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	CHAR6013015	Character Building: *Pancasila*	2	20
	FOOD6015015	Introduction to Food Technology*	2	
	FOOD6048015	General Physics	2/1	
	SCIE6024015	Biology	2/1	
	SCIE6053015	Chemistry*	4/2	
	LANG6027015	Indonesian	2	
	English University Courses I			
	ENGL6128015	English in Focus	2	
	ENGL6130015	English for Business Presentation	2	
2	CHAR6014015	Character Building: *Kewarganegaraan*	2	20
	SCIE6021015	Organic Chemistry	2/1	
	MATH6157015	Calculus	2/1	
	FOOD6049015	Basic Food Biochemistry*&***	2/1	
	SCIE6026015	Basic Microbiology*&***	2/1	
	FOOD6050015	Written Scientific Communication*	2	
	ENTR6509001	Entrepreneurship: Ideation	2	
	English University Courses II			
	ENGL6129015	English Savvy	2	
	ENGL6131015	English for Written Business Communication	2	
3	CHAR6015015	Character Building: *Agama*	2	20
	STAT6167015	Data & Statistical Analysis	2/2	
	FOOD6082015	Food Chemistry*&***	2/1	
	FOOD6051015	Human Nutrition*	2/1	
	FOOD6054015	Food Processing Technology I**&****	4/2	
	FOOD6052015	Food Law and Regulation**	2	
4	FOOD6075015	Critical Thinking in Food Technology*	2	20
	FOOD6057015	Food Innovation & Product Development***	2	
	FOOD6056015	Food Engineering*&***	2/2	
	FOOD6077015	Food Microbiology*&***	2/1	
	FOOD6004015	Sensory Evaluation	2/1	
	Streaming: Innovative Food Processing			
	FOOD6074015	Food Processing Technology II	2	
	FOOD6059015	Food Packaging, Labeling and Shelf-life*&***	2	
	FOOD6073015	Current Issues in Food Technology**	2	
	Free Electives		6	
5	FOOD6064015	Oral Communication in Food Technology	2	20
	ENTR6511001	Entrepreneurship: Market Validation	2	
	FOOD6062015	Food Quality Assurance System**	2/1	
	FOOD6063015	Food Safety & Sanitation*	2/1	
	FOOD6003015	Food Analysis**	2/2	

Sem	Code	Course Name	SCU	Total
	Streaming: Innovative Food Processing			
	FOOD6076015	Food Fermentation Technology*	2	
	CPEN6235015	IoT in Food Industry	2	
	FOOD6065015	Functional Foods & Nutraceuticals*	2	
	Free Electives		6	
6	**Enrichment Program I**		20	20
7	**Enrichment Program II**		20	20
8	FOOD6078015	Pre-Thesis	2	6
	FOOD6079015	Thesis	4	
	FOOD6071015	Thesis	6	
			Total Credits 146 SCU	

*) This course is delivered in English

**) Global Learning System Course

***) Entrepreneurship Embedded

Streaming/Free Electives:

-) For 4th Semester: Students are required to choose Streaming or Free Electives. For Free Electives, students are required to choose from the list of Free Electives in Appendix.

-) For 5th Semester: Students are required to choose Streaming or Free Electives same with previous semester. For Free Electives, students are required to choose from the list of Free Electives in Appendix

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.

Pre-thesis (2 SCU) & Thesis (4 SCU) can be taken in the 6th and/or 7th semester by the students who meet the requirements from the Study Program/Program

Enrichment Program I (6th Semester) & Enrichment Program II (7th Semester):

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

Appendix: Free Electives (4th Semester & 5th Semester)

No	Course Owner Department	Course Code	Course Name	SCU	Semester
1	Business Creation	ENTR6580005	Digital Business Transformation	2	4
2	Business Creation	ENTR6582005	Business Strategy	2	4
3	Business Creation	ENTR6494005	Managing Growing Business	2	5
4	Business Management	MGMT6399005	Fundamentals of Supply Chain Management	2	4
5	Business Management	MGMT6401005	Digital Supply Chain Management	2	4
6	Business Management	MKTG6298005	Service Marketing Management	2	4
7	Business Management	MGMT6362005	Global Supply Chain Services	2	5
8	Business Management	MGMT6365005	Current Issue in Service Business and Technology	2	5
9	Business Management	MGMT6400005	Supply Chain Strategy	2	5

No	Course Owner Department	Course Code	Course Name	SCU	Semester
10	Global Business Marketing	MKTG6237005	Global Strategic Marketing: Asia Pacific Perspective	4	4
11	Global Business Marketing	MKTG6237005	Global Strategic Marketing: Asia Pacific Perspective	4	5
12	International Business Management	BUSS6162005	Market Entry Strategy	2	4
13	International Business Management	BUSS6191005	Export-Import Management	2	4
14	International Business Management	MGMT6369005	Corporate Strategy in International Business	2	4
15	International Business Management	BUSS7009005	Export-Import Cost Management	2	5
16	International Business Management	MGMT6370005	E-Business for International Business	2	5
17	International Business Management	MGMT7169005	Global Supply Chain Management	2	5
18	Management	BUSS6088005	Current Issue in Business and Technology	2	4
19	Management	BUSS6109005	Business Development	4	4
20	Management	BUSS6171005	Business Sustainability	4	4
21	Management	BUSS6173005	Managing Innovation and Knowledge	4	4
22	Management	ISYS6079005	E-Business System	4	4
23	Management	MGMT6196005	Project Management	4	4
24	Management	MGMT6276005	Leadership & Managing Human Capital in Organization	4	4
25	Management	MGMT6371005	Human Resources Analytics	4	4
26	Management	MGMT6374005	Analysis on E-Business Investment	4	4
27	Management	MGMT6375005	Organizational Learning	4	4
28	Management	BUSS6069005	Business Simulation	2	5
29	Management	BUSS6163005	Organization Development Strategy	2	5
30	Management	BUSS6194005	Business Negotiation Strategy	2	5
31	Management	ISYS8175005	E-Business Strategy and Implementation	4	5
32	Management	MGMT6029005	Knowledge Management	2	5
33	Management	MGMT6063005	Strategic Management	2	5
34	Management	MGMT6145005	Compensation and Performance Management	2	5
35	Management	MGMT6297005	Operations Management	4	5
36	Management	MGMT6341005	Strategic Management	4	5
37	Management	MGMT6412005	Customer Relationship Management	2	5
38	Global Business Marketing	MKTG6272005	Marketing Research	2/2	5
39	Global Business Marketing	MKTG6294005	Branding & Omnichannel Retailing	4	4
40	Accounting	ACCT6353020	Management Information System	2	4
41	Accounting Bekasi	ACCT6382020	Business Process Analysis and Solution	2	4
42	Marketing Communication	COMM6435019	Global Consumer Behavior	2	4
43	Marketing Communication	COMM6510019	Reportage & Interview Technique	2/2	4
44	Marketing Communication	COMM6540019	Communication & Public Affairs	2	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
45	Marketing Communication	COMM6538019	Media Promotion & Marketing in Creative Broadcasting	2	5
46	Marketing Communication	COMM6541019	Digital Corporate Communication	2/2	5
47	Marketing Communication	COMM6542019	Event Management for Brand	2/2	5
48	Marketing Communication	COMM6543019	Digital Brand Communicaton	2/2	5
49	Tourism	TRSM6208022	Tourism Innovation and Product Development	4	5
50	Tourism	TRSM6196022	Tourism Community Empowerment	2	5
51	Computer Engineering	CPEN6098010	Computer Networks	2/2	5
52	Computer Engineering	CPEN6126010	Cross Platform Application Development	4	5
53	Computer Engineering	CPEN6225010	Telco Network & Switching System	2	5
54	Computer Engineering	CPEN6232010	Cloud Technology Practice	2	5
55	Food Technology	FOOD6073015	Current Issues in Food Technology	2	4
56	Food Technology	FOOD6074015	Food Processing Technology II	2	4
57	Food Technology	FOOD6059015	Food Packaging, Labeling and Shelf-life	2	4
58	Food Technology	FOOD6076015	Food Fermentation Technology	2	5
59	Food Technology	CPEN6235015	IoT in Food Industry	2	5
60	Food Technology	FOOD6065015	Functional Foods & Nutraceuticals	2	5
61	Industrial Engineering	ISYE6041011	Engineering Economy	2	4
62	Industrial Engineering	ISYE6113011	Leadership & Organizational Behavior	2	4
63	Industrial Engineering	ISYE6181011	System Engineering & Analysis	2	4
64	Industrial Engineering	ISYE6067011	Global Supply Chain	2	5
65	Industrial Engineering	ISYE6115011	Transportation Modeling	2	5
66	Industrial Engineering	ISYE6130011	Project Management	2	5
67	Computer Science	ISYS6211001	Web Based Application Development	2/2	4
68	Computer Science	ISYS6197001	Business Application Development	2/2	5
69	Computer Science	MOBI6059001	Mobile Programming	2	5
70	Creative Advertising	DSGN6671007	Creative Writing for Commercials	4	4
71	Creative Advertising	MDIA6046007	Audio Visual (Pre Production and Production)	4	4
72	Creative Advertising	DSGN6661007	Photography	4	5
73	Creative Advertising	DSGN6732007	Photography	4	5
74	Creative Advertising	DSGN6651007	Photography	4	4
75	New Media	DSGN6743007	Digital Graphic Reproduction	4	4
76	Business Information Technology	ISYS6574003	Information Retrieval	4	4
77	Business Information Technology	ISYS6577003	Machine Learning & Foundations	2	4
78	Business Information Technology	ISYS6606003	Smart Application	2	4
79	Business Information Technology	ISYS6579003	Knowledge-Based AI: Cognitive Systems	4	5
80	Information Systems	BUSS6043003	Introduction to E-Business	4	4
81	Information Systems	ISYS6016003	Social Media Fundamental	2	4

No	Course Owner Department	Course Code	Course Name	SCU	Semester
82	Information Systems	ISYS6084003	Database	2/2	4
83	Information Systems	ISYS6169003	Database Systems	4/2	4
84	Information Systems	ISYS6203003	Mobile Application Development	2/2	4
85	Information Systems	ISYS6210003	Data Visualization	2	4
86	Information Systems	ISYS6280003	Database Systems	4/2	4
87	Information Systems	ISYS6285003	Digital and New Media	2	4
88	Information Systems	ISYS8066003	Business Process Management	4	5
89	International Relations	INTR6143029	ASEAN Community: Security, Economic, and Socio Cultural Aspects	4	4
90	International Relations	INTR6162029	Multiculturalism and Digital Society	2	5
91	Business Law	LAWS6017028	Intellectual Property Rights	4	4
92	Business Law	LAWS6110028	Cyber Law	2	4
93	Business Law	LAWS6159028	Legal Aspect in Business	2	4
94	Business Law	LAWS6171028	Business Competition & Consumer Protection Law	2	4
95	Business Law	LAWS6172028	Environmental and Natural Resources Law	2	5
96	Business Law	LAWS6176028	Tax Law	2	5
97	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	4
98	Chinese Literature	CHIN6158026	Chinese Business in Daily Communication	4	4
99	Chinese Literature	CHIN6157026	Chinese Business for Etiquette (Beginner)	4	5
100	Chinese Literature	CHIN6158026	Chinese Business in Daily Communication	4	5

Enrichment Track Scheme

Track	Semester 6							Semester 7						
	IN	RS	EN	CD	SA	IS	etc	IN	RS	EN	CD	SA	IS	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				
9	v											v		
10	v												v	

Note:

IN	: Certified Internship	SA	: Certified Study Abroad
RS	: Certified Research	IS	: Certified Specific Independent Study
EN	: Certified Entrepreneurship	FS	: Further Study
CD	: Certified Community Development	etc	: Study Program Special Purposes

Description:

Student will take one of enrichment program tracks

Certified Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			20
FOOD6080015	Unit Operations in Food Industry	8	
FOOD6067015	Self-Management & Work Ethics	4	
FOOD6031015	Industrial Experience	8	
Enrichment Program II			20
FOOD6068015	Professionalism & Leadership	4	
FOOD6081015	Integrated Food Processing	8	
FOOD6070015	Project Management & Organization	8	

Certified Entrepreneurship Track

Code	Course Name	SCU	Total
Enrichment Program I: *(For students who only take Certified Entrepreneurship track in semester 6, should take these courses:)*			20
ENTR6591015	New Food Venture Initiation	8	
ENTR6592015	Food Product Development Process	8	
ENTR6593015	EES in Food Business	4	
Enrichment Program II: *(For students who only take Certified Entrepreneurship track in semester 7, should take these courses:)*			20
ENTR6594015	Food Product Launching	8	
ENTR6595015	Food Business Development	8	
ENTR6576015	Professionalism & Leadership	4	

Certified Research Track

Code	Course Name	SCU	Total
Enrichment Program I			20
RSCH6227015	Research Experience	8	
RSCH6508015	Experimental Design	8	
RSCH6182015	Global EES in Food Technology	4	
Enrichment Program II			20
RSCH6490015	Professionalism & Leadership	4	
RSCH6509015	Academic Writing	8	
RSCH6492015	Research Methodology	8	

Certified Community Development Track

Code	Course Name	SCU	Total
Enrichment Program I			20
CMDV6128015	Community Outreach Project Implementation	8	
CMDV6288015	Community Outreach Project for Food Processing	8	
CMDV6098015	Employability and Entrepreneurial Skills in Food Technology	4	

Certified Study Abroad Track

Code	Course Name	SCU	Total
Elective courses list for study abroad*			
Enrichment Program I/II			
GLOB6005015	Elective Course for Study Abroad 1	4	
GLOB6006015	Elective Course for Study Abroad 2	4	
GLOB6007015	Elective Course for Study Abroad 3	4	
GLOB6008015	Elective Course for Study Abroad 4	4	
GLOB6009015	Elective Course for Study Abroad 5	2	
GLOB6010015	Elective Course for Study Abroad 6	2	
GLOB6011015	Elective Course for Study Abroad 7	2	20
GLOB6012015	Elective Course for Study Abroad 8	2	
GLOB6013015	Elective Course for Study Abroad 9	2	
GLOB6014015	Elective Course for Study Abroad 10	2	
GLOB6015015	Elective Course for Study Abroad 11	2	
GLOB6016015	Elective Course for Study Abroad 12	2	
GLOB6249015	Elective Course for Study Abroad 27	3	
GLOB6250015	Elective Course for Study Abroad 28	3	
GLOB6251015	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.*

Certified Specific Independent Study

Code	Course Name	SCU	Total
Elective courses list for certified specific independent study*			
Enrichment Program I/II			
MICR6033015	Course Certification I	3	
MICR6034015	Technical Skill Enrichment I	4	
MICR6035015	Industrial Project I	9	
MICR6036015	Soft Skill Enrichment I	4	
MICR6001015	Elective Course for Micro Credential Course 1	8	
MICR6002015	Elective Course for Micro Credential Course 2	8	
MICR6003015	Elective Course for Micro Credential Course 3	6	
MICR6004015	Elective Course for Micro Credential Course 4	6	20
MICR6005015	Elective Course for Micro Credential Course 5	6	
MICR6006015	Elective Course for Micro Credential Course 6	5	
MICR6007015	Elective Course for Micro Credential Course 7	5	
MICR6008015	Elective Course for Micro Credential Course 8	5	
MICR6009015	Elective Course for Micro Credential Course 9	5	
MICR6010015	Elective Course for Micro Credential Course 10	4	
MICR6011015	Elective Course for Micro Credential Course 11	4	
MICR6012015	Elective Course for Micro Credential Course 12	4	
MICR6013015	Elective Course for Micro Credential Course 13	4	

Code	Course Name	SCU	Total
MICR6014015	Elective Course for Micro Credential Course 14	4	
MICR6015015	Elective Course for Micro Credential Course 15	3	
MICR6016015	Elective Course for Micro Credential Course 16	3	
MICR6017015	Elective Course for Micro Credential Course 17	3	
MICR6018015	Elective Course for Micro Credential Course 18	3	
MICR6019015	Elective Course for Micro Credential Course 19	3	
MICR6020015	Elective Course for Micro Credential Course 20	3	
MICR6021015	Elective Course for Micro Credential Course 21	2	
MICR6022015	Elective Course for Micro Credential Course 22	2	
MICR6023015	Elective Course for Micro Credential Course 23	2	
MICR6024015	Elective Course for Micro Credential Course 24	2	
MICR6025015	Elective Course for Micro Credential Course 25	2	
MICR6026015	Elective Course for Micro Credential Course 26	2	
MICR6027015	Elective Course for Micro Credential Course 27	2	
MICR6028015	Elective Course for Micro Credential Course 28	2	
MICR6029015	Elective Course for Micro Credential Course 29	1	
MICR6030015	Elective Course for Micro Credential Course 30	1	
MICR6031015	Elective Course for Micro Credential Course 31	1	
MICR6032015	Elective Course for Micro Credential Course 32	1	

*) For students who take BINUS certified specific independent study courses, they should take the first 4 courses on the list above (20 credits). Meanwhile, electives courses 1 to 32 are transferred courses for students who take certified specific independent study outside BINUS University. 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 Study Program

Course		SCU	Sem.	Prerequisite Course		SCU	Sem.
FOOD6077015	Food Microbiology	2/1	4	SCIE6026015	Basic Microbiology	2/1	2
FOOD6003015	Food Analysis	2/2	5	FOOD6082015	Food Chemistry	2/1	3

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

No.	Course Code	Course Name	Minimal Grade
1.	CHAR6013015	Character Building: *Pancasila*	B
2.	FOOD6082015	Food Chemistry	C
3.	FOOD6056015	Food Engineering*	C
4.	FOOD6057015	Food Innovation & Product Development*	C
5.	ENTR6511001	Entrepreneurship: Market Validation	C
6.	FOOD6003015	Food Analysis*	C
Streaming: Innovative Food Processing			
7.	FOOD6059015	Food Packaging, Labeling and Shelf-life	C
8.	FOOD6065015	Functional Food & Nutraceuticals	C

*) Tutorial & Multipaper