

# Department of Agriculture, Agribusiness and Environmental Sciences

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## Contact Information

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The purpose of the graduate program in the Department of Agriculture, Agribusiness and Environmental Sciences is to provide students with a solid foundation in agricultural and natural resource sciences, theory and management. Goals of the department include developing new ideas through research, training graduate students in creativity and freedom of thought and preparing students for success in the face of a rapidly evolving economy.

For a M.S. in Agriculture Science (AGSC) 36 hour Graduate Program and Course Only options, a combination of 24 hours in major subject areas (AGRI, AGSC, AGBU, PLSS) within the Department of Agriculture, Agribusiness, and Environmental Sciences will satisfy the required 24 major hours minimum expectation for a general AGSC degree towards the 36 hours program option.

For the M.S. degree in Ranch Management, the following course subjects can be included in the major area for the degree (ANSC, WSCI, PLSS).

## Department Faculty

**Abugho, Seth** Assistant Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.Sc., University of the Philippines (Philippines); M.Sc., University of Arkansas; Ph.D., Texas A&M University.

**Ancona-Contreras, Veronica** Associate Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Universidad Autonoma de Nuevo Leon (Mexico); M.S., Texas A&M University-Kingsville; Ph.D., Texas A&M University.

**Anoruo, Ambrose** Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Higher National Diploma, Fed. College of Forest Technology (Nigeria); M.S., Southern Connecticut State University; M.S., Yale University; Doctor of Forestry, Yale University.

**Chumbley, Steven** Associate Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Bachelors, Texas A&M University; M.Ed., Texas A&M University-Kingsville; Ph.D., Texas Tech University.

**Donato-Molina, Maria** Research Assistant Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., University of Caldas (Columbia); M.S., Pontificia Universidad Javeriana (Columbia); Ph.D., Texas A&M University.

**Friend, Diane B** Instructional Assistant Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., California Polytechnic State University; M.S., California Polytechnic State University; Ph.D., Texas A&M University.

**Hainline, Mark** Assistant Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Sam Houston State University; M.S., Texas Tech University; Ph.D., Texas Tech University.

**Hanagriff, Roger** Associate Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Sam Houston State University; M.Ag., Texas A&M University; Ph.D., Texas A&M University.

**Kunta, Madhurababu** Research Associate Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Andra Pradesh Agricultural University (India); M.S, Texas A&M University-Kingsville; Ph.D., Texas A&M University.

**Louzada, Eliezer** Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Texas A&M University-Kingsville Citrus Center; B.S., Universidade Federal Rural do Rio de Janeiro (Brazil); M.S., Universidade Federal Rural do Rio de Janeiro (Brazil); Ph.D., Universidade Federal Rural do Rio de Janeiro (Brazil).

**Nelson, Shad** Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Dean, Dick and Mary Lewis Kleberg College of Agriculture and Natural Resources; Texas A&M University-Kingsville Citrus Center; B.S., Brigham Young University; M.S., Brigham Young University; Ph.D., University of California, Riverside.

**Schuster, Greta** Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Chair; B.S., Texas A&M University-Commerce; M.S., Texas A&M University-Commerce; Ph.D., Texas A&M University.

**Setamou, Mamoudou** Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; Interim Director, Texas A&M University-Kingsville Citrus Center; B.S., Benin National University (Benin); M.S., University of Cape Coast (Ghana); Ph.D., University of Hannover (Germany).

**Turner, Benjamin** Associate Professor, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Sam Houston State University; M.S., Texas A&M University-Kingsville; Ph.D., South Dakota State University.

## Emeritus

**French, J. Victor** Professor of Agriculture, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S.A.G., Colorado State University; M.S., Colorado State University; Ph.D., Michigan State University.

**Hensz, Richard** Professor of Agriculture, Department of Agriculture, Agribusiness, and Environmental Sciences; B.S., Texas A&M University; M.S., Texas A&M University; Ph.D., University of Florida.

## Agribusiness (AGBU)

### **AGBU 5305** Graduate Research Project **3 SCH (3)**

Designed for project option students and requires completion of research project. Prerequisite: departmental approval. May be repeated for a maximum of 6 semester hours.

### **AGBU 5306** Thesis **3 SCH (3)**

Designed for thesis option students. The course requires completion of thesis research. Prerequisite: departmental approval. May be repeated for maximum of 6 semester hours.

### **AGBU 5390** Advanced Studies In Agribus **3 SCH (3)**

Material offered is determined by the needs of the students. Laboratory and lecture vary according to the subject needs. May be repeated once under a different topic.

### **AGBU 5395** Advance Problems in Agribus **1-3 SCH (1-3)**

Independent work which may include a laboratory or field problem. Variable credit dependent upon the problem; may be repeated for a total of 3 semester hours for thesis option students or 6 semester hours for project option and course-only option students. Prerequisite: approval of a faculty member who will supervise the problem.

## Agriculture Science (AGSC)

### **AGSC 5305** Graduate Research Project **3 SCH (3)**

Designed for project option students and requires completion of research project. Prerequisite: departmental approval. May be repeated for a maximum of 6 semester hours.

### **AGSC 5306** Thesis **3 SCH (3)**

Designed for thesis option students. The course requires completion of thesis research. Prerequisite: departmental approval. May be repeated for maximum of 6 semester hours.

### **AGSC 5312** Facilities for Agric Sci **3 SCH (3)**

Planning and designing agricultural facilities for the secondary school with consideration for educational needs, curriculum, efficiency of use, inventory control and management. Organizing, equipping, maintaining and operating the shop, greenhouse, farm and meat processing laboratories.

### **AGSC 5361** Prog Building in Agric Educ **3 SCH (3)**

Organization of education programs in vocational agriculture for production, cooperative training and pre-employment classes. Developing annual teaching plan.

### **AGSC 5363** Mthds in Adult and Yng Farmer **3 SCH (3)**

Determining needs, methods of establishing programs, evaluating programs and methods of teaching producers involved in agriculture. A detailed study of adult and young farmer program.

### **AGSC 5367** Org and Admin of Voc Educ **3 SCH (3)**

Theories and procedures applicable to vocational education in the areas of program standards, finances, state plan, facilities, recruitment and selection of personnel and role of community advisory committees as applied to vocational education.

### **AGSC 5390** Advanced Studies in Agr Ed **3 SCH (3)**

Material offered will be determined by the needs of the students. May be repeated once under a different topic. Topics include the following: supervision of occupational experience programs in agriculture, agricultural youth leadership, instructional technology in agriculture and current issues in agricultural education.

### **AGSC 5395** Advanced Prob in Agr Sci Tech **1-3 SCH (1-3)**

Independent work which may include a laboratory or field problem. Variable credit dependent upon the problem; may be repeated for a total of 3 semester hours for thesis option students or 6 semester hours for project option and course-only option students. Prerequisite: approval of a faculty member who will supervise the problem.

### **AGSC 5399** Thesis Topics **1-9 SCH (1-9)**

For thesis option Master's students. To be taken by students who receive a stipend while working on their research project in Plant and Soil Science. Designed to be student-specific to meet each student's individual needs and to enhance their graduate education by providing one-on-one time with professors.

## Environmental Science (ENVS)

### **ENVS 5300** Adv. Environmental Science **3 SCH (3-0)**

In-depth exploration of the fundamental principles of environmental systems including biological, chemical, social, political, cultural, and economic factors that affect the environment; scientific and social implications of climate change, including impact of anthropogenic pollutants and human population on the environment.

### **ENVS 5305** Graduate Research Project **3 SCH (3-0)**

Designed for project option students and requires completion of a research project. Prerequisite: departmental approval. May be repeated for a maximum of 6 semester hours.

### **ENVS 5306** Thesis **3 SCH (3-0)**

Designed for thesis option students; the course requires 6 hours of grades, 3 hours will consist of completion of thesis proposal and 3 hours will consist of thesis. Completion of the thesis proposal must occur as a prerequisite to, or be enrolled in during the same semester as the 3 hours of thesis.

### **ENVS 5310** Sustainable Landuse Dec & Mgmt **3 SCH (3-0)**

Impact of private and public land use on natural resource conservation; private land ownership and management issues; and land administration patterns in the United States. Registration in ENVS 5300 Advances in Environmental Science is required.

### **ENVS 5320** North America Wetlands **3 SCH (3-0)**

Impact of anthropogenic activities on inland and coastal wetland ecosystems; the effects of altered wetland habitats on plant and animals communities. Registration in ENVS 5300 is required.

### **ENVS 5330** Sustainability of Eviron Ecosy **3 SCH (3-0)**

Importance of terrestrial ecosystems as habitats for environmental sustainability of plants, forests, and animal communities. Prerequisites: ENVR Intro to Environmental Science. Students can enroll concurrently with Introduction to Environmental Science. ENVS 5300 is required.

### **ENVS 5340** Soil and Water Conservation **3 SCH (3-0)**

Students will learn the methods of soil and water conservation and management techniques adapted to conserve water and soils in different environments. Students will also study relevant literature for most recent developments in the field of water and soil conservation.

### **ENVS 5350** Experimental Design **3 SCH (3)**

This course will introduce students to experimental designs and application of designs used in environmental and agricultural sciences; develop understanding of statistical treatment of data and use of statistics to interpret and communicate research data; provide hands-on training on SAS software, and prepare students to real life data collection and analysis.

### **ENVS 5360** Environmental Econ & Sustn Dev **3 SCH (3-0)**

The course introduces students to natural and environmental resource economics; emphasizes understanding of economic concepts; and evaluates their application to stakeholder socioeconomic needs of natural resources. Registration in ENVS 5300 Adv. Environmental Science is required.

### **ENVS 5390** Adv Studies in Environment Sci **3 SCH (3-0)**

Material offered is determined by the needs of the students. May be repeated under a different topic.

### **ENVS 5395** Adv Probs in Environmental Sci **1-3 SCH (1-3-0)**

Independent work that may include a laboratory or field problem. Variable credit dependent upon the problem; may be repeated for a total of 3 semester hours for thesis option students or 6 semester hours for project option and course-only students. Prerequisite: approval of a faculty member who will supervise the problem.

### **ENVS 5399** Thesis Topic **1-9 SCH (0-1-9)**

For thesis option Master's students. To be taken by students who receive a stipend while working on their research project in Environmental Systems Management. Course is designed to be student-specific to meet each student's individual needs and to enhance their graduate education by providing one-on-one time with professors.

## Plant and Soil Science (PLSS)

### **PLSS 5305** Graduate Research Project **3 SCH (3)**

Designed for project option students and requires completion of research project. Prerequisite: departmental approval. May be repeated for a maximum of 6 semester hours.

### **PLSS 5306** Thesis **3 SCH (3)**

Designed for thesis option students. The course requires completion of thesis research. Prerequisite: departmental approval. May be repeated for maximum of 6 semester hours.

### **PLSS 5329** Adv. Terrestrial Ecosystems **3 SCH (3-0)**

Students will examine the principles and processes that determine the patterns of terrestrial ecosystems along latitudinal gradient with emphasis on the patterns and structures of temperate ecosystems. The course will begin with an overview of global ecosystems but settle with in-depth look at temperate ecosystems as they exist in North America.

**PLSS 5330 Adv. Environmental Science 3 SCH (3-0)**

Designed to expose students to biological, chemical, social, political, cultural, and economic factors that affect the environment. The course will explore scientific and social implications of climate change, global warming, and the effects of anthropogenic pollutants and human population on the environment.

**PLSS 5337 Prac App Plant Biotechnology 3 SCH (3-0)**

The course will include an introduction to theoretical aspects in Plant Biotechnology with emphasis on practical application. Students will have an opportunity to get hands on training with some of the most basic, yet widely utilized techniques in micropropagation and plant molecular diagnostics.

**PLSS 5350 Pesticides and the Environment 3 SCH (3-0)**

Comprehensive in-depth study of characteristics and properties of pesticides and their applications in agricultural sciences, public and environmental health. Emphasis on insecticides, miticides (i.e., acaricides), fungicides and herbicides. Elements of pesticide science, such as pesticide chemical formulations, biochemical pathways of pesticide effects on organisms and the physiology of toxicity on development will be covered.

**PLSS 5351 Advanced Plant Propagation 3 SCH (3-0)**

Emphasis is placed on the basic principles of plant propagation to provide an adequate background in the areas of horticulture. All aspects of plant propagation will be studied including methods and technologies that are used in the propagation industry.

**PLSS 5352 Advanced Plant Physiology 3 SCH (3-0)**

Introduction to physiological processes of plants including physical processes, water relations, and cell physiology. In-depth examination of plant cell structures, photosynthetic processes, transport and translocation of water and solutes with the plant, biochemistry and metabolism, and growth and development of plants.

**PLSS 5353 Advanced Plant Pathology 3 SCH (3-0)**

Advanced study of the biology of plant pathogenic fungi, oomycetes, bacteria and viruses as well as the plant response to pathogen attack. Topics include host recognition and colonization, pathogenicity and virulence determinants, resistance mechanisms and plant defense responses. This course will also cover management practices to minimize the damage associated with plant diseases.

**PLSS 5360 Exper. Designs & Data Analysis 3 SCH (3-0)**

Introduction to experimental design including data analysis software, and data interpretation. Hands-on training on SAS software and preparation of data collection and analysis.

**PLSS 5390 Adv Stud in Plant and Soil Sci 3 SCH (3-0)**

Material offered is determined by the needs of the students. May be repeated under a different topic.

**PLSS 5395 Adv Prob in Plant Science 1-3 SCH (1-3)**

Independent work that may include a laboratory or field problem. Variable credit dependent upon the problem; may be repeated for a total of 3 semester hours for thesis option students or 6 semester hours for project option and course-only option students. Prerequisite: approval of a faculty member who will supervise the problem.

**PLSS 5399 Thesis Topics 1-9 SCH (1-9)**

For thesis option Master's students. This course is to be taken by students who receive a stipend while working on their research project in Plant and Soil Science. Course is designed to be student-specific to meet each student's individual needs and to enhance their graduate education by providing one-on-one time with professors.

**Agriculture Science, M.S. - Coursework Only Terminal Degree**

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
AGSC 5312	Facilities for Agric Sci	3
Support Field Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Semester 2</b>		
AGSC 5361	Prog Building in Agric Educ	3
Support Field Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Year 2</b>		
<b>Semester 1</b>		
AGSC 5363	Mthds in Adult and Yng Farmer	3
AGSC 5390	Advanced Studies in Agr Ed <sup>2</sup>	3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Semester 2</b>		
AGSC 5395	Advanced Prob in Agr Sci Tech	3

Support Field Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Year 3</b>		
<b>Semester 1</b>		
AGSC 5396		3
Support Field Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Semester 2</b>		
AGSC 5367	Org and Admin of Voc Educ	3
AGSC 5390	Advanced Studies in Agr Ed <sup>2</sup>	3
<b>Semester Credit Hours</b>		<b>6</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

<sup>1</sup> Supporting Elective Field – Electives from graduate level coursework in a supporting field: (i.e., ANSC, PLSS, HSCI, WSCI, ADED, EDAD, etc.)

<sup>2</sup> AGSC 5390 – Chosen from one of four Advanced Special Topic Courses. Requires comprehensive oral exam.

## Agriculture Science – Agribusiness, M.S. - Thesis

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
ACCT Elective <sup>1</sup>		3
RAMT Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC 5306	Thesis	3
AGSC Elective <sup>2</sup>		3
FINC Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
AGSC 5399	Thesis Topics	3
Free Elective <sup>1</sup>		3
ISYS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC 5306	Thesis <sup>3</sup>	3
<b>Semester Credit Hours</b>		<b>3</b>
<b>Total Credit Hours Required:</b>		<b>30</b>

<sup>1</sup> Free Elective – Electives from graduate level coursework in geography/GIS, animal science, range and wildlife science, plant and soil science, ranch management, accounting, finance, management, marketing and business administration.

<sup>2</sup> AGSC Elective – Electives from graduate level courses in agricultural science-agribusiness.

<sup>3</sup> AGSC 5306 – requires completion of a thesis and oral examination.

## Agriculture Science – Agribusiness, M.S. - Graduate Project

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
ACCT Elective <sup>1</sup>		3

RAMT Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC Elective <sup>2</sup>		3
FINC Elective <sup>1</sup>		3
Free Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
AGSC 5399	Thesis Topics	3
GEOG/GIS Elective <sup>1</sup>		3
ISYS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC 5305	Graduate Research Project <sup>3</sup>	3
AGSC 5399	Thesis Topics	3
Free Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

<sup>1</sup> Free Elective – Electives from graduate level coursework in geography/GIS, animal science, range and wildlife science, plant and soil science, ranch management, accounting, finance, management, marketing and business administration.

<sup>2</sup> AGSC Elective – Electives from graduate level coursework in agricultural science-agribusiness.

<sup>3</sup> AGSC 5305 – Requires completion of a graduate research project write-up and oral examination.

## Agriculture Science – Agribusiness, M.S. - Coursework Only Terminal Degree

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
ACCT Elective <sup>1</sup>		3
RAMT Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC Elective <sup>2</sup>		3
FINC Elective <sup>1</sup>		3
Free Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
Free Elective <sup>1</sup>		3
GEOG/GIS Elective <sup>1</sup>		3
ISYS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC 5399	Thesis Topics <sup>3</sup>	3
AGSC Elective <sup>2</sup>		3
Free Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

- 1 Free Elective – Electives from graduate level coursework in geography/GIS, animal science, range and wildlife science, plant and soil science, ranch management, accounting, finance, management, marketing and business administration.
- 2 AGSC Elective – Electives from graduate level coursework in agricultural science-agribusiness.
- 3 AGSC 5399 – Requires completion of a comprehensive written and oral examination.

## Environmental Systems Management, M.S. - Thesis Option I

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
ENVS 5300	Adv. Environmental Science	3
ENVS 5350	Experimental Design	3
MGMT 5320	Leading a Sustainable Organ	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
ENVS 5310	Sustainable Landuse Dec & Mgmt	3
MKTG 5350	Crisis Communication & Manag.	3
ENVS 5306	Thesis	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
MGMT 5370	Leadership, Change & Innovat.	3
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	3
ENVS 5330	Sustainability of Eviron Ecosy	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
ENVS 5306	Thesis	3
<b>Semester Credit Hours</b>		<b>3</b>
<b>Total Credit Hours Required:</b>		<b>30</b>

## Environmental Systems Management, M.S. - Project Option II

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
ENVS 5300	Adv. Environmental Science	3
ENVS 5350	Experimental Design	3
MGMT 5320	Leading a Sustainable Organ	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
ENVS 5310	Sustainable Landuse Dec & Mgmt	3
ENVS 5330	Sustainability of Eviron Ecosy	3
ENVS 5340	Soil and Water Conservation	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	3
MGMT 5370	Leadership, Change & Innovat.	3
ENVS 5360	Environmental Econ & Sustn Dev	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
MKTG 5350	Crisis Communication & Manag.	3

ENVS 5320	North America Wetlands	3
ENVS 5305	Graduate Research Project	3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

## Environmental Systems Management, M.S. - Course Option III

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
ENVS 5300	Adv. Environmental Science	3
ENVS 5350	Experimental Design	3
MGMT 5320	Leading a Sustainable Organ	3
ENVS 5310	Sustainable Landuse Dec & Mgmt	3
<b>Semester Credit Hours</b>		<b>12</b>
<b>Semester 2</b>		
ENVS 5320	North America Wetlands	3
ENVS 5330	Sustainability of Eviron Ecosy	3
ENVS 5340	Soil and Water Conservation	3
MKTG 5350	Crisis Communication & Manag.	3
<b>Semester Credit Hours</b>		<b>12</b>
<b>Year 2</b>		
<b>Semester 1</b>		
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	3
ENVS 5360	Environmental Econ & Sustn Dev	3
ENVS 5390	Adv Studies in Environment Sci	3
MGMT 5370	Leadership, Change & Innovat.	3
<b>Semester Credit Hours</b>		<b>12</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

## Plant and Soil Science, M.S. - Thesis

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
Free Elective <sup>1</sup>		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
PLSS 5306	Thesis	3
STAT 53XX		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
PLSS 5399	Thesis Topics	3
Free Elective <sup>1</sup>		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>



**Semester 2**

PLSS 5306	Thesis <sup>3</sup>	3
<b>Semester Credit Hours</b>		<b>3</b>
<b>Total Credit Hours Required:</b>		<b>30</b>

<sup>1</sup> Free Elective – Electives from graduate level coursework in geography/GIS, animal science, agriculture science, range and wildlife science, agribusiness, environmental engineering, chemistry and biology.

<sup>2</sup> PLSS Elective – Electives from graduate level coursework in plant and soil science.

<sup>3</sup> Requires thesis defense and oral comprehensive exam to graduate thesis committee.

## Plant and Soil Science, M.S. - Graduate Project

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
GEOG/GIS Elective <sup>1</sup>		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
Free Elective <sup>1</sup>		3
PLSS Elective <sup>2</sup>		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
PLSS 5399	Thesis Topics	3
PLSS Elective <sup>2</sup>		3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
PLSS 5305	Graduate Research Project <sup>3</sup>	3
PLSS 5399	Thesis Topics	3
PLSS Elective <sup>2</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

<sup>1</sup> Free Elective – Electives from graduate level coursework in geography/GIS, animal science, agriculture science, range and wildlife science, agribusiness, environmental engineering, chemistry and biology.

<sup>2</sup> PLSS Elective – Electives from graduate level coursework in plant and soil science.

<sup>3</sup> PLSS 5305 – Requires completion of a graduate research project write-up and oral examination.

## Plant and Soil Science, M.S. - Coursework Only Terminal Degree

Course	Title	Semester Credit Hours
<b>Year 1</b>		
<b>Semester 1</b>		
STAT 53XX		3
GIS Based 53XX		3
PLSS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
Free Elective <sup>2</sup>		3

PLSS Elective <sup>1</sup>		3
PLSS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Semester 1</b>		
Free Elective <sup>1</sup>		3
PLSS Elective <sup>1</sup>		3
PLSS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Semester 2</b>		
AGSC 5395	Advanced Prob in Agr Sci Tech <sup>3</sup>	3
Free Elective <sup>1</sup>		3
PLSS Elective <sup>1</sup>		3
<b>Semester Credit Hours</b>		<b>9</b>
<b>Total Credit Hours Required:</b>		<b>36</b>

<sup>1</sup> Free Elective – Electives from graduate level coursework in geography/GIS, animal science, agriculture science, range and wildlife science, agribusiness, environmental engineering, chemistry and biology.

<sup>2</sup> PLSS Elective – Electives from graduate level coursework in plant and soil science.

<sup>3</sup> PLSS 5395 – Requires completion of a final comprehensive written exam and oral on PLSS courses.