	Course Name	SCU	Total
<b>Streaming: Innovative Food Processing</b>				
	FOOD6076	Food Fermentation Technology*	2	
	CPEN6235	IoT in Food Industry	2	
	FOOD6065	Functional Foods & Nutraceuticals*	2	
	<b>Free Electives</b>		6	
6	<b>Enrichment Program I</b>		20	20
7	<b>Enrichment Program II</b>		20	20
8	FOOD6078	Pre-Thesis	2	6
	FOOD6079	Thesis	4	
<b>TOTAL CREDITS 146 SCU</b>				

\*) This course is delivered in English

\*\*) Global Learning System Course

\*\*\*) Entrepreneurship Embedded

#### Streaming/Free Electives:

-) For 4th and 5th Semester: Students are required to choose streaming or free electives.

#### English University Courses:

-) For 1st Semester: English University Courses I, students with Binus University English Proficiency Test score less than 500 will take English in Focus, and student with test score greater than or equal to 500 will take English for Business Presentation.

-) For 2nd Semester: English University Courses II, students with Binus University English Proficiency Test score less than 500 will take English Savvy, and students with test score greater than or equal to 500 will take English for Written Business Communication.

-) Students must pass English Savvy with a minimum Grade of C.

#### Appendix: Free Electives (4<sup>th</sup> Semester & 5<sup>th</sup> Semester)

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Business Creation	ENTR6580	Digital Business Transformation	2	4
2	Business Creation	ENTR6582	Business Strategy	2	4
3	Business Creation	ENTR6494	Managing Growing Business	2	5
4	Business Management	MGMT6399	Fundamentals of Supply Chain Management	2	4
5	Business Management	MGMT6401	Digital Supply Chain Management	2	4
6	Business Management	MKTG6298	Service Marketing Management	2	4
7	Business Management	MGMT6362	Global Supply Chain Services	2	5
8	Business Management	MGMT6365	Current Issue in Service Business and Technology	2	5
9	Business Management	MGMT6400	Supply Chain Strategy	2	5
10	Global Business Management	MKTG6237	Global Strategic Marketing: Asia Pacific Perspective	4	4
11	Global Business Management	MKTG6237	Global Strategic Marketing: Asia Pacific Perspective	4	5
12	International Business Management	BUSS6162	Market Entry Strategy	2	4
13	International Business Management	BUSS6191	Export-Import Management	2	4
14	International Business Management	MGMT6369	Corporate Strategy in International Business	2	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
15	International Business Management	BUSS7009	Export-Import Cost Management	2	5
16	International Business Management	MGMT6370	E-Business for International Business	2	5
17	International Business Management	MGMT7169	Global Supply Chain Management	2	5
18	Management	BUSS6088	Current Issue in Business and Technology	2	4
19	Management	BUSS6109	Business Development	4	4
20	Management	BUSS6171	Business Sustainability	4	4
21	Management	BUSS6173	Managing Innovation and Knowledge	4	4
22	Management	ISYS6079	E-Business System	4	4
23	Management	MGMT6196	Project Management	4	4
24	Management	MGMT6276	Leadership & Managing Human Capital in Organization	4	4
25	Management	MGMT6371	Human Resources Analytics	4	4
26	Management	MGMT6374	Analysis on E-Business Investment	4	4
27	Management	MGMT6375	Organizational Learning	4	4
28	Management	BUSS6069	Business Simulation	2	5
29	Management	BUSS6163	Organization Development Strategy	2	5
30	Management	BUSS6194	Business Negotiation Strategy	2	5
31	Management	ISYS8175	E-Business Strategy and Implementation	4	5
32	Management	MGMT6029	Knowledge Management	2	5
33	Management	MGMT6063	Strategic Management	2	5
34	Management	MGMT6145	Compensation and Performance Management	2	5
35	Management	MGMT6297	Operations Management	4	5
36	Management	MGMT6341	Strategic Management	4	5
37	Management	MGMT6412	Customer Relationship Management	2	5
38	Accounting Bekasi	ACCT6382	Business Process Analysis and Solution	2	4
39	Marketing Communication	COMM6435	Global Consumer Behavior	2	4
40	Marketing Communication	COMM6510	Reportage & Interview Technique	2/2	4
41	Marketing Communication	COMM6540	Communication & Public Affairs	2	4
42	Marketing Communication	COMM6538	Media Promotion & Marketing in Creative Broadcasting	2	5
43	Marketing Communication	COMM6541	Digital Corporate Communication	2/2	5
44	Marketing Communication	COMM6542	Event Management for Brand	2/2	5
45	Marketing Communication	COMM6543	Digital Brand Communicaton	2/2	5
46	Tourism	TRSM6208	Tourism Innovation and Product Development	4	5
47	Tourism	TRSM6196	Tourism Community Empowerment	2	5
48	Computer Engineering	CPEN6098	Computer Networks	2/2	5
49	Computer Engineering	CPEN6126	Cross Platform Application Development	4	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
50	Computer Engineering	CPEN6225	Telco Network & Switching System	2	5
51	Computer Engineering	CPEN6232	Cloud Technology Practice	2	5
52	Food Technology	FOOD6073	Current Issues in Food Technology	2	4
53	Industrial Engineering	ISYE6041	Engineering Economy	2	4
54	Industrial Engineering	ISYE6113	Leadership & Organizational Behavior	2	4
55	Industrial Engineering	ISYE6181	System Engineering & Analysis	2	4
56	Industrial Engineering	ISYE6067	Global Supply Chain	2	5
57	Industrial Engineering	ISYE6115	Transportation Modeling	2	5
58	Industrial Engineering	ISYE6130	Project Management	2	5
59	Business Law	LAWS6017	Intellectual Property Rights	4	4
60	Business Law	LAWS6110	Cyber Law	2	4
61	Business Law	LAWS6159	Legal Aspect in Business	2	4
62	Business Law	LAWS6171	Business Competition & Consumer Protection Law	2	4
63	Business Law	LAWS6172	Environmental and Natural Resources Law	2	5
64	Business Law	LAWS6176	Tax Law	2	5
65	Chinese Literature	CHIN6157	Chinese Business for Etiquette (Beginner)	4	4
66	Chinese Literature	CHIN6158	Chinese Business in Daily Communication	4	4
67	Chinese Literature	CHIN6159	Chinese Character Writing	2	4
68	Chinese Literature	CHIN6157	Chinese Business for Etiquette (Beginner)	4	5
69	Chinese Literature	CHIN6158	Chinese Business in Daily Communication	4	5
70	English Literature	ENGL6169	English for Professionals	2	4
71	English Literature	SOCS6021	Social and Digital Media Writing	2	4
72	English Literature	ENGL6158	Writing for Children and Young Adults	2	5
73	English Literature	ENGL6244	Social Media Broadcasting	4	5
74	International Relations	INTR6143	ASEAN Community: Security, Economic, and Socio Cultural Aspects	4	4
75	International Relations	INTR6162	Multiculturalism and Digital Society	2	5
76	Psychology	PSYC6130	Human Performance Technology	4	4
77	Mobile Application & Technology	MOBI6059	Mobile Programming	2	5
78	Statistics	RSCH6483	Research Methodology in Data Science	2	5
79	Computer Science	ISYS6211	Web Based Application Development	2/2	4
80	Computer Science	ISYS6197	Business Application Development	2/2	5
81	Creative Advertising	DSGN6671	Creative Writing for Commercials	4	4
82	Creative Advertising	MDIA6046	Audio Visual (Pre Production and Production)	4	4
83	Creative Advertising	DSGN6661	Photography	4	4
84	Creative Advertising	DSGN6661	Photography	4	5
85	New Media	DSGN6743	Digital Graphic Reproduction	4	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
86	Business Information Technology	ISYS6574	Information Retrieval	4	4
87	Business Information Technology	ISYS6577	Machine Learning & Foundations	2	4
88	Business Information Technology	ISYS6606	Smart Application	2	4
89	Business Information Technology	ISYS6579	Knowledge-Based AI: Cognitive Systems	4	5
90	Information Systems	BUSS6043	Introduction to E-Business	4	4
91	Information Systems	ISYS6016	Social Media Fundamental	2	4
92	Information Systems	ISYS6084	Database	2/2	4
93	Information Systems	ISYS6169	Database Systems	4/2	4
94	Information Systems	ISYS6203	Mobile Application Development	2/2	4
95	Information Systems	ISYS6210	Data Visualization	2	4
96	Information Systems	ISYS6280	Database Systems	4/2	4
97	Information Systems	ISYS6285	Digital and New Media	2	4
98	Information Systems	ISYS8066	Business Process Management	4	5

**Enrichment Program I (6<sup>th</sup> Semester) & Enrichment Program II (7<sup>th</sup> Semester):**

-) Student will take one of enrichment program tracks (off campus). See enrichment appendix for the tracks detail.

**Enrichment Track Scheme**

Track	Semester 6						Semester 7					
	IN	RS	EN	CD	SA	etc	IN	RS	EN	CD	SA	etc
1	v						v					
2		v					v					
3			v				v					
4				v			v					
5					v		v					
6	v							v				
7	v								v			
8	v										v	

**Note:**

IN	: Internship	CD	: Community Development
RS	: Research	SA	: Study Abroad
EN	: Entrepreneurship	etc	: Study Program Special Purposes

**Description:**

Student will take one of enrichment program tracks

### Enrichment Internship Track

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			
FOOD6080	Unit Operations in Food Industry	8	20
FOOD6067	Self-Management & Work Ethics	4	
FOOD6031	Industrial Experience	8	
<b>Enrichment Program II</b>			
FOOD6068	Professionalism & Leadership	4	20
FOOD6081	Integrated Food Processing	8	
FOOD6070	Project Management & Organization	8	

### Enrichment Entrepreneurship Track

Code	Course Name	SCU	Total
<b>Enrichment Program I:</b> <i>(For students who only take Entrepreneurship track in semester 6, should take these courses:)</i>			
ENTR6591	New Food Venture Initiation	8	20
ENTR6592	Food Product Development Process	8	
ENTR6593	EES in Food Business	4	
<b>Enrichment Program II:</b> <i>(For students who only take Entrepreneurship track in semester 7, should take these courses:)</i>			
ENTR6594	Food Product Launching	8	20
ENTR6595	Food Business Development	8	
ENTR6576	Professionalism & Leadership	4	

### Enrichment Research Track

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			
RSCH6227	Research Experience	8	20
RSCH6508	Experimental Design	8	
RSCH6182	Global EES in Food Technology	4	
<b>Enrichment Program II</b>			
RSCH6490	Professionalism & Leadership	4	20
RSCH6509	Academic Writing	8	
RSCH6492	Research Methodology	8	

### Enrichment Community Development Track

Code	Course Name	SCU	Total
<b>Enrichment Program I</b>			
CMDV6128	Community Outreach Project Implementation	8	20
CMDV6288	Community Outreach Project for Food Processing	8	
CMDV6098	Employability and Entrepreneurial Skills in Food Technology	4	

### Enrichment Study Abroad Track

Code	Course Name	SCU	Total
<b>Elective courses list for study abroad*</b>			
<b>Enrichment Program I/II</b>			
GLOB6005	Elective Course for Study Abroad 1	4	20
GLOB6006	Elective Course for Study Abroad 2	4	
GLOB6007	Elective Course for Study Abroad 3	4	
GLOB6008	Elective Course for Study Abroad 4	4	
GLOB6009	Elective Course for Study Abroad 5	2	
GLOB6010	Elective Course for Study Abroad 6	2	
GLOB6011	Elective Course for Study Abroad 7	2	
GLOB6012	Elective Course for Study Abroad 8	2	
GLOB6013	Elective Course for Study Abroad 9	2	
GLOB6014	Elective Course for Study Abroad 10	2	
GLOB6015	Elective Course for Study Abroad 11	2	
GLOB6016	Elective Course for Study Abroad 12	2	
GLOB6249	Elective Course for Study Abroad 27	3	
GLOB6250	Elective Course for Study Abroad 28	3	
GLOB6251	Elective Course for Study Abroad 29	4	

\*) Transferred courses will be transferred based on credit transfer policies on study program with total of 20 credits.

### The Table of Prerequisite for Food Technology (S1)

Course	SCU	Sem.	Prerequisite Course	SCU	Sem.
FOOD6077	2/1	4	SCIE6026	2/1	2
FOOD6003	2/2	5	FOOD6082	2/1	3

### Student should pass all of these quality controlled courses as listed below:

No.	Course Code	Course Name	Minimal Grade
1.	CHAR6013	Character Building: <i>Pancasila</i>	B
2.	ENTR6511	Entrepreneurship: Market Validation	C
3.	FOOD6082	Food Chemistry	C
4.	FOOD6056	Food Engineering*	C
5.	FOOD6057	Food Innovation & Product Development*	C
6.	FOOD6003	Food Analysis*	C
7.	FOOD6065	Functional Food & Nutraceuticals	C
8.	FOOD6059	Food Packaging, Labeling and Shelf-life	C

\*) Tutorial & Multipaper