Food Technology

Introduction

Food Technology Program BINUS University is designed not only to meet the market needs, but also to produce creative, innovative and productive graduates mastering in food product innovation as well as food system and management with IT support, providing graduates with *entrepreneurship* in food technology.

Food Technology Program concerns the application of chemical, biological, biochemical and engineering sciences to further understanding and to improve the quality, safety, nutritional, and economic value of food and beverages.

Departmental facilities include well-equipped laboratories, namely Food Chemistry, Biochemistry, Microbiology, Food Processing, Physics, Computer, Sensory and Packaging Laboratories with IT support.

Vision

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

Mission

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.

Graduate Competencies

At the end of the program, graduates will have these following competencies:

1. Graduates will be able to analyze the chemical and biochemical reactions problems that occur in the food from farm to consumption.
2. Graduates will be able to analyze the microbiology concepts in identification the cause damage of food and a disease-causing bacterium.
3. Graduates will be able to propose minimum risks solution by applying fundamental principle of Engineering Process in food production.
4. Graduates will be able to apply the principle of sensory testing with a good manually and computerize process in controlling and designing the food packaging to keep the safety, healthy and balance nutritional of food.
5. Graduates will be able to apply Informatics technology in food processing starting from raw material to the end product with a good, safe, and health quality.
6. Graduates will be able to employ the acquired knowledge and understanding of Food Technology through internship, research, and exchange program.

Prospective Career of The Graduates

1. Food Technology Industry: production, quality control, R&D in various national and international Food Processing industries
2. Food processing system designer
3. Food safety system designer
4. Food product innovation designer (formulation and product design)
5. IT system/Software designer in supporting food processing
6. Researcher and analyst in food processing or food technology to support the Government or industry.
7. Analyst in food policy, research and implementation to develop food industry, food safety, nutrition, food quality standards, the needs of food and counseling
8. Consultant in food processing, product formulation, food safety, sanitation
9. Food Entrepreneur

Curriculum

Food Technology Program is a solid foundation of knowledge and understanding of Food Technology that will be beneficial to contribute in multinational Food Industry, with the methodological and computational skills to operate effectively and efficiency through direct involvement in problem solving required both in research and implementation of Food Technology. The Food Technology curriculum is structured to provide knowledge and understanding of contemporary issues to produce the innovation in Food Technology with IT support, as well as food system and management.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6013	Character Building: Pancasila	2	20
	LANG6027	Indonesian	2	
	FOOD6015	Introduction to Food Technology	2	
	SCIE6027	Physic	2/1	
	SCIE6024	Biology	2/1	
	MATH6081	Mathematics	2	
	SCIE6020	Chemistry	2/2	
	English University Courses I			
	ENGL6128	English in Focus	2	
	ENGL6130	English for Business Presentation	2	
2	CHAR6014	Character Building: Kewarganegaraan	2	20
	SCIE6023	Physical Chemistry	2/1	
	SCIE6021	Organic Chemistry	2/1	
	MATH6031	Calculus	4	
	FOOD6016	Operation Unit in Food Industry	2	
	FOOD6012	Basic Food Biochemistry	2/2	
	English University Courses II			
	ENGL6129	English Savvy	2	
	ENGL6131	English for Written Business Communication	2	
3	CHAR6015	Character Building: Agama	2	18
	ENTR6003	Entrepreneurship I	2	
	STAT6095	Statistics Method	2	
	SCIE6022	Analytical Chemistry	2/1	
	SCIE6026	Basic Microbiology	2/1	
	FOOD6001	Food Chemistry	2/2	
	FOOD6002	Characteristics of Food Materials	2	
4	FOOD6017	Principle of Food Engineering	2/2	20
	FOOD6018	Principle of Food Processing	4	
	FOOD6007	Food Microbiology	2	
	COMP6268	Algorithm & Programming	2/2	
	FOOD6019	Food Processing Technology*	4/2	
5	FOOD6003	Food Analysis	2/2	18
	FOOD6028	Functional Foods	2	
	FOOD6020	Integrated Food Processing Laboratory	2	
	FOOD6021	Food Packaging and Storage Technology	2	
	ENTR6004	Entrepreneurship II	2	
	FOOD6008	Food Microbiology Laboratory	2	
	FOOD6009	System of Food Safety	2	
	COMP6272	Data Structure	2	
6	FOOD6024	Research Methodology & Scientific Writing	2	18
	FOOD6010	Food Quality Assurance*	2/2	
	FOOD6014	Nutrition and Biological Evaluation of Food Component	2/1	
	FOOD6004	Sensory Evaluation	2/1	

Sem	Code	Course Name	SCU	Total
	Elective Courses**			
	COMP6079	Artificial Intelligence	2	
	ISYS6277	Database Systems	2	
	FOOD6026	Innovation and Creation of Food Product	2	
	CPEN6104	Automation and Process Control in Food Processing	2	
	FOOD6023	Bioprocess Technology	2	
	FOOD6013	Metabolism of Food Components	2	
	CPEN6137	Introduction to Sensors Technology	2	
	FOOD6025	Experimental Design	2	
	FOOD6027	Planning and Plant Design	2	
	MOBI6040	Introduction to Mobile Application	2	
	MOBI6041	Web Design	2	
7	**Enrichment Program I**		16	16
8	**Enrichment Program II**		8	16
	FOOD6030	Thesis & Seminar	8	
TOTAL CREDIT 146 SCU				

**) Enrepreneurship embedded*

***) Elective Courses: Students choose 6 credits (on 6th semester)*

English University Courses:

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

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

-) *Students should pass English Savvy with a minimum Grade is C*

Enrichment Program I (7th Semester) & Enrichment Program II (8th Semester):

-) *Student will take one of enrichment program tracks (off campus).*

Enrichment Track Scheme

Track	Semester 7						Semester 8					
	I	RS	ENTR	CD	SA	*etc	I	RS	ENTR	CD	SA	*etc
1	v						v					
2		v					v					
3			v				v					
4				v			v					
5					v		v					
6	v							v				
7	v									v		

Notes:
I : Internship
RS : Research
ENTR : Entrepreneurship

CD : Community Development
SA : Study Abroad
*etc : Department specific needs

Notes:
Student can choose one of the available tracks

Enrichment Internship Track

Code	Course Name	SCU	Total
Enrichment Program I			16
FOOD6031	Industrial Experience	8	
FOOD6005	Food Additive, Food Law and Food Regulation in Food Industry	2	
FOOD6011	Hygiene, Sanitation and System Quality In Food Industry	2	
FOOD6032	Communication Skills in Food Industry	4	
Enrichment Program II			8
FOOD6039	Professional Experience	4	
FOOD6040	Food Analysis in Food Industry	2	
FOOD6041	Work Ethics in Food Industry	2	

Enrichment Entrepreneurship Track

Code	Course Name	SCU	Total
ENTR6295	Business Start Up	8	16
ENTR6201	Food Business Model & Validation	2	
ENTR6202	Launching New Food Venture	2	
ENTR6237	EES in New Food Business	4	

Enrichment Research Track

Code	Course Name	SCU	Total
Enrichment Program I: *(For student who takes research track in semester 7, should take these courses)*			16
RSCH6227	Research Experience	8	
RSCH6153	Scientific Writing on Food Research	4	
RSCH6182	Global EES in Food Technology	4	
Enrichment Program II: *(For student who takes research track in semester 8, should take these courses)*			8
RSCH6227	Research Experience	8	

Enrichment Community Development Track

Code	Course Name	SCU	Total
Enrichment Program I: *(For student who takes community development track in semester 7, should take these courses)*			16
CMDV6128	Community Outreach Project Implementation	8	
CMDV6071	Community Outreach Project for Food Processing	4	
CMDV6098	Employability and Entrepreneurial Skills in Food Technology	4	
Enrichment Program II: *(For student who takes community development track in semester 8, should take these courses)*			8
CMDV6128	Community Outreach Project Implementation	8	

Enrichment Study Abroad Track*

Code	Course Name	SCU	Total
GLOB6005	Elective Course for Study Abroad 1	4	16
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	

*)Transferred courses will be transferred based on credit transfer policies on study program with total of 16 credits.

The Table of Prerequisite for Food Technology (S1)

Subject		Credits	Prerequisite		Credits
FOOD6007	Food Microbiology	2	SCIE6026	Basic Microbiology	2/1
FOOD6017	Principle of Food Engineering	2/2	FOOD6016	Operation Unit in Food Industry	2
FOOD6018	Principle of Food Processing	4	SCIE6023	Physical Chemistry	2/1
			FOOD6001	Food Chemistry	2/2
FOOD6021	Food Packaging and Storage Technology	2	FOOD6018	Principle of Food Processing	4
			FOOD6017	Principle of Food Engineering	2/2

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

No.	Code	Course Name	Minimum Grade
1	CHAR6013	Character Building: Pancasila	B
2	ENTR6004	Entrepreneurship II	C
3	FOOD6012	Basic Food Biochemistry*	C
4	FOOD6001	Food Chemistry	C
5	FOOD6010	Food Quality Assurance	C
6	FOOD6007	Food Microbiology*	C
7	FOOD6019	Food Processing Technology	C
8	FOOD6021	Food Packaging and Storage Technology*	C

*) Tutorial & Multipaper