





LEYTE STATE UNIVERSITY

Visca, Baybay, Leyte 6521  
Philippines

*Office of the President*

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1 May 2003

**The Honorable Chairman and  
Members of the LSU Board of Regents**

*Ladies/Gentlemen:*

I am hereby endorsing the "**Proposal to Revise the Bachelor of Science in Food Technology (BSFT) Program**" which has been deliberated and approved by the University Academic Council during its meeting on April 24, 2003.

I am therefore, recommending the same **FOR APPROVAL** by the Board of Regents.

Very truly yours,

*Handwritten signature: Len Baybay*

**PACIENCIA P. MILAN**  
President

BOARD ACTION: \_\_\_\_\_  
DATE : 1 May 2003



# PROPOSAL TO REVISE THE BACHELOR OF SCIENCE IN FOOD TECHNOLOGY PROGRAM

## 1. Rationale

The first Bachelor of Science in Food Technology (BSFT) curriculum has not undergone any major revision since its implementation in 1985. However, with new development and improvement in food science and technology and the extensive staff development program of Leyte State University, there is now a pool of academic faculty members who are experts in various areas in this field. The conversion of the Food Science Section of DAC-FS into the Department of Food Science and Technology (DFST) also allows the present faculty to work with more focus on improving the program; hence, this proposal.

The proposed revision is aimed at improving the BSFT curriculum for the students to acquire updated knowledge and equip them with relevant skills in food technology.

This proposal has the following salient features:

1. Requirements of the employers are considered to update technical background of students.
2. Institution of separate courses on processing of plant and animal food products courses to improve students' food processing skills.
3. Institution of a course on enterprise management to reinforce the business aspect of food technology.
4. Adoption of the revised mathematics and engineering courses.
5. Inclusion of mandated courses in the General Education Curriculum (GEC) per CHED Memo # 4, Series of 1997.

## 2. Graduate Profile:

### 2.1. Cognitive

- 2.1.1. Understand general food technology concepts and principles.
- 2.1.2. Comprehend basic theories, principles and practices in microbiology, chemistry and engineering with food technology concepts and principles.
- 2.1.3. Acquire adequate knowledge of food engineering, food chemistry, food microbiology, food processing and sensory evaluation.

### 2.2. Psychomotor

- 2.2.1. Measure and analyze the physico-chemical, microbiological, sensory aspects and engineering properties of food products.
- 2.2.2. Conduct scientific experiments/studies effectively.
- 2.2.3. Apply the food technology concepts and principles for the improvement of food products and processes.
- 2.2.4. Distinguish innovative techniques in food processing and use them for the improvement of food quality and to increase productivity.

### 2.3 Affective

- 2.3.1. Appreciate the importance of food technology profession in national development and food security.
- 2.3.2. Show genuine awareness and concern of the impact of food processing and utilization on the environment.
- 2.3.4. Value the responsibilities and obligations of food technologists with understanding of one's strength and limitation.

### 3. Job Opportunities of Food Technology Graduates:

- ❖ Food technologists in food industries
- ❖ Research and development workers in food companies and related enterprises
- ❖ Technical and sales representatives in food and related industries
- ❖ Instructors and researchers in government and research institutes
- ❖ Government food inspectors in regulation and safety
- ❖ Entrepreneurs in the food business

### 4. Changes in Course Title/Description/Credit Units/ Nomenclature/Prerequisites/ No. of Units /Contact Hours:

#### 4.1. From:

FTEC 121 – FOOD CHEMISTRY. Chemical composition of foods and its effect on texture, flavor, color and nutritive value.

Prerequisite : Chem 21 (General Chemistry II)  
Credit : 3 units (2 hrs. lec., 3 hrs lab. per week)

#### To:

FTec 121 – FOOD CHEMISTRY. Chemical nature, composition and biochemical changes of food during handling, processing and storage.

Prerequisite : Chem 31 (Biochemistry)  
Credit : 4 units (3 hrs lec., 3 hrs lab. per week)

#### Rationale:

The change in course description is necessary for the students in Food Technology to have a solid background in the concepts underlying the chemical nature and biochemical changes in food as a preparation for actual work on food processing and preservation. In view of the increased course coverage, there is an increase from 3 to 4-unit credit. Course prerequisite is changed from CHEM 21 (General Chemistry II) to CHEM 31 (Biochemistry) so that students are better prepared to understand biochemical processes.

#### 4.2. From:

FTEC 142 – FOOD ENGINEERING I. Unit operations in food processing.

Prerequisite : Math 123 (Integral Calculus)  
Credit : 4 units (3 hrs lec., 3 hrs lab per week)



To:

FTec 142 – FOOD ENGINEERING I. Principles of unit operations in food processing.

Prerequisite : AE 130 (Thermodynamics)

Credit : 4 units (3 hrs lec., 3 hrs lab. per week)

Rationale:

The change in course description is made in order to emphasize that only the principles of unit operations in food processing will be covered in this course. This enables a detailed coverage of the different principles. There is also a change in prerequisite since Thermodynamics is better suited for this course than Integral Calculus; as a result, this shall help the students understand fully the engineering aspects of food processing.

#### 4.3. From:

FTEC 143 – FOOD ENGINEERING II. Utilities and facilities in food processing systems; process control and optimization.

Prerequisite : FTEC 142 (Food Engineering I)

Credit : 4 units (4 hours lec. per week)

To:

FTec 143 – FOOD ENGINEERING II. Applications of unit operations in food processing; utilities and facilities in food processing systems.

Prerequisite : FTec 142 (Food Engineering I)

Credit : 4 units (3 hrs lec., 3 hrs lab. per week)

Rationale:

The change in course description allows the broadening of the coverage with the inclusion of more detailed applications of unit operations in food processing. The topic on process control and optimization shall be deleted to give way to more appropriate topics in food engineering. The contact hours are increased because of the incorporation of a laboratory which would enhance in the development of skills on important applications of unit operations in food processing.

#### 4.4. From:

FTEC 151 – FOOD PROCESSING I. Theories and practices of preservation, processes used in food industry, packaging materials and techniques.

Prerequisite : FTEC 121 (Food Chemistry)

Credit : 4 units (3 hrs lec., 3 hrs lab per week)

To:

FTec 152 – FOOD PROCESSING AND PRESERVATION. Theories and practices of food preservation; nutritional aspects of food processing; shelf-life studies and food packaging.

Prerequisite : FTec 21 (Food Chemistry) & FTec 131 (Food Microbiology)

Credit : 3 units (2 hrs lec., 3 hrs lab. per week)

Rationale:

There is a change in course title to emphasize that the course does not only cover food processing but also preservation. The course description is also changed to include additional important topics. The topic on "processes used in the food industry" described in the original FTEC 151, shall be covered in detail in the proposed FTec 153 and FTec 155. There is also a change in course number to reflect that the course is offered in the second semester. The credit unit is reduced since the course content can all be covered within the time allotted for a 3-unit subject.

**4.5 From:**

FTEC 162 – FOOD QUALITY ASSURANCE. Food quality control; food safety; national and international legislation and standards.

Prerequisite : FTEC 131 (Food Microbiology)  
Credit : 2 units ( 2 hrs lec. per week)

**To:**

FTec 162 – FOOD QUALITY AND SAFETY. Food quality control; statistical quality control; food safety; national and international food laws and standards.

Prerequisite : FTec 131 (Food Microbiology)  
Credit : 3 units (3 hrs lec. per week)

Rationale:

There is a change in the course title to better reflect the course content which covers both quality and safety. An additional 1 unit is proposed to give time to cover more aspects of Food Laws and hazard analysis critical control point (HACCP) which is now a mandatory requirement.

**4.6. From:**

FTEC 163 – SENSORY EVALUATION. Methods in sensory evaluation; consumer testing and acceptance patterns.

Prerequisite : Stat 21 (Elementary Statistics)  
Credit : 3 units (2 hrs lec., 3 hrs lab per week)

**To:**

FTec 163 - SENSORY EVALUATION OF FOODS. Methods in sensory evaluation; consumer testing and acceptance patterns.

Prerequisite : Stat 21 (Elementary Statistics)  
Credit : 3 units (2 hrs lec., 3 hrs lab per week)

Rationale:

The change of title gives emphasis on the coverage which is only on foods.

**4.7. From**

FTEC 171 – PLANT OPERATION AND MANAGEMENT. Plant layout, production management, resource allocation and industrial relations.

Prerequisite : FTEC 142 (Food Engineering I)  
Credit : 3 units (3 hrs lec per week)



To:

FTec 171 – PLANT OPERATION AND MANAGEMENT. Plant layout, production management, resource allocation and industrial relations.

Prerequisite : FTec 142 (Food Engineering I)

Credit : 3 units (2 hrs lec., 3 hrs lab per week).

Rationale:

Lecture contact hours are reduced to give way for the offering of a laboratory since some production management topics need to be covered as exercises to give students a thorough understanding of the techniques involved.

## 5. New Courses for Addition/Institution

### 5.1. For Addition

5.1.1. Mgt. 139 – MANAGEMENT OF SMALL ENTERPRISE – Organizing a small business; entrepreneurship and its development; strategies for growth and survival of small enterprises.

Prerequisite : Soc.Sci. 13 (Socio-Economic Systems)

Credit : 3 units (3 hrs lec. per week)

Rationale:

This course is added for plant practice students in order to reinforce their knowledge on the management of small enterprise which would help them in writing their plant practice report.

5.1.2. Ecol. 21 - FUNDAMENTALS OF ECOLOGY – Basic principles and concept of ecology.

Prerequisite : Biology 11 (General Biology)

Credit : 3 units (3 hrs lec. per week)

Rationale:

This course shall adequately provide the students with knowledge and skills about the environment.

### 5.2. For Institution

5.2.1. FTec 132 – FOOD HYGIENE AND SANITATION – Fundamentals of food hygiene and evaluation of sanitation in food processing and food service establishments; water use and waste treatment and disposal.

Prerequisite : FTec 131 (Food Microbiology)

Credit : 3 units (2 hrs lec., 3 hrs lab. per week)

Rationale:

This course shall provide the students with a comprehensive knowledge on food hygiene and sanitation in food processing and food service establishments, as well as the principles and practices of water use and waste treatment and disposal which are useful topics for plant practice students.

5.2.2 FTec 153 – PROCESSING ANIMAL FOOD PRODUCTS – Processing and preservation of meat, poultry, dairy and fish; by-product utilization; and waste management; quality control; packaging and handling.

Prerequisite : FTec 152 (Food Processing & Preservation)  
Credit : 3 units (1 hr lec., 6 hrs lab. per week)

5.2.3 FTec 155 – PROCESSING PLANT FOOD PRODUCTS – Processing and preservation of fruits and vegetables, nuts and cereals, etc.; by-product utilization; and waste management; quality control; packaging and handling.

Prerequisite : FTec 152 (Food Processing and Preservation)  
Credit : 3 units (1 hr lec., 6 hrs lab per week)

**Rationale:**

The two courses (FTec 153 & FTec 155) shall allow more time to cover in detail the processing technologies of various agricultural commodities. Both courses with laboratory exercises will equip the students with the practical knowledge and skills in processing and preserving animal and plant food products.

## 6. Existing Courses for Deletion from the Proposed Curriculum

6.1 Span 21 – SPANISH CULTURE IN PHILIPPINE SETTING. A basic course designed to give a functional knowledge of the Spanish Language; selected readings in Spanish as they relate to the Philippine life.

Prerequisite : None  
Credit : 3 units (3 hrs lec. per week)

6.2. AE 121 – ENGINEERING GRAPHICS I. Basic technical practices to Engineering graphics and drafting.

Prerequisite : Math 12 (Plane Trigonometry)  
Credit : 3 units (1 hr lec., 6 hrs lab per week)

**Rationale:**

These two courses are deleted to give way to the additional CHED mandated courses under General Education Curriculum-Category B.

6.3. AE 151 – REFRIGERATION ENGINEERING. Psychometrics, air conditioning cycles, refrigerants and equipment selection.

Prerequisite : AE 136 (Thermodynamics)  
Credit : 3 units (3 hrs lec. per week)

**Rationale:**

This course was already abolished by the Department of Agricultural Engineering in their curriculum. This course shall be deleted since the important topics of this course shall be covered in FTec 143 (Food Engineering II).



## 7. Courses For Adoption

- 7.1. Math 112 – ANALYTIC GEOMETRY AND CALCULUS I – Rectangular coordinates; straight line, circle and conic sections; functions and their graphs; limits and continuity, techniques of differentiation and applications; transcendental functions.

Prerequisite : Math 22 (Plane Trigonometry)  
Credit : 5 units (5 hrs lec. per week)

- 7.2 Math 113 – ANALYTIC GEOMETRY AND CALCULUS II – Definite integral and areas; techniques of integration and applications; curves and areas in polar coordinates; parametric equations; arc and curvature; geometry and calculus of plane and 3D space vector.

Prerequisite : Math 112 (Analytic Geometry and Calculus I)  
Credit : 5 units (5 hrs lec. per week)

Rationale:

The above 2 courses shall be adopted to follow the curricular revisions done in BSAE and other technical courses.

- 7.3 Mgt. 134 – MARKETING MANAGEMENT – Organization, operation and administration.

Prerequisite : SocSci 13 (Socio-Economic Systems)  
Credit : 3 units (3 hrs lec. per week)

Rationale:

This course shall be adopted since this involves marketing of processed products and better suited for the BSFT program.

## BACHELOR OF SCIENCE IN FOOD TECHNOLOGY (BSFT)

## SCHEDULE OF COURSES

PresentProposed

<u>Course No.</u>	<u>Descriptive Title</u>	<u>Lec</u>	<u>Lab.</u>	<u>Unit</u>	<u>Course No.</u>	<u>Descriptive Title</u>	<u>Lec.</u>	<u>Lab.</u>	<u>Unit</u>
<u>FIRST YEAR First Semester</u>					<u>FIRST YEAR First Semester</u>				
Engl 11	Communication Skills	3	0	3	Engl 11	Communication Skills I	3	0	3
Psyc 11	General Psychology	3	0	3	Psyc 11	General Psychology	3	0	3
SocSci 13	Socio-Economic Systems	3	0	3	SocSci 13	Socio-Economic Systems	3	0	3
Math 11	College Algebra	3	0	3	Math 11	College Algebra	3	0	3
Chem 11	General Chemistry I	3	3	4	Chem 11	General Chemistry I	3	3	4
Bio 11	General Biology	3	3	4	Bio 11	General Biology	3	3	4
PhyEd 11	Physical Fitness & Gymnastics	2	0	(2)	PhyEd 11	Physical Fitness & Gymnastics	2	0	(2)
NSTP 11		3	0	(3)	NSTP 11		3	0	(3)
Total Units				20	Total Units				20
<u>FIRST YEAR Second Semester</u>					<u>FIRST YEAR Second Semester</u>				
Engl 12	Communication Skills II	3	0	3	Engl 12	Communication Skills II	3	0	3
Philo 12	Contemporary Philosophical Thoughts	3	0	3	Philo 12	Contemporary Philosophical Thoughts	3	0	3
Soc 11	General Sociology	3	0	3	Socio 11	General Sociology	3	0	3
SocSci 15	Phil. History and Constitution	3	0	3	SocSci 15	Phil. History & Constitution	3	0	3
Chem 21	General Chemistry II	3	0	3	Chem 21	General Chemistry II	3	0	3
Math 12	Plane Trigonometry	3	0	3	Math 12	Plane Trigonometry	3	0	3
SocSci 14	Phil. Soc. Probs., Land Ref. & Taxn	3	0	3	SocSci 14	Phil. Society Prob. & Land Reform	3	0	3
PhyEd 12	Rec'l Games and Rhythmic Act	2	0	(2)	PhyEd 12	Rec'l Games and Rhythmic Act	2	0	(2)
NSTP 12		3	0	(3)	NSTP 12		(3)	0	(3)
Total Units				21	Total Units				21
<u>SECOND YEAR First Semester</u>					<u>SECOND YEAR First Semester</u>				
Phys 11	General Physics	3	3	4	Phys 11	General Physics	3	3	4
Hum 11	Introduction to Humanities	3	0	3	Hum 11	Introduction to Humanities	3	0	3
Math 23	Analytic Geometry	3	0	3	Math 112	Analytic Geometry & Calculus I	5	0	5
Chem 31	General Biochemistry	3	0	3	Chem 121	Organic Chemistry	2	3	3
HN 21	Human Nutrition	3	0	3	HN 21	Human Nutrition	3	0	3
Engl 21	Introduction to Literature	3	0	3	Engl 21	Introduction to Literature	3	0	3
AE 121	Engineering Graphics I	1	6	3					
PhyEd 13	Team Sports	2	0	(2)	PhyEd 13	Team Sports	2	0	(2)
Total Units				22	Total Units				21
<u>SECOND YEAR Second Semester</u>					<u>SECOND YEAR Second Semester</u>				
Phys 21	College Physics	2	3	3	Phys 21	College Physics	2	3	3
Spch 11	Speech Communication	3	0	3	Spch 11	Speech Communication	3	0	3
Chem 135	Quantitative Inorganic Analysis	1	6	3	Chem 135	Quantitative Inorganic Analysis	1	6	3
Math 122	Differential Calculus	4	0	4	Math 113	Analytic Geometry & Calculus II	5	0	5
Micro 22	General Microbiology	2	3	3	Micro 22	General Microbiology	2	3	3
Stat 21	Elementary Statistics	2	3	3	Stat 21	Elementary Statistics	2	3	3
Span 21	Spanish Culture in Phil. Setting	3	0	3					
PhyEd 14	Individual - Dual Sports	2	0	(2)	PhyEd 14	Individual-Dual Sports	2	0	(2)
Total Units				22	Total Units				20



PresentProposed

THIRD YEAR	First Semester	Lec.	Lab.	Unit
FTEC 121	Food Chemistry	2	3	4
FTEC 131	Food Microbiology	2	3	3
Chem 121	Organic Chemistry	2	3	3
Math 123	Integral Calculus	4	0	4
Hort 111	Postharvest Physiol. of Perishable Crops	2	3	3
CS 21	Introduction to Computers	2	3	3
Total Units				20

THIRD YEAR	Second Semester	Lec.	Lab.	Unit
FTEC 122	Food Analysis	2	3	3
FTEC 142	Food Engineering I	3	3	4
FTEC 151	Food Processing I	3	3	4
FTEC 162	Food Quality Assurance	2	0	2
FTEC 198	Research Planning & Manus. Prep.	3	0	3
AE 136	Thermodynamics	3	0	3
Mgt 120	Feasibility Study Preparation	3	0	3
Total Units				22

Summer	Lec.	Lab.	Unit
FTEC 200/200a Undergraduate Thesis/Plant Practice			1/1
Total Units			1

FOURTH YEAR	First Semester	Lec.	Lab.	Unit
Fil 11	Sining ng Pakikipagtalastasan at Retorika	3	0	3
AE 151	Refrigeration Engineering	3	0	3
AgEc 144	Marketing Farm Products	3	0	3
FTEC 153	Food Processing II	3	3	4
FTEC 143	Food Engineering II	4	0	4
FTEC 163	Sensory Evaluation	2	3	3
FTEC 171	Plant Operation & Mgmt	3	0	3
FTEC 200	Undergraduate Thesis			1
Total Units				24

FOURTH YEAR	Second Semester	Lec.	Lab.	Unit
Fil 12	Panitikang Filipino	3	0	3
SocSci 16	Life and Works of Rizal	3	0	3
FTEC 199	Undergraduate Seminar	1	0	1
FTEC 200/200a	Undergraduate Thesis/Plant Practice			4/3
Total Units				11/10

GRAND TOTAL 163/161

THIRD YEAR	First Semester	Lec.	Lab.	Unit
FTec 121	Food Chemistry	3	3	4
FTec 131	Food Microbiology	2	3	3
Chem 31	General Biochemistry	3	0	3
AE 130	Thermodynamics	3	0	3
Hort 111	Postharvest Physiol. of Perishable Crops	2	3	3
CS 21	Introduction to Computers	2	3	3
Ecol 21	Fundamentals of Ecology	3	0	3
Total Units				22

THIRD YEAR	Second Semester	Lec.	Lab.	Unit
FTec 122	Food Analysis	2	3	3
FTec 142	Food Engineering I	3	3	4
FTec 152	Food Processing & Preservation	2	3	3
FTec 162	Food Quality & Safety	3	0	3
FTec 198	Research Planning & Manus. Prep.	3	0	3
FTec 132	Food Hygiene and Sanitation (For Plant Practice Students)	2	3	3
Mgt 134	Marketing Management	3	0	3
FTec 200	Undergraduate Thesis			1
Total Units				20/22

Summer	Lec.	Lab.	Unit
FTec 200a Plant Practice			3
Total Units			3

FOURTH YEAR	First Semester	Lec.	Lab.	Unit
Fil 11	Singing ng Pakikipagtalastasan at Retorika	3	0	3
FTec 155	Processing of Plant Food Products	1	6	3
FTec 153	Processing of Animal Food Products	1	6	3
FTec 143	Food Engineering II	3	3	4
FTec 163	Sensory Evaluation of Foods	2	3	3
FTec 171	Plant Operation & Management	2	3	3
FTec 200/200a	Undergraduate Thesis/Plant Practice			1/1
Total Units				20/20

FOURTH YEAR	Second Semester	Lec.	Lab.	Unit
Fil 12	Panitikang Filipino	3	0	3
SocSci 16	Life and Works of Rizal	3	0	3
Mgt 120	Feasibility Study Preparation	3	0	3
Mgt 139	Management of Small Enterprise (For Plant Practice Students)	3	0	3
FTec 199	Undergraduate Seminar	1	0	1
FTec 200/200a	Undergraduate Thesis/Plant Practice			4/2
Total Units				14/15

158/164

## BSFT COURSE ANALYSIS

## A. General Education Courses

<u>Present</u>				<u>Proposed</u>			
		Units				Units	
1. Language and Humanities				1. Language and Humanities			
Engl 11	Communication Skills	3		Engl 11	Communication Skills I	3	
Engl 12	Communication Skills II	3		Engl 12	Communication Skills II	3	
Engl 21	Introduction to Literature	3		Engl 21	Introduction to Literature	3	
Spch 11	Speech Communication	3		Spch 11	Speech Communication	3	
Hum 11	Introduction to Humanities	3		Hum 11	Introduction to Humanities	3	
Philo 12	Contemporary Philosophical Thoughts	3		Philo 12	Contemporary Philosophical Thoughts	3	
Span 21	Spanish Culture in Phil. Setting	3					
Fil 11	Sining ng Pakikipagtalastasan at Retorika	3		Fil 11	Sining ng Pakikipagtalastasan at Retorika	3	
Fil 12	Panitikang Pilipino	3		Fil 12	Panitikang Pilipino	3	
		27				24	
2. Mathematics, Natural Science				2. Mathematics, Natural Science			
Math 11	College Algebra	3		Math 11	College Algebra	3	
Math 12	Plane Trigonometry	3		Math 12	Plane Trigonometry	3	
Phys 11	General Physics	4		Phys 11	General Physics	4	
Bio 11	General Biology	4		Bio 11	General Biology	4	
Chem 11	General Chemistry I	4		Chem. 11	General Chemistry I	4	
		18				18	
3. Social Sciences				3. Social Sciences			
Psycho 11	General Psychology	3		Psycho 11	General Psychology	3	
Socio 11	General Sociology	3		Socio 11	General Sociology	3	
SocSci 13	Socio-Economic Systems	3		SocSci 13	Socio-Economic Systems	3	
SocSci 14	Phil. Soc. Probs., Land Reforms & Taxn	3		SocSci 14	Phil. Soc. Probs. & Taxn	3	
SocSci 15	Phil. History & Constitution	3		SocSci 15	Phil. History & Constitution	3	
SocSci 16	Life & Works of Rizal	3		SocSci 16	Life & Works of Rizal	3	
		18				18	
		63				60	
B. Fundamental Courses							
Math 23	Analytic Geometry	3		Chem. 21	General Chemistry II	3	
Chem 21	General Chemistry II	3		Chem 31	General Biochemistry	3	
Chem 31	General Biochemistry	3		Phys 21	College Physics	3	
Phys 21	College Physics	3		Stat 21	Elementary Statistics	3	
Stat 21	Elementary Statistics	3		Micro 22	General Microbiology	3	
Micro 22	General Microbiology	3		HN 21	Human Nutrition	3	
HN 21	Human Nutrition	3		CS 21	Introduction to Computers	3	
CS 21	Introduction to Computers	3		Ecol 21	Fundamentals of Ecology	3	
		24				24	



Present

C.	Major Courses	Units	C.
	Math 122 Differential Calculus	4	
	Math 123 Integral Calculus	4	
	AE 121 Engineering Graphics	3	
	AE 136 Thermodynamics	3	
	AE 151 Refrigeration Engineering	3	
	Chem 121 Organic Chemistry	3	
	Chem 135 Quantitative Inorganic Chemistry	3	
	Hort 111 Postharvest Physiol. of Perishable Crops	3	
	Mgt 120 Feasibility Study Preparation	3	
	AgEc 144 Marketing Farm Products	3	
	FTEC 121 Food Chemistry	4	
	FTEC 122 Food Analysis	3	
	FTEC 131 Food Microbiology	3	
	FTEC 142 Food Engineering I		
	FTEC 143 Food Engineering II	4	
	FTEC 151 Food Processing I	4	
	FTEC 153 Food Processing II	4	
	FTEC 162 Food Quality Assurance	2	
	FTEC 163 Sensory Evaluation	3	
	FTEC 171 Plan Operation & Management.	3	
	FTEC 198 Res. Plan. & Manusc. Prep.	3	
	FTEC 199 Undergraduate Seminar	1	
	FTEC 200/ Undergraduate Thesis/ 200a Plant Practice	6/4	
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		76/74	
	TOTAL	163/161	

Proposed

C.	Major Courses	Units	C.
	Math 112 Analytic Geometry & Calculus I	5	
	Math 113 Analytic Geometry & Calculus II	5	
	AE 130 Thermodynamics	3	
	Chem 121 Organic Chemistry	3	
	Chem 135 Quantitative Inorganic Analysis	3	
	Hort 111 Postharvest Physiol. of Perishable Crops	3	
	Mgt 120 Feasibility Study Preparation	3	
	Mgt 134 Marketing Management	3	
	Mgt 139 Management of Small Enterprise (For Plant Practice Students)	3	
	FTec 121 Food Chemistry	4	
	FTec 122 Food Analysis	3	
	FTec 131 Food Microbiology	3	
	FTec 132 Food Hygiene & Sanitation (For Plant Practice Students)	3	
	FTec 142 Food Engineering I	4	
	FTec 143 Food Engineering II	4	
	FTec 152 Food Processing & Preservation	3	
	FTec 153 Processing of Animal Food Products	3	
	FTec 155 Processing of Plant Food Products	3	
	FTec 162 Food Quality and Safety	3	
	FTec 163 Sensory Evaluation of Foods	3	
	FTec 171 Plant Operation & Management	3	
	FTec 190 Special Problem (For Plant Practice Students)	3	
	FTec 198 Res. Plan. & Manus. Prep.	3	
	FTec 199 Undergraduate Seminar	1	
	FTec 200/ Undergraduate Thesis/ 200a Plant Practice	6/6	
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		74/80	
	TOTAL	158/164	