

# Department of Agriculture, Nutrition and Human Ecology

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## Purpose and Goal

The Bachelor of Science in Agriculture program prepares graduates to function as entry-level professionals in a broad range of areas, including food, agriculture, natural resource marketing, production, distribution, and processing. The Bachelor of Science in Agriculture degree program offers a generalist emphasis that serves as the foundation for diverse careers and as a springboard for advanced study in agriculture and natural resource sciences and related fields. Concentrations are available in Agribusiness, Plant and Soil Sciences, Natural Resources and Environmental Sciences, and Animal and Food Sciences. These concentrations guide students in defining an area for future specialization that they can attain at the graduate level and through professional practice. The emphasis on Animal and Food Sciences may serve as pre-professional curricula for veterinary medicine. Students in consultation with their advisors should select additional courses to qualify for professional veterinary medicine research.

Students enrolled in agriculture are afforded hands-on experience through laboratory, field exercises, cooperative education, and summer job assignments. Students completing the program can demonstrate varied skills in many areas. Faculty provide guidance and support to foster students' personal development and leadership skills essential for effective professional practice in the chosen field of practice.

The Human Nutrition and Food program provides quality nutrition education to students who wish to pursue nutrition careers. The program offers three concentrations, emphasizing Health and Wellness, Food Systems Management, and Registered Dietitian. The Health and Wellness concentration prepares students for careers in nursing or the adult care environment, hospitals, health inspections, and fitness. Courses in this concentration help students understand and implement health promotion and disease prevention and promote healthy lifestyles through behavioral changes.

The Food Service Management concentration prepares students for careers as dietary managers who will provide leadership in food service management delivery. This concentration emphasizes operational issues that lead to profitability in a foodservice operation. Students examine the foodservice industry from the management perspective. Students learn about food preparation and leadership knowledge and skills to further their careers in the hospitality industry. The Registered Dietitian concentration provides an avenue toward the eligibility of students to become registered dietitians.

The Human Nutrition and Food program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, Illinois 60606-6695; Telephone: 800-877-1600 ext. 5400. Website <http://www.eatright.org> (<http://www.eatright.org/>).

## Bachelor of Science in Agriculture Degree Program

The degree program in agriculture provides a broad-based study of the food, agricultural, and natural resource sciences. The concentration options allow the student to gain depth in a specialty area and build the foundation for graduate study in the field. Each student must select one of the concentration options to complete the requirements for the degree, BS in Agriculture.

## Degree Program Requirements

Complete Core Curriculum Listing at <https://catalog.pvamu.edu/universitycorecurriculum/>

### Core Curriculum 42 Credit Hours

Communication (Select Two)	6
Mathematics (Select One)	3
Life and Physical Sciences (Select Two) <sup>1</sup>	6
Language, Philosophy, and Culture (Select One)	3
Creative Arts (Select One)	3
American History (Select Two)	6
Government/Political Science	6
POSC 2305	American Government
POSC 2306	Texas Government
Social and Behavioral Sciences (Select One)	3
Component Area Option One (Select One)	3
Component Area Option Two (Select One)	3

### Agriculture Program Requirements

AGRI 1319	General Animal Science	3
AGRI 1331	Agricultural Science and Technology	3
AGRI 1341	Fundamentals of Agricultural Engineering	3

AGRI 1370	Crop Science	3
AGRI 2317	Fundamentals of Agricultural Economics	3
AGRI 2321	Marketing Agricultural Products	3
AGRI 2351	Animal Production and Marketing	3
AGRI 2354	Diseases and Sanitation	3
AGRI 2360	Environmental Soil Science	3
AGRI 2363	Forage and Pasture Management	3
AGEC 3322	Agricultural Financial Analysis	3
AGHR 4341	Special Topics	3
<b>Concentration</b>		<b>42</b>
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> Students preparing for Veterinary Medicine School are required to take PHYS 1301 and PHYS 1302 to satisfy the Life and Physical Sciences core requirement.

## Concentration Options

### Agribusiness

AGRI 2322	Food Distribution Systems	3
AGEC 3321	Agricultural Policy	3
AGEC 4322	Agribusiness Management	3
AGEC 4323	Land and Resource Economics	3
AGEC 4325	Agricultural Prices	3
ACCT 2301	Principles of Accounting	3
ECON 4321	Intermediate Microeconomic Analysis	3
MATH 1342	Elementary Statistics	3
MGMT 1301	Introduction to Business	3
MRKT 3310	Principles of Marketing	3
Targeted Electives <sup>1</sup>		12
<b>Total Hours</b>		<b>42</b>

<sup>1</sup> Targeted electives recommended for Agribusiness (Any 12 SCH) AGRI 1301, AGRI 2363, AGRO 3363, AGRO 3371, AGRI 1327, ANSC 3350

### Plant and Soil Sciences

AGRI 1301	Natural Resource Conservation Management	3
AGRI 2373	Principles of Crop Production	3
AGRO 3362	Soil Morphology and Classification	3
AGRO 3363	Soil Fertility and Fertilizers	3
AGRO 3364	Soil and Water Management	3
AGRO 3371	Gen Entomology	3
AGRO 3373	Plant Pathology	3
AGRO 4361	Soil Microbiology	3
AGRO 4362	Environmental Science	3
GEOG 2311	Introduction to Geographic Information System	3
Targeted Electives <sup>1</sup>		12
<b>Total Hours</b>		<b>42</b>

<sup>1</sup> Targeted electives recommended for Plant & Soil Sciences (Any 12 SCH) AGRI 2322, AGECE 3321, AGECE 4322, AGRI 1327, ANSC 3350, ANSC 3352

### Animal and Food Sciences <sup>1</sup>

AGRI 1311	Dairy Science	3
AGRI 1327	Poultry Science	3

ANSC 2255 or BIOL 1501	Poultry Tech & Marketing <sup>2</sup> General Biology	2
ANSC 3350	Animal Nutrition	3
ANSC 3451	Anatomy and Physiology	4
ANSC 3352	Meat Science	3
ANSC 4353	Breeding/Genetics	3
FDSC 3358 or BIOL 1501	Food Quality Assurance and Sanitation <sup>2</sup> General Biology	3
FDSC 3359 or CHEM 1303	Food Bacteriology <sup>2</sup> General Inorganic Chemistry I	3
FDSC 4357	Food Processing and Engineering	3
Targeted Electives <sup>3,4</sup>		12

**Total Hours** **42**

<sup>1</sup> Students preparing for Veterinary Medicine School are required to take PHYS 1301 and PHYS 1302 to satisfy the Life and Physical Sciences core requirement.

<sup>2</sup> Students preparing for Veterinary Medicine School must replace ANSC 2255 and FDSC 3358 with BIOL 1501 **and** replace FDSC 3359 with CHEM 1303.

<sup>3</sup> Targeted electives for students who desire to attend Veterinary Medicine School: CHEM 1304, CHEM 2303, CHEM 2304, and CHEM 4303.

<sup>4</sup> Targeted electives recommended for Non-Veterinary Medicine School (Any 12 SCH): AGRI 1301, AGRI 2322, AGECE 3321, AGECE 4322, AGRO 3371, AGRO 4362.

#### Natural Resources and Environmental Science

AGECE 3321	Agricultural Policy	3
AGECE 4323	Land and Resource Economics	3
AGEG 4342	Farm Drainage	3
AGRI 1301	Natural Resource Conservation Management	3
AGRO 3362	Soil Morphology and Classification	3
AGRO 3363	Soil Fertility and Fertilizers	3
AGRO 3364	Soil and Water Management	3
AGRO 4362	Environmental Science	3
GEOG 2311	Introduction to Geographic Information System	3
SOCE 4314	Environmental Sociology	3
Targeted Electives <sup>1</sup>		12

**Total Hours** **42**

<sup>1</sup> Targeted electives recommended for Natural Resources and Environmental Sciences (Any 12 SCH) AGECE 4322, AGRI 1327, AGRI 2322, AGRI 2373, AGRO 3362, AGRO 3371

#### Agricultural Sciences - Teaching

CUIN 3300	Educational Foundations	3
CUIN 3301	Educational Psychology	3
CUIN 4310	Instructional Planning and Assessment	3
CUIN 4311	Instructional Methodology and Classroom Management	3
CUIN 4682	Student Teaching Secondary II	6
ENGL 2314	Advanced Composition	3
AGECE 3321	Agricultural Policy	3
AGRI 1301	Natural Resource Conservation Management	3
ANSC 3350	Animal Nutrition	3
Targeted Electives <sup>1</sup>		12

**Total Hours** **42**

<sup>1</sup> Targeted electives recommended for Agricultural Sciences - Teaching (Any 12 SCH) AGRI 1327, AGRI 2322, AGRI 2373, AGECE 4322, AGRO 3371, AGRO 4362, ANSC 3352

## Bachelor of Science in Dietetics with a major in Human Nutrition and Food

The BS degree in Dietetics prepares students for careers in varying fields of nutrition. Students can concentrate in one of three areas: Health and Wellness, Food Service Management, or Registered Dietitian (RD). The RD concentration (also called the Didactic Program in Dietetics, or DPD) is designed to provide an avenue toward students' eligibility to become registered dietitians. The Didactic Program in Dietetics at Prairie View A&M University is accredited by the Accreditation Council in Nutrition and Dietitians (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago Illinois 60606-6695; Telephone 800-877-1600 ext. 5400. Website <http://www.eatright.org>.

### Verification Statement

To receive a verification statement, students must satisfy all of the following requirements;

1. Complete the requirements of the DPD concentration.
2. Graduate with at least a 3.0 GPA in all major and support area required courses.
3. Obtain a grade of 'C' or better in each course.
4. If courses are substituted or completed as an independent study in the department, the student is required to take and successfully complete an examination covering the relevant knowledge and competencies in those areas.

Once all of the above are met a verification statement is issued after the degree is conferred.

## Degree Program Requirements

Complete Core Curriculum Listing at <https://catalog.pvamu.edu/universitycorecurriculum/>

### Core Curriculum 42 Credit Hours

Communication		6
ENGL 1301	Freshman Composition I	
ENGL 1302	Freshman Composition II	
Mathematics		3
MATH 1314	College Algebra	
Life and Physical Sciences		6
CHEM 1303	General Inorganic Chemistry I	
BIOL 2401	Anatomy and Physiology I	
Language, Philosophy, and Culture (Select One)		3
Creative Arts (Select One)		3
American History		6
HIST 1301	United States History I	
HIST 1302	United States History II	
Government/Political Science		6
POSC 2305	American Government	
POSC 2306	Texas Government	
Social and Behavioral Sciences		3
SOCG 1301	General Sociology	
Component Area Option One		3
ECON 1301	Fundamentals of Economics in a Global Society	
Component Area Option Two Core		3
COMP 1300	Digital Communication	
<b>Major Requirements</b>		
HUNF 1130	Introduction to Dietetics	1
HUNF 1322	Nutrition and Wellness	3
HUNF 2353	Intermediate Nutrition	3
HUNF 2363	Food Service Systems	3
HUNF 2365	Food Principles and Meal Management	3

HUNF 2366	Food Systems Management	3
HUNF 3360	Nutritional Biochemistry	3
HUNF 3361	Nutrition Throughout the Lifecycle	3
HUNF 3363	Advanced Nutrition	3
HUNF 3364	Food and Culture	3
HUNF 3365	Nutrition and Disease	3
HUNF 3367	Nutritional Assessment	3
HUNF 4330	Human Nutrition and Food Practicum	3
HUNF 4360	Physiochemical Aspects of Food	3
HUNF 4361	Research in Nutrition	3
HUNF 4369	Community Nutrition and Health	3

**Concentration: Select one from the options below** **32**

**Total Hours** **120**

#### Registered Dietitian Concentration

HUNF 4347	Nutrition Counseling	3
HUNF 4366	Medical Nutrition Therapy I	3
HUNF 4367	Medical Nutrition Therapy II	3
BIOL 2401	Anatomy and Physiology I <sup>1</sup>	1
BIOL 2402	Anatomy and Physiology II	4
CHEM 1304	General Inorganic Chemistry II	3
CHEM 2303	General Organic Chemistry I	3

#### Support Area Courses

MATH 1342	Elementary Statistics	3
MGMT 1301	Introduction to Business	3
COMM 1311	Introduction to Speech Communication	3
BIOL 1307	General Microbiology	3

**Total Hours** **32**

#### Health and Wellness Concentration

BIOL 2401	Anatomy and Physiology I <sup>1</sup>	1
BIOL 2402	Anatomy and Physiology II	4
HUNF 4347	Nutrition Counseling	3
HUNF 4366	Medical Nutrition Therapy I	3
HUNF 4367	Medical Nutrition Therapy II	3
HLTH 3304	Consumer Health	3
HKIN 4304	Athletic Injuries	3

#### Support Area Courses

MATH 1342	Elementary Statistics	3
MGMT 1301	Introduction to Business	3
CHEM 1111 or CHEM 1106	General Chemistry Lab I General Chemistry Lab	1
COMM 1311	Introduction to Speech Communication	3
BIOL 1307	General Microbiology	3

**Total Hours** **33**

#### Food Service Management Concentration

BIOL 2401	Anatomy and Physiology I <sup>1</sup>	1
FDSC 3358	Food Quality Assurance and Sanitation	3
FDSC 3359	Food Bacteriology	3
ACCT 2301	Principles of Accounting	3
MGMT 3310	Principles of Management	3
MGMT 3335	Human Resource Management	3

MRKT 3310	Principles of Marketing	3
Support Area Courses		
MATH 1342	Elementary Statistics	3
MGMT 1301	Introduction to Business	3
CHEM 1111	General Chemistry Lab I	1
COMM 1311	Introduction to Speech Communication	3
BIOL 1307	General Microbiology	3
<b>Total Hours</b>		<b>32</b>

<sup>1</sup> Three hours of BIOL 2401 Human Anatomy & Physiology I counts toward the core curriculum and one hour of BIOL 2401 Human Anatomy & Physiology I counts toward the concentration.

## Master of Science in Human Sciences Degree Program Requirements

The Human Sciences program requires a minimum of 33 credit hours of course work and three credit hours of clinical practicum. Through the program, students will understand various mental health issues and acquire the necessary skills to work systematically with individuals, couples, and families.

### Required Courses

HUSC 5351	Family Theory and Issues	3
HUSC 5355	Human Development	3
HUSC 5332	Marriage and Family Therapy Pre-Practicum	3
HUSC 5356	Marriage and Family Therapy Practicum I	3
or HUSC 5369	Thesis	
HUSC 5358	Mental Health and Psychopathology	3
HUSC 5361	Victimization and Crisis Management	3
HUSC 5362	Counseling Diverse Populations	3
HUSC 5364	Clinical Assessment	3
HUSC 5368	Family Ethics and Issues	3
HUSC 5371	Group Therapy	3
HUSC 5374	Addiction and Family Intervention	3
HUSC 5334	Research Problems	3
<b>Total Hours</b>		<b>36</b>

## Master of Science in Natural Resources and Environmental Sciences Degree Program Requirements

The MS in Natural Resources and Environmental Sciences is comprised of 36 SCH with a thesis or non-thesis option.

### Required Courses

NRES 5101	Seminar	1
NRES 5202	Advanced Research Methods in NRES	2
NRES 5303	Research Statistics in NRES	3
NRES 5312	Resources and Environmental Policy	3
NRES 5323	Hydrologic Processes in Soils	3
NRES 5324	Advanced Watershed Management	3
<b>Option (Select one below)</b>		<b>21</b>
<b>Total Hours</b>		<b>36</b>

## Thesis Option

<b>Thesis</b>		<b>6</b>
NRES 6600	Thesis	
<b>Prescribed Electives</b>		<b>15</b>
Select five from below:		
AGEC 5321	Land Use and Resource Management	
AGRO 5366	Principles of Environmental Science and Management	

AGRO 5375	Soils, Ecology, and Land Uses	
AGRO 5379	Problems and Issues in Environmental Science	
NRES 5305	Advanced GIS and RS for Environmental Management	
NRES 5310	Economic Analysis of Natural Resource Management	
NRES 5311	Human Dimensions of Natural Resource Management	
NRES 5322	Environmental Hydrology	
NRES 5325	Advanced Groundwater Hydrology	
<b>Total Hours</b>		<b>21</b>

## Non-Thesis Option

<b>Prescribed Electives</b>		<b>21</b>
Select seven from below:		
AGEC 5321	Land Use and Resource Management	
AGRO 5366	Principles of Environmental Science and Management	
AGRO 5375	Soils, Ecology, and Land Uses	
AGRO 5379	Problems and Issues in Environmental Science	
NRES 5305	Advanced GIS and RS for Environmental Management	
NRES 5310	Economic Analysis of Natural Resource Management	
NRES 5311	Human Dimensions of Natural Resource Management	
NRES 5322	Environmental Hydrology	
NRES 5325	Advanced Groundwater Hydrology	
<b>Total Hours</b>		<b>21</b>

## Master of Science in Nutrition (Pending SACSCOC Approval)

### Dietetics Track, Non-Thesis

<b>Required Courses</b>		
NUTR 5302	Nutrition Informatics	3
NUTR 5310	Nutrition Assessment	3
NUTR 5312	Social and Cultural Influences on Nutrition	3
NUTR 5313	Nutrition & Metabolism I	3
NUTR 5315	Global Nutrition	3
NUTR 5633	Advanced Practicum in Dietetics <sup>1</sup>	6
NUTR 5633	Advanced Practicum in Dietetics <sup>1</sup>	6
<b>Prescribed Electives (Choose one from below)</b>		<b>3</b>
NUTR 5311	Nutrition and Public Health	
NUTR 5314	Nutritional Epidemiology	
NUTR 5301	Food and Nutrition Policy	
NUTR 5322	Nutrition Education & Counseling	
NUTR 5303	Biostatistics	
NUTR 5320	Food Nutrition & Communication	
<b>Total Hours</b>		<b>30</b>

<sup>1</sup> Course repeated twice for a total of 12 SCH

### Thesis Track

<b>Required Courses</b>		
NUTR 5300	Research Methods	3
NUTR 5302	Nutrition Informatics	3
NUTR 5303	Biostatistics	3
NUTR 5312	Social and Cultural Influences on Nutrition	3
NUTR 5313	Nutrition & Metabolism I	3
NUTR 5314	Nutritional Epidemiology	3

NUTR 5315	Global Nutrition	3
NUTR 6306	Thesis	3
NUTR 6306	Thesis	3
<b>Prescribed Electives (Choose one from below)</b>		<b>3</b>
NUTR 5100	Seminar in Nutrition	
NUTR 5301	Food and Nutrition Policy	
NUTR 5311	Nutrition and Public Health	
NUTR 5320	Food Nutrition & Communication	
NUTR 5322	Nutrition Education & Counseling	
NUTR 5323	Nutrition & Metabolism II	
<b>Total Hours</b>		<b>30</b>

**Non-Thesis Track****Required Courses**

NUTR 5302	Nutrition Informatics	3
NUTR 5303	Biostatistics	3
NUTR 5310	Nutrition Assessment	3
NUTR 5312	Social and Cultural Influences on Nutrition	3
NUTR 5313	Nutrition & Metabolism I	3
NUTR 5314	Nutritional Epidemiology	3
NUTR 5315	Global Nutrition	3
NUTR 5326	Capstone Project	3
NUTR 5326	Capstone Project	3

**Prescribed Electives (Choose three from below) 9**

NUTR 5100	Seminar in Nutrition	
NUTR 5301	Food and Nutrition Policy	
NUTR 5311	Nutrition and Public Health	
NUTR 5320	Food Nutrition & Communication	
NUTR 5322	Nutrition Education & Counseling	
NUTR 5323	Nutrition & Metabolism II	

**Total Hours 36****Graduate Certificate in Dietetics Requirements****The dietetic internship will not be accepting students for the 2023-2024 academic year.**

The Graduate Certificate in Dietetics is offered for individuals accepted for matriculation in the Dietetic Internship. The following courses are required as components of the certificate program:

HUSC 5632	Advanced Practice in Dietetics I	6
HUSC 5635	Advanced Practice in Dietetics II	6
HUSC 5335	Dietetic Seminar I	3
HUSC 5331	Dietetic Seminar II	3

The Dietetic Internship Program at Prairie View A&M University is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND), 120 South Riverside Plaza, Suite 2000, Chicago, Illinois 60606-6695; Telephone 800-877-1600 ext. 5400. Website <http://www.eatright.org>.

**BS Agriculture**

Core: <https://catalog.pvamu.edu/universitycorecurriculum/> (<https://catalog.pvamu.edu/universitycorecurriculum/>)

**Freshman**

<b>Fall - Semester 1</b>	<b>Hours</b>	<b>Spring - Semester 2</b>	<b>Hours</b>
Communication Core		3 Communication Core	3
Mathematics Core		3 Government/Political Science Core	3
AGRI 1331		3 POSC 2305	



AGRI 1319	3 Component Area Option One Core	3
AGRI 2317	3 Life and Physical Sciences Core	3
	Social and Behavioral Sciences Core	3
	AGRI 1370	3
<b>Total</b>	<b>15 Total</b>	<b>18</b>

**Total Hours: 33**

#### Sophomore

Fall - Semester 1	Hours	Spring - Semester 2	Hours
AGRI 1341		3 AGRI 2321	3
AGRI 2360		3 Government/Political Science Core	3
AGRI 2351		3 POSC 2306	
American History Core		3 Life and Physical Sciences Core	3
Creative Arts Core		3 American History Core	3
		Language, Philosophy, and Culture Core	3
		Component Area Option Two Core	3
<b>Total</b>		<b>15 Total</b>	<b>18</b>

**Total Hours: 33**

#### Junior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
AGEC 3322		3 AGRI 2354	3
AGRI 2363		3 Concentration Requirement	3
Concentration Requirement		3 Targeted Elective I	3
Concentration Requirement		3 Targeted Elective II	3
Concentration Requirement		3 Targeted Elective III	3
<b>Total</b>		<b>15 Total</b>	<b>15</b>

**Total Hours: 30**

#### Senior

Fall - Semester 1	Hours	Spring - Semester 2	Hours
AGHR 4341		3 Concentration Requirement	3
Concentration Requirement		3 Concentration Requirement	3
Concentration Requirement		3 Concentration Requirement	3
Concentration Requirement		3 Targeted Elective IV	3
<b>Total</b>		<b>12 Total</b>	<b>12</b>

**Total Hours: 24**

Name	Unit
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Total Semester Credit Hours: 120

## BS Dietetics Human Nutrition and Food

Core: <https://catalog.pvamu.edu/universitycorecurriculum/> (<https://catalog.pvamu.edu/universitycorecurriculum/>)

#### Freshman

Fall - Semester 1	Hours	Spring - Semester 2	Hours
Communication Core		3 Communication Core	3
ENGL 1301		ENGL 1302	
American History Core		3 American History Core	3
HIST 1301		HIST 1302	
HUNF 1322		3 Life and Physical Sciences Core	4
Mathematics Core		3 BIOL 2401	
MATH 1314		Life and Physical Sciences Core	3

Concentration Requirement	3	CHEM 1303	
		Concentration Requirement	3
<b>Total</b>	<b>15 Total</b>		<b>16</b>

**Total Hours: 31****Sophomore**

<b>Fall - Semester 1</b>	<b>Hours</b>	<b>Spring - Semester 2</b>	<b>Hours</b>
Government/Political Science Core		3 Government/Political Science Core	3
POSC 2305		POSC 2306	
Concentration Requirement		3 Concentration Requirement	3
HUNF 2353		3 Concentration Requirement	3
HUNF 2363		3 HUNF 2366	3
Concentration Requirement		3 Social and Behavioral Sciences Core	3
		SOCG 1301	
		HUNF 1130	1
<b>Total</b>	<b>15 Total</b>		<b>16</b>

**Total Hours: 31****Junior**

<b>Fall - Semester 1</b>	<b>Hours</b>	<b>Spring - Semester 2</b>	<b>Hours</b>
HUNF 3361		3 Concentration Requirement	3
HUNF 2365		3 Language, Philosophy, and Culture Core	3
HUNF 3365		3 Component Area Option Two Core	3
HUNF 3364		3 COMP 1300	
ECON 1301		3 HUNF 3360	3
		HUNF 3367	3
<b>Total</b>	<b>15 Total</b>		<b>15</b>

**Total Hours: 30****Senior**

<b>Fall - Semester 1</b>	<b>Hours</b>	<b>Spring - Semester 2</b>	<b>Hours</b>
HUNF 3363		3 Concentration Requirement	3
HUNF 4330		3 HUNF 4361	3
HUNF 4360		3 HUNF 4369	3
Concentration Requirement		3 Concentration Requirement	4
Creative Arts Core		3	
<b>Total</b>	<b>15 Total</b>		<b>13</b>

**Total Hours: 28**

<b>Name</b>	<b>Unit</b>
Total Semester Credit Hours: 120	

**Agriculture Minor Requirements**

Select 12 SCH lower-division courses plus 12 SCH upper-division courses in consultation with an advisor.

**Human, Nutrition and Food Minor Requirements**

HUNF 1322	Nutrition and Wellness	3
HUNF 2363	Food Service Systems	3
HUNF 2365	Food Principles and Meal Management	3
HUNF 2366	Food Systems Management	3
HUNF 3361	Nutrition Throughout the Lifecycle	3

HUNF 4369	Community Nutrition and Health	3
<b>Total Hours</b>		<b>18</b>

### Pre-Veterinarian Minor Requirements

Students pursuing a Bachelor of Science in Agriculture with a concentration in Animal and Food Sciences may choose to pursue the Pre-Veterinarian minor to meet additional requirements for Veterinary Medicine school.

BIOL 1308	Biology for Non-Science Major I	3
BIOL 1502	General Biology	5
BIOL 3404	Immunology	4
BIOL 4201	Medical Terminology	2
CHEM 2203	Organic Chemistry Lab I	2
CHEM 2204	Organic Chemistry Lab II	2
CHEM 4204	Biochemistry Laboratory	2
MATH 1342	Elementary Statistics	3
<b>Total Hours</b>		<b>23</b>

### MS Human Sciences

**First Year**

Fall - Semester 1	Hours	Spring - Semester 2	Hours
HUSC 5351		3 HUSC 5371	3
HUSC 5355		3 HUSC 5364	3
HUSC 5361		3 HUSC 5362	3
<b>Total</b>		<b>9 Total</b>	<b>9</b>

**Total Hours: 18**

**Second Year**

Fall - Semester 1	Hours	Spring - Semester 2	Hours
HUSC 5358		3 HUSC 5374	3
HUSC 5368		3 HUSC 5334	3
HUSC 5332		3 HUSC 5356	3
		or HUSC 5369	
<b>Total</b>		<b>9 Total</b>	<b>9</b>

**Total Hours: 18**

Name	Unit
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Total Semester Credit Hours: 36

### MS Natural Resources and Environmental Sciences

**First Year**

Fall - Semester 1	Hours	Spring - Semester 2	Hours
NRES 5101		1 NRES 5324	3
NRES 5202		2 Thesis or Non-Thesis Option	3
NRES 5303		3 Thesis or Non-Thesis Option	3
NRES 5312		3	
<b>Total</b>		<b>9 Total</b>	<b>9</b>

**Total Hours: 18**

**Second Year**

Fall - Semester 1	Hours	Spring - Semester 2	Hours
NRES 5323		3 Thesis or Non-Thesis Option	3
Thesis or Non- Thesis Option		3 Thesis or Non-Thesis Option	3

Thesis or Non-Thesis Option	3 Thesis or Non-Thesis Option	3
<b>Total</b>	<b>9 Total</b>	<b>9</b>

**Total Hours: 18**

Name	Unit
Total Semester Credit Hours: 36	

## Marketable Skills

Marketable skills, as defined by the Texas Higher Education Coordinating Board's 60x30TX Plan (<http://www.60x30tx.com/>), include interpersonal, cognitive, and applied skill areas, are valued by employers, and can be either primary or complementary to a major. Marketable skills are acquired by students through education, including curricular, co-curricular, and extracurricular activities.

## BS Agriculture

### *Degree Skills*

1. Problem analysis and resolution
2. Oral and written communication
3. Global/cultural fluency

### *Concentration Skills*

1. Business management
2. Scientific inquiry
3. Natural resource management

### *Co-curricular and Extracurricular Skills*

1. Leadership
2. Professionalism
3. Organizational skills

## BS Dietetics - Human Nutrition and Food

### *Degree Skills*

1. Health and wellness
2. Food service
3. Health coaching
4. Nutrition care process
5. Nutrition counseling and education
6. Food and nutrition management

### *Concentration Skills*

1. Critical thinking
2. Social and cultural competencies
3. Effective communication

### *Co-curricular and Extracurricular Skills*

1. Teamwork
2. Problem solving
3. Leadership

## MS Human Sciences

### *Degree Skills*

1. Knowledge of human behavior and mental health issues
2. Knowledge of theoretical models used in clinical settings

3. Knowledge of diagnosing, case formulation, and treatment planning
4. Ability to work with marginalized populations

**Concentration Skills**

1. Analytical thinking
2. Critical thinking
3. Problem solving
4. Communication
5. Self-awareness

**Co-curricular and Extracurricular Skills**

1. Effective communication
2. Active listening
3. Rapport building
4. Crisis management
5. Flexibility
6. Time management

## MS Natural Resources and Environmental Sciences

**Degree Skills**

1. Efficient and sustainable use of natural resources and the environment
2. Develop and implement solutions for a changing climate
3. Support low carbon and climate-resilient solutions

**Concentration Skills**

1. Quantitative and qualitative skills in managing natural resources and the environment
2. Broad and comprehensive knowledge-base in natural resources and the environment
3. Ability to address the needs of greener living

**Co-curricular and Extracurricular Skills**

1. Hands-on experience in dealing with unprecedented challenges
2. Comprehensive understanding of multi-disciplinary challenges
3. Understanding of technical and socio-economic dimensions of natural resource and environmental issues

## Agricultural Economics Courses

**AGEC 3321 Agricultural Policy: 3 semester hours.**

Study of the development of agricultural and food policies and evaluation of policies impact on producers and consumers in domestic and international markets.

Prerequisites: (AGRI 2321 or AGECE 2213) and (AGECE 3322 (may be taken concurrently) or AGECE 3223 (may be taken concurrently)).

**AGEC 3322 Agricultural Financial Analysis: 3 semester hours.**

Introduction to principles and concepts of finance. Financial statement analysis, risk and returns, time value of money, valuation concepts, capital budgeting, investments, and cost of capital.

Prerequisites: (AGECE 3321 (may be taken concurrently) or AGECE 3213 (may be taken concurrently)) and (MATH 1113 or MATH 1314).

**AGEC 3325 International Trade and Logistics: 3 semester hours.**

Development of basic competencies in international marketing of food and agricultural products. Focus will be on major markets, international competition, and the impacts of US trade policies and exchange rates on trade.

Prerequisites: (AGRI 2317 or AGECE 1233 or ECON 2113 or ECON 2302) and (MATH 1113 or MATH 1314).

**AGEC 3399 Independent Study: 1-3 semester hour.**

Reading, research and/or field work on selected topics.

**AGEC 4322 Agribusiness Management: 3 semester hours.**

Economic and business principles applied to the organization and operation of farms and ranches, and other agri-business industries.

Prerequisites: (AGRI 2317 or AGECE 1233 or ECON 2113 or ECON 2302) and (MATH 1113 or MATH 1314).

**AGEC 4323 Land and Resource Economics: 3 semester hours.**

Analysis of the economic, political, and institutional forces involved in the control and use of land and natural resources. Emphasis on land as a factor of production in agriculture.

Prerequisites: ((AGEC 2317 or AGECE 1233) or (ECON 2113 or ECON 2302)) and (MATH 1113 or MATH 1314).

**AGEC 4325 Agricultural Prices: 3 semester hours.**

Theories and principles fundamental to the pricing of agriculture commodities. Special emphasis will be placed on marketing conditions affecting price levels. Price and income parity, seasonal and cyclical price variations and futures trading. Prerequisites: senior classification or approval of instructor.

Prerequisites: ((AGEC 1233 or AGRI 2317) or (ECON 2113 or ECON 2302)) and (MATH 1113 or MATH 1314).

**AGEC 4399 Independent Study: 1-3 semester hour.**

Readings, research and/or field work on selected topics.

**AGEC 5321 Land Use and Resource Management: 3 semester hours.**

Nature and the economic dimensions of private and public control of land. Use of natural resources, including land, stock and flow resource concepts; time and space as they affect resource utilization and benefits. Laboratory studies of field problems in resource management and use.

## Agricultural Engineering Courses

**AGEG 4342 Farm Drainage: 3 semester hours.**

Land drainage: terracing, gully control, irrigation, and land reclamation.

## Ag and Human Resources Courses

**AGHR 3379 Cooperative Occupational Experience in Agriculture: 3 semester hours.**

Pre-baccalaureate work experience in the food and agriculture sciences commensurate with the student's academic emphasis. Written report of activities consistent with program guidelines upon completion of experience. A minimum of 100 clock hours of supervised work activities is required.

**AGHR 3699 Cooperative Occupational Experience in Agriculture: 6 semester hours.**

Pre-baccalaureate work experience in the food and agricultural sciences commensurate with the student's academic emphasis. Written report of activities consistent with program guidelines upon completion of experience. A minimum of 200 clock hours of supervised work activities are required.

**AGHR 4341 Special Topics: 3 semester hours.**

Study of a problem affecting some aspect of the food and agricultural science industry. Reports, discussion and major paper required. Repeatable for up to 6 semester credit hours.

**AGHR 4399 Independent Study: 3 semester hours.**

Readings, research and/or field work on selected topics. Prerequisite: Advisor consent.

## Agriculture Courses

**AGRI 1301 Natural Resource Conservation Management: 3 semester hours.**

Ecological approach to basic conservation principles, concepts and techniques underlying the management and uses of natural resources that is both efficient and sustainable.

Prerequisites: (AGRI 1370 or AGRO 1703) and (AGRO 2633 or AGRI 2363).

**AGRI 1311 Dairy Science: 3 semester hours.**

Branches of the dairy industry, introduction to dairy types and breeds, the major factors in the management of cattle for milk production, and the common dairy processes.

Prerequisites: AGRI 1319 or ANSC 1513.

**AGRI 1319 General Animal Science: 3 semester hours.**

Introductory course dealing with domestic farm animals common in the United States. Selection, reproduction, nutrition, management and marketing of beef cattle, swine, sheep, goats, and horses.

**AGRI 1327 Poultry Science: 3 semester hours.**

Knowledge of the history and development of the poultry industry; the anatomy and physiology of the domestic fowl, especially related to reproduction. Inferences of genetic, environmental and behavioral factors on embryonic development; effects of diet, drugs and toxins. Practices involve artificial incubation, breeding and rearing.

Prerequisites: (AGRI 1319 or ANSC 1513) and (AGRI 2351 (may be taken concurrently) or ANSC 2513) and (AGRI 1311 (may be taken concurrently) or ANSC 2533).

**AGRI 1330 Land Grant System and Global Food Security: 3 semester hours.**

This course is designed to educate students about the land grant mission, created by the Morrill Act passed by Congress in 1862 and 1890. Areas related to science technology in Global Food Security and Sustainable Food program will be emphasized. Students will actively participate in peer workshops to demonstrate critical thinking skills gained through programs.

**AGRI 1331 Agricultural Science and Technology: 3 semester hours.**

Introduction to professions in agricultural sciences and technology. Importance of agriculture in the state, nation and world. Review of research developments; explorations of career and other opportunities and development of human resource skills needed in agriculture.

**AGRI 1341 Fundamentals of Agricultural Engineering: 3 semester hours.**

Introduction to the major areas of agricultural engineering with emphasis on solving practical problems in agricultural production systems, grain systems, food systems, and hydrology. Course includes hands on work.

**AGRI 1370 Crop Science: 3 semester hours.**

Botanical characteristics of agronomic and horticultural plants; relationship between crops and civilization in both historical and biological terms; nature of crop plants in relation to structure, physiology, environment, growth and development; crop improvement, cropping systems and practices, crop hazards and prevention.

**AGRI 2317 Fundamentals of Agricultural Economics: 3 semester hours.**

Survey of the nature, organization, and operation of the agricultural industry: application of economic principles to production and to the marketing of farm-ranch food and fiber products: and investigation of institutions and government as they affect agriculture.

**AGRI 2321 Marketing Agricultural Products: 3 semester hours.**

Study of movement of food and fiber products from the production area to the final consumer. Focus on intermediaries, including transportation agents. Efficiency of performing marketing activities under conditions for perfect and imperfect markets will be emphasized.

Prerequisites: (AGRI 2317 or AGECE 1233) and (AGRI 2322 (may be taken concurrently) or AGECE 2223 (may be taken concurrently)).

**AGRI 2322 Food Distribution Systems: 3 semester hours.**

Study of the nature and functions of the various components of wholesale and retail food distribution. Facility locations, transportation, warehousing, quality control, inventory control, pricing, and other related topics.

Prerequisites: (AGECE 1233 or AGRI 2317) and (AGECE 2213 or AGRI 2321).

**AGRI 2342 Agricultural Machinery: 3 semester hours.**

Identification of agricultural machines and equipment; accessories, attachments, and components of agricultural tractors; inspections, adjustments, and maintenance services; and career opportunities.

**AGRI 2351 Animal Production and Marketing: 3 semester hours.**

Systematic study of methods of breeding, feeding, marketing, sanitation and management of commercial animals (swine, beef and dairy cattle, horses, goats and sheep).

Prerequisites: (AGRI 1319 or ANSC 1513) and (AGRI 1327 (may be taken concurrently) or ANSC 2523) and (AGRI 1311 (may be taken concurrently) or ANSC 2533).

**AGRI 2354 Diseases and Sanitation: 3 semester hours.**

Clinical studies of the most common livestock diseases embracing anamnesis, etiology, symptoms, diagnosis, therapeutics, and prophylaxis.

Prerequisites: (AGRI 1319 or ANSC 1513) and (AGRI 2351 (may be taken concurrently) or ANSC 2513) and (AGRI 1311 (may be taken concurrently) or ANSC 2533).

**AGRI 2360 Environmental Soil Science: 3 semester hours.**

An introduction to soils, its components and its relationship the environment. The importance of soils to man, animals and plants. Import physical properties, role of soil constituents; origin, nature, and classification of parent materials; soil genesis, classification and survey; soil fertility and chemical properties; soils and chemical pollution; soils and the world's food supplements.

**AGRI 2363 Forage and Pasture Management: 3 semester hours.**

Use of forage in grassland agriculture, identification of forage grasses and legumes, cultural practices including weed control, mechanization of forage harvesting and storage; types of pastures, different systems of grazing management and utilization of forages by farm animals.

Prerequisites: AGRI 1370 or AGRO 1703.

**AGRI 2373 Principles of Crop Production: 3 semester hours.**

Crop characteristics and classifications, growth patterns, soil and climate requirements (Physiology), pest control, storage, distribution, and application of these principles to the management and production of field and vegetable crops for improved food, fiber, and forages.

Prerequisites: AGRI 1370 or AGRO 1703.

## Agronomy Courses

**AGRO 3362 Soil Morphology and Classification: 3 semester hours.**

The shape and source of soil features materials and processes involved in or produced after the formation of soil with emphasis on variations world-wide and the principles of soil classification, mapping, and interpretation. Additional topics include: soil taxonomy; land capability classification; soil survey and its utilization; and soil interpretations for non-farm uses.

Prerequisites: AGRO 2603 or AGRO 2360 and (AGRO 3633 (may be taken concurrently) or AGRO 3363 (may be taken concurrently)) and (AGRO 3371 (may be taken concurrently) or AGRO 3713 (may be taken concurrently)).

**AGRO 3363 Soil Fertility and Fertilizers: 3 semester hours.**

Chemical, biological and physical processes as they influence soil fertility, manufacture of fertilizers and their reactions with soils and the oil-plant-water system.

Prerequisites: AGRO 2603 or AGRO 2360 and (AGRO 3623 (may be taken concurrently) or AGRO 3362 (may be taken concurrently)) and (AGRO 3713 (may be taken concurrently) or AGRO 3371 (may be taken concurrently)).

**AGRO 3364 Soil and Water Management: 3 semester hours.**

Sustainable soil productivity and management in agricultural systems involving resource inputs, tillage systems, erosion control, residue management, and water management for a quality environment.

Prerequisites: (AGRI 2360 or AGRO 2603) and (AGRO 3373 (may be taken concurrently) or AGRO 3733).

**AGRO 3371 Gen Entomology: 3 semester hours.**

Insect morphology, life histories, characteristics and habits of beneficial and harmful insects and their impact on agricultural production and the environment; anatomy and physiological growth and metamorphosis, insect orders, ecological aspects and insect behavior, control of harmful insects.

Prerequisites: AGRO 1703 or AGRI 1370.

**AGRO 3373 Plant Pathology: 3 semester hours.**

Fundamental principles of plant pathology, including parasites and disease development, identification of major agronomic diseases and their biotic and abiotic causes; proper diagnosis of plant diseases, differentiation between signs and symptoms, isolation of pathogens in pure culture; environmental effects on development of infectious plant diseases; control of plant diseases.

Prerequisites: AGRI 1370 or AGRO 1703.

**AGRO 3399 Independent Study: 1-3 semester hour.**

Readings, research and/or field work on selected topics.

**AGRO 4361 Soil Microbiology: 3 semester hours.**

Role of soil microorganisms in soil-plant ecosystems. Microbial ecology, microbes in nutrient cycles important to agriculture, pesticide degradation, bacterial fertilizers, composting, waste disposal, plant microbe interactions. Laboratory estimation of soil microbial populations and measurement of important biological processes in soil and current methods.

Prerequisites: AGRO 3362 or AGRO 3623 and (AGRO 3363 or AGRO 3633) and (AGRO 3364 or AGRO 3643).

**AGRO 4362 Environmental Science: 3 semester hours.**

Physical, chemical, biological and agricultural components of the environment and their interactions and effects on pollution and the maintenance and utilization of varied environmental systems.

Prerequisites: AGRO 2360 or AGRO 2603 and (AGRI 1301 or AGRO 2613).

**AGRO 4399 Independent Study: 1-3 semester hour.**

Readings, research and/or field work on selected topics.

**AGRO 5366 Principles of Environmental Science and Management: 3 semester hours.**

Discussion, study and analysis of the methods of monitoring, assessing, and designing remedies for environmental pollution, including the physical, chemical and biological components utilized in maintaining and improving the capacity of varied environmental characteristics as related to agricultural production.

**AGRO 5375 Soils, Ecology, and Land Uses: 3 semester hours.**

Soils and their properties as planned related to landscape ecology and specific land uses will be examined on a global, regional, and local level. An ecosystem approach will be used to examine issues and current problems associated with ecology and land use practices in agricultural systems, rangelands, forests, and wetlands. Also, ethical and philosophical points will be considered based on different soils, ecology, and land use viewpoints.

**AGRO 5379 Problems and Issues in Environmental Science: 3 semester hours.**

Identification and analysis of current trends and issues in environmental science. Evaluation of pending legislation, federal agency regulations and state and local policy applications. Reports; discussions; projects.

## Animal Science Courses

**ANSC 2255 Poultry Tech & Marketing: 2 semester hours.**

Factors affecting the physical, chemical, microbiological and functional characteristics of poultry and egg products. Product development, processing, quality packaging, and quality control concepts.

Prerequisites: ANSC 1513.

**ANSC 3350 Animal Nutrition: 3 semester hours.**

Composition and digestibility of feed, with physiology, preparation, feeding standards, calculation and balancing rations for commercial animal (swine, cattle-beef and dairy, sheep, goats, and horses).

Prerequisites: ANSC 1513.

**ANSC 3351 Anatomy and Physiology: 3 semester hours.**

Comparative approach, anatomically and physiologically of the basic systems of the domestic animals.

**ANSC 3352 Meat Science: 3 semester hours.**

Methods of slaughtering farm animals, processing, curing preservation and storage of meats and products.

Prerequisites: ANSC 1513 or AGRI 1319.

**ANSC 3399 Independent Study: 3 semester hours.**

Readings, research and/or field work on selected topics.



**ANSC 3451 Anatomy and Physiology: 4 semester hours.**

Comparative approach, anatomically and physiologically of the basic systems of domestic animals.

Prerequisites: AGRI 1319 or ANSC 1513.

**ANSC 3699 Independent Study: 1-6 semester hour.**

Readings, research and/or field work on selected topics.

**ANSC 4353 Breeding/Genetics: 3 semester hours.**

Physiology of reproduction, breeding, breeding systems and practices. Application of genetic principles to the problems of animal breeding. Prerequisite: Junior standing.

Prerequisites: ANSC 1513 and ANSC 2513.

**ANSC 4399 Independent Study: 3 semester hours.**

Readings, research and/or field work on selected topics.

**ANSC 4499 Independent Study: 1-4 semester hour.**

Readings, Research and/or field work on selected topics.

## Food Science Courses

**FDSC 3358 Food Quality Assurance and Sanitation: 3 semester hours.**

Examination of the elements of a comprehensive quality assurance program. Areas of study include sanitation, pest control, waste disposal, food law regulations, sensory testing, panel selection and training, and experimental design and analysis of data.

**FDSC 3359 Food Bacteriology: 3 semester hours.**

Microbiology of human foods and accessory substances. Raw and processed foods, physical, chemical and biological phases of spoilage. Standard industry techniques of inspection and control.

**FDSC 4357 Food Processing and Engineering: 3 semester hours.**

Study of the principles and practices of thermal processing, quick freezing, dehydration, fluid flows, heat transfer, pickling and juice manufacture.

## Human Development Family Courses

**HDFM 2351 Childhood Disorders: 3 semester hours.**

This course is designed to introduce a general overview and treatment of major childhood disorders. It examines the history of childhood psychopathology, theories of development, medical and biological factors, mental retardation, drug and alcohol use, social and environment factors that relate to childhood problems.

**HDFM 2353 The Contemporary Family in Cross-Cultural Perspective: 3 semester hours.**

Analysis of family interaction patterns, roles, and functions, throughout the life cycle as influenced by customs, cultural diversity, and socioeconomic status with implications for broader understanding of a multicultural society. Examination of public policies and procedures impacting family functioning.

**HDFM 2355 Human Development: Life Span: 3 semester hours.**

The dynamic processes of co-development of the individual from conception to senescence in physical, sensory, intellectual, emotional, and social development, Pattern of self-development with focus on the interaction between and among individuals.

**HDFM 3350 Early Childhood Environments: 3 semester hours.**

Study and analysis of varied environments for children. Guidelines for program planning, identification and selection of creative and expressive materials and equipment, staffing, organization and management, record keeping, licensing requirements, parent/child/teacher interactions, and effective guidance techniques. Observation, participation and assessment required.

**HDFM 3351 Individual and Family Counseling Strategies: 3 semester hours.**

Study, assessment and application of basic interviewing and counseling strategies to include varied interviewing models, techniques and methods which facilitate individual and family interactions.

**HDFM 3352 Parenting Issues and Education: 3 semester hours.**

Principles and patterns, philosophies and theories, methodologies and practices, and resources for the design, implementation, and evaluation of programs for enhancing parenting skills in the parent-child relationship.

## Human Nutrition Food Courses

**HUNF 1130 Introduction to Dietetics: 1 semester hour.**

Students will be introduced to the profession of dietetics. The history of dietetics, career options, professional development (dietetics portfolio), the Academy code of ethics, standards of practice, the legislative process, and professional resources will be discussed.

**HUNF 1322 Nutrition and Wellness: 3 semester hours.**

Introduction to human nutrition and food. Study of human nutritional needs and problems encountered in providing food for the satisfaction of physiological and socio-cultural system needs, and the significance of these interrelationships to health. Discussion of current nutritional issues.

**HUNF 2353 Intermediate Nutrition: 3 semester hours.**

Introductory study of the principles of nutrition and the application of these principles to providing adequate nutrition to humans. Introduction to the biochemical and physiological approach to nutrition will be emphasized.

Prerequisites: HUSC 1322 or HUSC 1343.

**HUNF 2363 Food Service Systems: 3 semester hours.**

Study of the layout and design, equipment selection, and specifications of Food Service organizations, with emphasis on safety, sanitation, labor and financial control and consumer distribution.

**HUNF 2365 Food Principles and Meal Management: 3 semester hours.**

Principles of preparation, organization, and management applied to planning, preparation, serving, and marketing nutritious meals to individuals and groups at varied socioeconomic levels. Management of work areas, organization techniques, and standards for meal service and table appointments.

Prerequisites: HUSC 1322 or HUSC 1343.

**HUNF 2366 Food Systems Management: 3 semester hours.**

Management principles, process and control strategies, roles and responsibilities in food service systems. Application of food preparation and management principles to quantity food production including menu planning, procurement, storage and distribution.

**HUNF 3360 Nutritional Biochemistry: 3 semester hours.**

A study of the biochemical basis of nutrition, the physiochemical properties of nutrients, and other essential biochemical and their roles in physiological and metabolic processes.

Prerequisites: HUNF 2533.

**HUNF 3361 Nutrition Throughout the Lifecycle: 3 semester hours.**

Comparative assessment evaluation of nutrition and dietary requirements throughout the lifecycle. Pre-pregnancy, pregnancy, lactation, infancy, childhood, adolescence, adulthood, and aging. Nutritional needs on the basis of both physical growth and psychological development are emphasized.

Prerequisites: HUSC 1322 or HUSC 1343.

**HUNF 3362 Food Science and Technology: 3 semester hours.**

Principles and techniques of food processing and preservation and their effects on nutrient retention. Food and drug regulations, food additives and standards of identity.

Prerequisites: CHEM 2303 or CHEM 2033 and (CHEM 2203 or CHEM 2032) and (HUNF 2365 or HUNF 2653).

**HUNF 3363 Advanced Nutrition: 3 semester hours.**

A review of the fundamentals of human nutrition. Course provides a comprehensive study of the structure and functions of carbohydrates, fats, proteins, vitamins and minerals in metabolism, and how these nutrients are used in the prevention of diseases.

Prerequisites: HUNF 2353 or HUNF 2533.

**HUNF 3364 Food and Culture: 3 semester hours.**

Food and Culture explores the connections between what we eat and who we are through a cross-cultural study of how personal and social identities are formed via food production, preparation, and consumption.

Prerequisites: HUNF 1301 or HUNF 1130.

**HUNF 3365 Nutrition and Disease: 3 semester hours.**

Study of the physiological and metabolic anomalies in chronic and acute diseases, and principles of nutritional therapy and prevention. Computer assisted nutritional assessment and diet calculations.

Prerequisites: HUNF 2353 or HUNF 2533.

**HUNF 3367 Nutritional Assessment: 3 semester hours.**

The course provides an in-depth to the purpose, concepts, methods, and scientific basis for assessment of nutritional status for individuals and groups. Students will have the opportunity to apply nutritional assessment principles and methods discussed in class in a supervised setting.

Prerequisites: HUNF 2533 and MATH 1113.

**HUNF 3399 Independent Study: 3 semester hours.**

Readings, research and/or field work on selected topics.

**HUNF 4330 Human Nutrition and Food Practicum: 3 semester hours.**

Planned observation and entry-level work experience in selected clinical, hospital, business, industrial, educational or governmental settings in Nutrition, Food Science, Foods, Dietetics or Nutrition Research. Required field experience includes a minimum of 200 clock hours of supervised work activities.

**HUNF 4347 Nutrition Counseling: 3 semester hours.**

This course is a directed study in theories, behavior change models, nutrition counseling, ADA Scope of Dietetics Practice Framework, the Standards of Professional Performance, the Code of Ethics of Dietetics, interdisciplinary relationships, and current issues in Human Nutrition.

Prerequisites: HUNF 3365 or HUNF 3653 and (HUNF 4366 or HUNF 4663).

**HUNF 4360 Physiochemical Aspects of Food: 3 semester hours.**

This course covers physical and chemical factors accounting for color, flavor, and texture of natural and processed foods. Laboratory experiments to illustrate the effects of varying ingredients and treatment on the quality of food products. Objective and Sensory testing to determine food quality characteristics will be conducted.

Prerequisites: HUNF 3362 or HUNF 3623.

***HUNF 4361 Research in Nutrition: 3 semester hours.***

Investigate special topics in nutrition. Research methodology and computer application including statistical analysis. Proposals prepared by students and presented to instructor for approval. Students work independently, seeking guidance as necessary.

Prerequisites: MATH 1342 or MATH 2003.

***HUNF 4366 Medical Nutrition Therapy I: 3 semester hours.***

Focus will be on Nutrition Care Process in Nutritional Screening Assessment, and Diagnosis of Metabolic, Cardiovascular and infectious disease states. Emphasis will be on medical terminology, clinical, anthropometric and nutritional data analysis, documentation, and provision of care.

Prerequisites: (HUNF 3361 or HUNF 3613) and (HUNF 3365 or HUNF 3653).

***HUNF 4367 Medical Nutrition Therapy II: 3 semester hours.***

Focus will be on Nutrition Care Process (NCP) in the treatment of metabolic, cardiovascular and infectious disease states.

Prerequisites: HUNF 4366 or HUNF 4663.

***HUNF 4369 Community Nutrition and Health: 3 semester hours.***

Study of human nutrition and health problems from a community perspective; programs and policies related to nutrition at local, state and federal levels; approaches and techniques of effective application and dissemination of nutrition knowledge in communities.

Prerequisites: HUSC 1322 or HUSC 1343 and (HUNF 3361 or HUNF 3613).

***HUNF 4399 Independent Study: 3 semester hours.***

Readings, research and/or field work on selected topics.

## Human Science Courses

***HUSC 1135 Human Sciences Perspectives: 1 semester hour.***

The history and development of home economics as family, consumer and human sciences. Preparation, competencies and enrichment in the broad spectrum of human science professions; career development and career alternatives; interaction techniques for development of satisfying interpersonal skills.

***HUSC 1322 Ecology of Human Nutrition and Food: 3 semester hours.***

Introduction to human nutrition and food. Study of human nutritional needs and problems encountered in providing food for the satisfaction of physiological and socio-cultural systems needs, and the significance of these interrelationships to health. Discussion of current nutritional issues.

***HUSC 3332 Program Planning II: 3 semester hours.***

Analysis of the application of multiple strategies appropriate for delivering human science concepts to varied audiences utilizing multifaceted mediums. Includes examination and use of media, materials, supplies, equipment, and procedures for management, motivation and evaluation techniques.

***HUSC 3337 Child Development: 3 semester hours.***

Study and analysis of individual development and behavior during the early school years to adolescence with emphasis on physical, cognitive, social, language, and emotional areas. Examination of developmental and learning theories, principles of normal and atypical development and varied guidance techniques. Observation, recording and evaluation of behaviors required.

***HUSC 3399 Independent Study: 3 semester hours.***

Readings, research and/or field work on selected topics.

***HUSC 4399 Independent Study: 3 semester hours.***

Readings, research, and/or field work on selected topics.

***HUSC 4430 Family Consumer Economics and Management: 4 semester hours.***

A systems approach to family resource management through theory analysis and exploration of varying family structure, styles, and conditions. Simulated laboratory in group living required. Laboratory fee required.

***HUSC 4630 Human Sciences Internship: 6 semester hours.***

Planned program of observation and entry-level work experience in selected business or industrial firms, educational or governmental agencies/organizations in the food, agricultural and/or human sciences.

***HUSC 5331 Dietetic Seminar II: 3 semester hours.***

Continuation of Dietetic Seminar I. Study of current research and legislative events in nutrition and dietetics as they relate to the health and wellness of individuals and families.

***HUSC 5332 Marriage and Family Therapy Pre-Practicum: 3 semester hours.***

Experimental application of varied therapeutic techniques, i.e. lecture, role play, small group and self-exploration as applied by the therapist in a variety of therapeutic settings.

Prerequisites: HUSC 5375 or HUSC 5753.

***HUSC 5334 Research Problems: 3 semester hours.***

Study of research methods, strategies and techniques application to the social and behavioral sciences with focus on individual and family studies and the role of research in professional and therapeutic services. Critical comparative analysis of the strengths and weaknesses of current research studies and the planning for needed research. Proposal writing required.

***HUSC 5335 Dietetic Seminar I: 3 semester hours.***

Study of the delivery of nutritional services for individuals, families and institutions. Major emphasis on the current development in nutrition and dietetics. Reading, discussion and reports and presentations focusing on the professional practice of dietetics.

***HUSC 5351 Family Theory and Issues: 3 semester hours.***

A comprehensive review of theoretical-conceptual frameworks and research in family studies. Role of theory and research in the interdisciplinary study of individual and family behavior throughout the life cycle.

***HUSC 5355 Human Development: 3 semester hours.***

Study of multiple psycho biosocial characteristics of human development and behavior throughout the lifespan. Examination, evaluation and interpretation of developmental theories and current issues and trends.

***HUSC 5356 Marriage and Family Therapy Practicum I: 3 semester hours.***

Supervised clinical practicum in marriage and family therapy. Therapeutic sessions with a variety of client issues and the utilization of major therapeutic techniques required. 100 clock hours of supervised field placement required.

Prerequisites: (HUSC 5339 or HUSC 5393) and (HUSC 5351 or HUSC 5533) and (HUSC 5354 or HUSC 5543) and (HUSC 5355 or HUSC 5553).

***HUSC 5358 Mental Health and Psychopathology: 3 semester hours.***

Exploration of healthy personality and functional coping in personal/social context. Review and study of various models of psychopathology including DSM and organic disease in the mental health setting. Roles and characteristics of the therapist in the supervision of trainees in varied clinical settings.

Prerequisites: HUSC 5355 or HUSC 5553.

***HUSC 5361 Victimization and Crisis Management: 3 semester hours.***

This course explores forms of victimization and crisis management in a clinical setting, with an emphasis on demonstrating diagnostic competence, treatment plan development, and effective and appropriate therapeutic techniques.

***HUSC 5362 Counseling Diverse Populations: 3 semester hours.***

An experiential course exploring areas of cultural diversity relevant to gender, ethnicity, sexual identity, and other diversities in a therapeutic practice, with an emphasis on developing cultural competence, sensitivity and awareness to diversity. Other dimensions of diversity will be covered.

***HUSC 5364 Clinical Assessment: 3 semester hours.***

Course provides fundamental assessment principles focused on test and non-test appraisal instruments and development of diagnostic skills. Course includes selection, execution and interpretation of instruments appropriate for individual, couple, and family appraisal. Clinical documentation skills are developed.

***HUSC 5368 Family Ethics and Issues: 3 semester hours.***

Critical review of current literature on family ethics: principle problems of confidentiality, therapist and client relationships; special consideration given to state and federal law.

***HUSC 5369 Thesis: 3 semester hours.***

Independent and original research leading to an acceptable master's thesis prospectus prepared under the direction of a faculty thesis committee and must be orally defended and approved by all members of the faculty thesis committee before credit is recorded. The student must be registered for Thesis until satisfactorily completed.

Prerequisites: HUSC 5393 or HUSC 5339 and (HUSC 5543 or HUSC 5354) and (HUSC 5553 or HUSC 5355).

***HUSC 5370 Special Topics: 3 semester hours.***

Directed individual study of issues affecting implementation of knowledge and skills in human sciences disciplinary specializations. Topical areas may include, but are not limited to: individual and family development; housing studies; family/consumer resource management; family and community studies; food and nutrition studies; adult development; clothing/apparel and textile studies; family and consumer sciences education; and individual and family and other related therapeutic services. Victims and Victimization. An exploration into the dynamics of the victimization process and services available for victims. Focusing on the expected results of experiencing traumas of nature and man, including the characteristics of victims and offenders of criminal acts.

***HUSC 5371 Group Therapy: 3 semester hours.***

Comprehensive study of methods, processes and strategies utilized in group therapy with individuals throughout the life span. Focus on the roles of client and therapist within varied settings for practical application of group therapy approaches.

***HUSC 5374 Addiction and Family Intervention: 3 semester hours.***

Analysis of the psychodynamics of addictions as they relate to individual, family and community from a family systems perspective. Comparison of major theories and treatment modalities as viewed from ethical, multicultural and legal perspectives.

***HUSC 5399 Independent Study: 3 semester hours.***

Readings, research, and/ or field placement focusing on pre-selected issues.

***HUSC 5632 Advanced Practice in Dietetics I: 6 semester hours.***

Preplanned experience at the professional level in dietetic administration, food service management, clinical and therapeutic nutrition and community and public health nutrition.

**HUSC 5634 Marriage and Family Therapy Practicum II: 6 semester hours.**

Supervises clinical practicum in marriage and family therapy. Therapeutic sessions with a variety of client issues and the utilization of major therapeutic techniques required. 200 clock hours of supervised field placement required.

Prerequisites: HUSC 5356 or HUSC 5563.

**HUSC 5635 Advanced Practice in Dietetics II: 6 semester hours.**

Continuation of Advanced Practice in Dietetics I.

**HUSC 5699 Independent Study: 1-6 semester hour.**

Readings, research, and/or field placement focusing on pre-selected issues.

## Natural Resources and Environmental Sciences Courses

**NRES 5101 Seminar: 1 semester hour.**

Two presentations to be made during the semester; the first presentation will be at the beginning of the semester stating the proposal for master's thesis/ internship and second will be at the end of the semester to state accomplishment.

**NRES 5202 Advanced Research Methods in NRES: 2 semester hours.**

Literature review, understand the research methods, learn to write proposals, data collection (including in-situ), data analysis and methods, presenting results, learn to present (oral and poster) through a project work, writing report.

**NRES 5303 Research Statistics in NRES: 3 semester hours.**

Analysis of variance, regression, multivariate analysis, multivariate data, visualization, principal components analysis, multidimensional scaling, factor analysis, cluster analysis, confirmatory factor analysis and structural equation models by statistical computer packages.

Prerequisites: MGMT 3301 or MGMT 3013.

**NRES 5305 Advanced GIS and RS for Environmental Management: 3 semester hours.**

Advanced GIS and RS components for natural resources and environmental management such as landscape and water resources management.

It covers to create, store, manage, query, present and view spatial and non-spatial natural resources and environmental datasets. It includes how accurately and precisely natural resources can be mapped and measured from satellite remote sensing using remote sensing GIS and RS tools. It also includes collecting satellite image, spatial data, to learn its application in industries such as emergency response, meteorology, water resources, land use, agriculture, forest, and urban planning.

Prerequisites: GEOG 2311 or GEOG 2113.

**NRES 5310 Economic Analysis of Natural Resource Management: 3 semester hours.**

This course focuses on developing an understanding of an economic framework (economic concepts, tools, and techniques) for assessing natural resource management projects, application of the framework to the management of various natural resources.

**NRES 5311 Human Dimensions of Natural Resource Management: 3 semester hours.**

Human - environment interactions; environmental justice; human values, beliefs, and attitudes regarding the environment; communication and behavior change strategies; landscape perception and attitudes; resource-dependent communities; public involvement; conflict management; and future issues.

**NRES 5312 Resources and Environmental Policy: 3 semester hours.**

This course focuses on exploration of institutional and policy dimensions of natural resource development, management, allocation, markets and pricing, focusing on their environmental impacts. Emphasis on policy analysis using case studies and empirical findings.

**NRES 5322 Environmental Hydrology: 3 semester hours.**

Hydrologic cycle, water resources, and society; hydrologic processes; hydrological effects of climatic change; stream processes; open channel flow, hydraulic control structures; soil conservation and sediment budgets; hydrology of forests and wetlands; hydrogeology; human impacts on water resources; fundamentals of remote sensing and GIS for hydrologic application; practical exercises on conducting and reporting hydrologic studies.

Prerequisites: AGRO 4362.

**NRES 5323 Hydrologic Processes in Soils: 3 semester hours.**

An overview of the basics of soil physical properties, hydrologic processes in soil including water flow, solute movement, and gaseous transport in the variably saturated (saturated/unsaturated) zones, analyze and estimate soil hydraulic properties using public domain packages (RETC and Rosetta), practical and theoretical exercises using HYDRUS-1D.

Prerequisites: AGRO 3364.

**NRES 5324 Advanced Watershed Management: 3 semester hours.**

Hydrologic cycle, watershed characteristics, precipitation and interception, evapotranspiration, soil water storage, infiltration, runoff process, soil properties, hydrologic methods, wetlands hydrology and management, riparian area management, erosion, tropical watershed management, socioeconomic considerations in watershed management, water quality, and watershed planning and protection. Hand on experience in data handling, presentation, and analysis. Gain experience in critiquing research work and publications.

Prerequisites: NRES 5323.

**NRES 5325 Advanced Groundwater Hydrology: 3 semester hours.**

Overview of groundwater flow and analytical water flow solutions; theory and practice of groundwater modeling; basic concepts and governing equations of fluid flow in porous media; computational algorithms of solving the equations; model construction, simulation, and calibration using state-of-the-art modeling tools; theory of solute transport and modeling; modeling report, archive, and review; beyond basic modeling concepts.

Prerequisites: NRES 5323.

**NRES 6600 Thesis: 6 semester hours.**

Independent research work on a specific area in Natural Resources Environmental Sciences under the supervision of a thesis advisor. All course work toward the degree must be completed.

Prerequisites: NRES 5324 and NRES 5325.

## Nutrition Courses

**NUTR 5100 Seminar in Nutrition: 1 semester hour.**

This course will place a major emphasis on the current development in nutrition and dietetics. Reading, discussion, reports, case studies and presentations focusing on the professional practice of nutrition and dietetics. Critical thinking activities related to research seminars in human nutrition.

**NUTR 5300 Research Methods: 3 semester hours.**

This course will teach students how to develop, implement and analyze nutrition and public health research, in order to increase their skills as dietitians/nutritionists, and public health scientists.

Prerequisites: MATH 2003 or MATH 1342 or HUNF 4613 or HUNF 4361.

**NUTR 5301 Food and Nutrition Policy: 3 semester hours.**

This class will investigate and discuss the roles and interests of federal agencies, state agencies, private/public organizations, and the media relevant to U.S. food and nutrition policy. A comparison and contrast of international perspectives on food and nutrition policies and programs used to support global nutrition and health promotion will be examined. Topics covered will include discussions on healthy diet, healthy food environments, food security, sustainable food systems, and food deserts. Emphasis will be given to the contexts in which policies are developed, interaction of stakeholders, translation of policies into programs, the intended and unintended nutritional impacts, and an assessment of forces hindering or helping the policy implementation.

**NUTR 5302 Nutrition Informatics: 3 semester hours.**

This course examines how the implementation of electronic health record (EHR) and health information technology (HIT) transformed nutrition delivery documentation, follow up and evaluation. Nutrition Informatics covers the retrieval, organization, storage and use of data for food and nutrition problems and decision making.

**NUTR 5303 Biostatistics: 3 semester hours.**

This course teaches the statistical methods and principles necessary for understanding and interpreting data used in nutrition, health care, public health, and epidemiology. Topics include descriptive statistics, inferential statistics, graphical data summary, sampling, statistical comparison of groups (t-tests, chi-squared, ANOVA), correlation, and regression. Students will learn via lecture, group discussions, critical reading of published research, and analysis of data using SPSS, SAS, and STATA.

Prerequisites: MATH 2003 or MATH 1342.

**NUTR 5310 Nutrition Assessment: 3 semester hours.**

This course will examine the types of nutritional assessment systems used for research, clinical evaluations, and community estimates for decision making. The use of the most frequently encountered bio markers, indices and indicators of nutritional status and their interpretation will also be covered.

Prerequisites: HUNF 3603 or HUNF 3360 and (HUNF 3673 or HUNF 3367).

**NUTR 5311 Nutrition and Public Health: 3 semester hours.**

The course is designed to provide students with understanding and competencies in assessing the factors which influence the nutritional status of the population; in identifying the resources in the community available to address nutrition and health problems; in conducting a community assets and needs assessment; and engaging the community in problem-solving. Also addressed are issues related to the changing nature of general health care and public health nutrition services

Prerequisites: HUNF 3673 or HUNF 3367 and (HUNF 4693 or HUNF 4369).

**NUTR 5312 Social and Cultural Influences on Nutrition: 3 semester hours.**

This course explores connections between what we eat and who we are through cross-cultural study of how personal and collective identities, social relations, and economic inequalities are formed and maintained via practices of food production, preparation, and consumption.

**NUTR 5313 Nutrition & Metabolism I: 3 semester hours.**

This course covers nutritional biochemistry; digestion, absorption, transport, function, regulation, and metabolism of macronutrients; relationships between dietary intake, metabolic pathways, and the pathogenesis of health.

**NUTR 5314 Nutritional Epidemiology: 3 semester hours.**

This course will cover research strategies in nutritional epidemiology and methods of dietary assessment using data on food intake, biochemical indicators of diet, and measures of body composition and size.

**NUTR 5315 Global Nutrition: 3 semester hours.**

The course explores the impact of nutrition and health disparities internationally resulting from inadequate nutrition throughout the lifecycle. Student will evaluate the international health and nutrition organizations, policies and interventions. The increased role of the dietitian in creating and implementing international interventions and affecting public health policy will be explored.

**NUTR 5320 Food Nutrition & Communication: 3 semester hours.**

The course explores current trends and the use of social media as an effective tool in dietetics practice. The course gives the students an opportunity to practice food styling and writing a supportive article for possible submission to Today's Dietitian.

***NUTR 5322 Nutrition Education & Counseling: 3 semester hours.***

Students preparing for careers in nutrition and dietetics are expected to gain competency for professional practice in a wide range of disciplines and be able to translate nutrition sciences effectively into plain language for people who want to change their eating behaviors, lifestyle, and energy expenditure to improve their health. This course will increase and refine the student's pre-professional experience in helping people change their eating habits for improving their health and reducing the risk of chronic diseases.

***NUTR 5323 Nutrition & Metabolism II: 3 semester hours.***

This course covers nutritional biochemistry; digestion, absorption, transport, function, regulation, and metabolism of micronutrients; relationships between dietary intake, metabolic pathways, and the pathogenesis of health.

Prerequisites: NUTR 5313.

***NUTR 5326 Capstone Project: 3 semester hours.***

Independent final paper exploring a topic of interest, emerging from a specific area in Nutritional Sciences under the supervision of a faculty advisor.

***NUTR 5633 Advanced Practicum in Dietetics: 6 semester hours.***

Preplanned experience at the professional level in dietetic administration, food service management, clinical and therapeutic nutrition and community and public health nutrition.

***NUTR 6306 Thesis: 3 semester hours.***

Independent research work on a specific area in Nutritional Sciences under the supervision of a thesis advisor.