



CURRICULUM Bachelor of Science in Food Engineering (BSFE) Academic Year 2018-2019 Reference CMOs: CMO No. 4 s. 2018 and CMO No. 20, s. 2013

Curriculum Description

Food Engineering is a multidisciplinary field of applied physical sciences which combines science, microbiology, and engineering education for food and related industries. Food engineering includes, but is not limited to, the application of agricultural engineering and chemical engineering principles to food materials. Food engineers provide the technological knowledge transfer essential to the cost-effective production and commercialization of food products and services.

Program Educational Objectives of Food Engineering

The food engineering alumni three to five years after graduation shall:

- 1. Be at the forefront of advancing technology in line with food products development and processing.
- 2. Assure the safest and most environmentally friendly ways of processing, packaging, preserving, storing and distribution of foods; and
- 3. Be a recognized professional in the food industry and food enterprises with strong initiative and exceptional leadership and management skills.

Student Outcomes

The following skills, knowledge, and behaviors are expected to be attained by students as they progress through the program:

- a. Ability to apply knowledge of mathematics and science to solve engineering problems.
- b. Ability to design and conduct experiments, as well as to analyze and interpret data.
- c. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, in accordance with standards.
- d. Ability to function on multidisciplinary teams.
- e. Ability to identify, formulate, and solve engineering problems.
- f. Understanding of professional and ethical responsibility.
- g. Ability to communicate effectively.
- h. Broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- i. Recognition of the need for, and an ability to engage in life-long learning.
- j. Knowledge of contemporary issues.
- k. Ability to use techniques, skills, and modern engineering tools necessary for engineering practice.
- 1. Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments.

CURRICULUM COMPONENTS

Classification/ Field / Course	No. of Hours/Week		Credit	
	Lec	Lab	Units	
I. TECHNICAL COURSES				
A. Mathematics		0		
Differential Calculus	3	0	3	
Integral Calculus	3	0	3	
Differential Equations	3	0	3	
Engineering Data Analysis	3	0	3	
Sub Total B. Natural/Physical Sciences	12	0	12	
General Chemistry	3	3	4	
Modern Biology	2	3	3	
Physics 1	3	3	4	
Sub Total	8	9	11	
C. Basic Engineering Sciences	0	,	11	
Introduction to Engineering	0	3	1	
Engineering Drawing	0	3	1	
Computer Programming 1	0	3	1	
Computer – Aided Design	0	3	1	
Engineering Economics	3	0	3	
Engineering Management	2	0	2	
Sub Total	5	12	9	
D. Allied Courses		-		
Physics 2	3	3	4	
Analytical Chemistry	4	3	5	
Organic Chemistry	4	3	5	
Basic Electrical and Electronics Engineering	2	3	3	
Material Science and Engineering	3	0	3	
Environmental Science and Engineering	3	0	3	
Engineering Mechanics	3	0	3	
Technopreneurship	3	0	3	
Sub Total	25	12	29	
E. Professional Courses				
Food Engineering Calculations	2	3	3	
Physical Chemistry	2	3	3	
Advanced Engineering Mathematics for FE Thermodynamics	3	0	3	
Flow of Fluids	2	03	3	
Flow of Fluids Food Chemistry	3	3	4	
Heat and Mass Transfer in food	2	3	3	
Separation Processes and Introduction to Particle Technolog	2	3	3	
Process Dynamics and Control	2	3	3	
General Microbiology	2	3	3	
Food Microbiology	3	3	4	
Food Processing I	2	3	3	
Food Processing II	2	3	3	
Food Process Industries	3	0	3	
Research Methods	3	0	3	
Computer Applications in Food Engineering	0	3	1	
Industrial Waste Management and Control	3	0	3	
Technical Analysis of Food and Feeds	3	3	4	
Sensory Evaluation and Product Development	2	3	3	
Field Trips and Seminars	0	3	1	
Post-Harvest Handling Technology	3	0	3	
Food Packaging and Labeling	3	0	3	

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PROGRAM OF STUDY

		YEAR emester				
			Hour/s			
Course Code	Course Title		No. of Hour/s Lec Lab		Pre-requisite/s	Co-requisite/
ENGG 401	Introduction to Engineering	0	3	1		
GEd 101	Understanding the Self	3	0	3		
GEd 101 GEd 102	Mathematics for the Modern World	3	0	3		
			-			
GEd 106	Purposive Communication	3	0	3		
MATH 401	Differential Calculus	3	0	3		
NSTP 111	National Service Training Program 1	3	0	3		
PE 101	Physical Fitness, Gymnastics and Aerobics	2	0	2		
SCI 401	General Chemistry	3	3	4		
GEd 105	Readings in Philippine History	3	0	3		
	Total	23	6	25		
	FIRST	YEAR				
	Second	Semester				
Course Code	Course Title	No. of	Hour/s	Unit/s	Due ve aniaite la	
Course Coue	Course Thie	Lec	Lab	Unit/S	Pre-requisite/s	Co-requisite
CpE 401	Computer Programming 1	0	3	1		
ENGG 402	Engineering Drawing	0	3	1		
GEd 104	The Contemporary World	3	0	3		1
GEd 101	Art Appreciation	3	0	3		
GEd 100 GEd 109	Science, Technology and Society	3	0	3		
MATH 402	Integral Calculus	3	0	3	MATH 401	
NSTP 121	National Service Training Program 2	3	0	3	NSTP 111	
PE 102	Rhythmic Activities	2	0	2	PE 101	
			-			MATH 402
SCI 403	Physics 1	3	3	4	MATH 401	MATH 402
	Total	20	9	23		
		YEAR				
	Mid	term				1
Course Code	Course Title	No. of	Hour/s	Unit/s	Pre-requisite/s	Co-requisite/
		Lec	Lab	C mus	The requisiters	eo requisite/
GEd 103	Life and Works of Rizal	3	0	3		
GEd 107	Ethics	3	0	3		
SCI 402	Modern Biology	2	3	3		
	Total	0	3	9		
	Total	8	5	-		
		8 D YEAR	-			
	SECON	•	-			I
	SECON First S	D YEAR emester	-		.	<i>a</i>
Course Code	SECON	D YEAR emester No. of	Hour/s	Unit/s	Pre-requisite/s	Co-requisite/
	SECON First S Course Title	D YEAR emester No. of Lec	Hour/s Lab		-	Co-requisite/
ChE 401	SECON First S Course Title Analytical Chemistry	D YEAR emester No. of Lec 4	Hour/s Lab 3	5	SCI 401	Co-requisite,
ChE 401 ENGG 403	SECON First S Course Title Analytical Chemistry Computer-Aided Design	D YEAR emester No. of Lec 4 0	Hour/s Lab 3 3	5	SCI 401 ENGG 402	Co-requisite,
ChE 401 ENGG 403 ENGG 413	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering	D YEAR emester No. of Lec 4 0 3	Hour/s Lab 3 3 0	5 1 3	SCI 401 ENGG 402 SCI 401	Co-requisite
ChE 401 ENGG 403 ENGG 413 FE 401	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations	D YEAR emester No. of Lec 4 0 3 2	Hour/s Lab 3 0 3	5 1 3 3	SCI 401 ENGG 402	Co-requisite/
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino	D YEAR emester No. of Lec 4 0 3 2 3	Hour/s Lab 3 3 0 3 0	5 1 3 3 3	SCI 401 ENGG 402 SCI 401 SCI 401	Co-requisite
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis	D YEAR emester No. of Lec 4 0 3 2 3 3 3	Hour/s Lab 3 0 3 0 0 0	5 1 3 3 3 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402	Co-requisite
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations	D YEAR emester No. of Lec 4 0 3 2 3 3 3 3 3 3	Hour/s Lab 3 3 0 3 0 0 0 0 0	5 1 3 3 3 3 3 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402	Co-requisite/
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports	D YEAR emester No. of Lec 4 0 3 2 3 3 3 2 3 2	Hour/s Lab 3 3 0 3 0 0 0 0 0 0 0	5 1 3 3 3 3 3 2	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101	Co-requisite/
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2	D YEAR emester No. of Lec 4 0 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 3	5 1 3 3 3 3 3 2 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402	Co-requisite/
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 23	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 3 12	5 1 3 3 3 3 3 2	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101	Co-requisite,
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total	D YEAR emester No. of Lec 4 0 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 3 12	5 1 3 3 3 3 3 2 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101	Co-requisite,
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 23	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 3 12	5 1 3 3 3 3 3 2 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101	Co-requisite
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 23 Semester	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 3 12	5 1 3 3 3 3 3 2 4 27	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 23 Semester	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 12	5 1 3 3 3 3 3 2 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 4 0 10 2 3 2 3 23 D YEAR Semester No. of	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 12 Hour/s	5 1 3 3 3 3 3 2 4 27	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 Pre-requisite/s	Co-requisite
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 Course Code ChE 431	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 4 0 10 2 3 2 3 23 D YEAR Semester No. of Lec	Hour/s Lab 3 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 3 12 Hour/s Lab 3	5 1 3 3 3 3 2 4 27 Unit/s 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 SCI 403 ChE 430, MATH 404	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 Course Code ChE 431 ChE 402	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Organic Chemistry	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 4	Hour/s Lab 3 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 3 12 Hour/s Hour/s	5 1 3 3 3 3 2 4 27 Unit/s 3 5	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 SCI 403 ChE 430, MATH 404 SCI 401	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 Course Code ChE 431 ChE 402 ChE 432	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Flow of Fluids	D YEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 4 2 4 2	Hour/s Lab 3 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 1 3 3 3 3 3 3 2 4 27 Unit/s 3 5 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 SCI 403 ChE 430, MATH 404 SCI 401 FE 401, MATH 404	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 SCI 404 Course Code ChE 431 ChE 402 ChE 432 FE 402	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Flow of Fluids Advanced Engineering Mathematics for FE	D YEAR emester No. of Lec 4 0 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 2 3 2 3	Hour/s Lab 3 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 1 3 3 3 3 3 3 2 4 27 Unit/s 3 5 3 3 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 ChE 430, MATH 404 SCI 401 FE 401, MATH 404 MATH 404	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 PE 103 SCI 404 ChE 402 ChE 431 ChE 402 FE 402 FE 402 FE 403	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Organic Chemistry Flow of Fluids Advanced Engineering Mathematics for FE Food Chemistry	D YEAR emester No. of Lec 4 0 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 2 3 2 3	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 1 3 3 3 3 3 3 2 4 27 Unit/s 3 5 3 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 SCI 403 ChE 430, MATH 404 SCI 401 FE 401, MATH 404 MATH 404 ChE 430	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 PE 103 SCI 404 ChE 402 ChE 431 ChE 402 FE 402 FE 403 FE 404	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Organic Chemistry Flow of Fluids Advanced Engineering Mathematics for FE Food Chemistry General Microbiology	VEAR emester No. of Lec 4 0 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 3 2 4 2 4 2 3 3 2	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 1 3 3 3 3 3 3 2 4 27 Unit/s 3 5 3 4 3	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 ChE 430, MATH 404 SCI 401 FE 401, MATH 404 MATH 404	
ChE 401 ENGG 403 ENGG 413 FE 401 Fili 101 MATH 403 MATH 404 PE 103 SCI 404 PE 103 SCI 404 ChE 402 ChE 431 ChE 402 FE 402 FE 403	SECON First S Course Title Analytical Chemistry Computer-Aided Design Environmental Science and Engineering Food Engineering Calculations Kontekstwalisadong Komunikasyon sa Filipino Engineering Data Analysis Differential Equations Individual and Dual Sports Physics 2 Total SECON Second Course Title Physical Chemistry Organic Chemistry Flow of Fluids Advanced Engineering Mathematics for FE Food Chemistry	D YEAR emester No. of Lec 4 0 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 2 3 2 3	Hour/s Lab 3 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 1 3 3 3 3 3 3 2 4 27 Unit/s 3 5 3 4	SCI 401 ENGG 402 SCI 401 SCI 401 MATH 402 MATH 402 PE 101 SCI 403 PE 101 SCI 403 ChE 430, MATH 404 SCI 401 FE 401, MATH 404 MATH 404 ChE 430	

	THIRD					
	First Se				Γ	I
Course Code	Course Title	No. of Hour/s		Unit/s	Pre-requisite/s	Co-requisite/
		Lec	Lab		-	et requisiter
ChE 434	Heat and Mass Transfer in Food	2	3	3	ChE 433	
ENGG 409	Engineering Mechanics	3	0	3	SCI 403	
ENGG 412	Materials Science and Engineering	3	0	3	SCI 401	
ENGG 416	Research Methods	3	0	3	MATH 403	
FE 405	Food Microbiology	3	3	4	FE 404	
FE 406	Food Processing I	2	3	3	FE 403	
FE 407	Computer Applications in Food Engineering	0	3	1	ENGG 403	
Fili 102	Filipino sa Iba't Ibang Disiplina	3	0	3		
ME 431	Thermodynamics	3	0	3	SCI 403, MATH 402	
	Total	22	12	26		
	THIRD	YEAR				
	Second S	Semester				
Comercia da			No. of Hour/s		Den and and attacks	C
Course Code	Course Title	Lec	Lab	Unit/s	Pre-requisite/s	Co-requisite/
ChE 416	Process Dynamics and Control	2	3	3	FE 402	
ChE 418	Industrial Waste Management and Control	3	0	3	ENGG 413	
ChE 435	Separation Processes and Introduction to Particle Technology	2	3	3	ChE 434	
ENGG 406	Engineering Management	2	0	2		
FE 408	Sensory Evaluation and Product Development	2	3	3	MATH 403, FE 407	
FE 408	Food Processing II	2	3	3	FE 406	
FE 409	Technical Analysis of Food and Feeds	3	3	4	FE 403	
TE 410	Total	16	15	21	TE 405	
			15	21		
	Midi		II /			1
Course Code	Course Title		Hour/s	Unit/s	Pre-requisite/s	Co-requisite
		Lec	Lab		•	1
FE 411	Food Process Industries	3	0	3		
FE 412	Field Trips and Seminars	0	3	1		
ENGG 404	Engineering Economics	3	0	3	MATH 402	
			-			
	Total	6	3	7		
	FOURT	H YEAR	-	7		
		H YEAR emester		7		
Course Code	FOURTI First Se	H YEAR emester	-		Pre_requisite/s	Co-requisite
Course Code	FOURT First Se Course Title	H YEAR emester		7 Unit/s	Pre-requisite/s	Co-requisite/
Course Code EE 420	FOURTI First Se	H YEAR emester No. of	Hour/s		SCI 404	Co-requisite/
	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology	H YEAR emester No. of Lec	Hour/s Lab	Unit/s	-	Co-requisite
EE 420	FOURT First Se Course Title Basic Electrical and Electronics Engineering	H YEAR emester No. of Lec 2	Hour/s Lab 3	Unit/s 3	SCI 404	Co-requisite/
EE 420 FE 413	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology	H YEAR emester No. of Lec 2 3	Hour/s Lab 3 0	Unit/s 3 3	SCI 404 FE 409, FE 410	Co-requisite/
EE 420 FE 413 FE 414	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food	H YEAR emester No. of Lec 2 3 3	Hour/s Lab 3 0 0	Unit/s 3 3 3 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412	Co-requisite/
EE 420 FE 413 FE 414 FE 415 FE 416	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering	H YEAR emester No. of Lec 2 3 3 1 1 3	Hour/s Lab 3 0 0 3 0 3 0	Unit/s 3 3 3 2 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409	Co-requisite/
EE 420 FE 413 FE 414 FE 415	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I	H YEAR emester No. of Lec 2 3 3 1 1 3 3	Hour/s Lab 3 0 0 3 0 0 3 0	Unit/s 3 3 3 2 3 3 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409	Co-requisite/
EE 420 FE 413 FE 414 FE 415 FE 416	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 3 15	Hour/s Lab 3 0 0 3 0 0 3 0 0 0 6	Unit/s 3 3 3 2 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409	Co-requisite/
EE 420 FE 413 FE 414 FE 415 FE 416	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 1 5 H YEAR	Hour/s Lab 3 0 0 3 0 3 0 0 6	Unit/s 3 3 3 2 3 3 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409	Co-requisite/
EE 420 FE 413 FE 414 FE 415 FE 415 FE 416 FE 417	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second Second	H YEAR emester No. of Lec 2 3 1 3 1 3 1 3 1 5 H YEAR	Hour/s Lab 3 0 0 3 0 3 0 0 6	Unit/s 3 3 3 2 3 3 17	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405	
EE 420 FE 413 FE 414 FE 415 FE 416	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT	H YEAR emester No. of Lec 2 3 1 3 1 3 3 15 H YEAR Semester No. of	Hour/s Lab 3 0 0 3 0 0 6 Hour/s	Unit/s 3 3 3 2 3 3 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409	Co-requisite/
EE 420 FE 413 FE 414 FE 415 FE 416 FE 417 Course Code	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second S Course Title	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 3 15 H YEAR Semester No. of Lec	Hour/s Lab 3 0 0 3 0 0 6 4 Hour/s Lab	Unit/s 3 3 3 2 3 3 17 Unit/s	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405 Pre-requisite/s	
EE 420 FE 413 FE 414 FE 415 FE 416 FE 417 Course Code ENGG 417	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second S Course Title On-the-Job Training	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 3 15 H YEAR Semester No. of Lec 3.	Hour/s Lab 3 0 0 3 0 0 3 0 0 6 4 Hour/s Lab 20	Unit/s 3 3 3 2 3 3 17 Unit/s 4	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405 Pre-requisite/s Fourth Year Standing	
EE 420 FE 413 FE 414 FE 415 FE 416 FE 417 Course Code ENGG 417 ENGG 405	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second S Course Title On-the-Job Training Technopreneurship	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 3 1 5 H YEAR Semester No. of Lec 3 3 3	Hour/s Lab 3 0 0 3 0 3 0 0 6 6 Hour/s Lab 20 0	Unit/s 3 3 3 2 3 3 17 Unit/s 4 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405 Pre-requisite/s Fourth Year Standing Fourth Year Standing	
EE 420 FE 413 FE 414 FE 415 FE 416 FE 417 Course Code ENGG 417 ENGG 405 FE 418	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second S Course Title On-the-Job Training Technopreneurship Food Engineering Project I	H YEAR emester No. of Lec 2 3 1 3 1 3 3 1 5 H YEAR Semester No. of Lec 3 3 1	Hour/s Lab 3 0 0 3 0 0 3 0 6 4 Hour/s Lab 20 0 3	Unit/s 3 3 2 3 3 17 Unit/s 4 3 2	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405 Pre-requisite/s Fourth Year Standing Fourth Year Standing ENGG 416	
EE 420 FE 413 FE 414 FE 415 FE 416 FE 417 Course Code ENGG 417 ENGG 405	FOURT First Se Course Title Basic Electrical and Electronics Engineering Post-Harvest Handling Technology Food Packaging and Labeling Food Engineering Design 1 Laws, Ethics and Process Safety for Food Engineering Elective I Total FOURT Second S Course Title On-the-Job Training Technopreneurship	H YEAR emester No. of Lec 2 3 3 1 3 3 1 3 3 1 5 H YEAR Semester No. of Lec 3 3 3	Hour/s Lab 3 0 0 3 0 3 0 0 6 6 Hour/s Lab 20 0	Unit/s 3 3 3 2 3 3 17 Unit/s 4 3	SCI 404 FE 409, FE 410 FE 405, ENGG 412 FE 407, FE 409 ENGG 405 Pre-requisite/s Fourth Year Standing Fourth Year Standing	