

Department of Agriculture, Agribusiness and Environmental Sciences

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.

There are three (3) Master of Science degree majors within the Department: Agriculture Science (AGSC), Environmental Systems Management (ENVS), and Plant & Soil Science (PLSS). Each of these majors has 3 M.S. track plan options (Plan I-thesis; Plan II-grad project; Plan III- coursework only). All Plan I thesis degrees require a total of 30 hours, with 18 hours in major; whereas Plan II and Plan III degree options require a total of 36 hours with 24 hours in the major subject area.

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, ENVS). Any course 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).

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 patters 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 & Sustrn 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 Special Topics Plant Soil Sci 3 SCH (3-0)

Material offered to be determined by the needs of the students. Lecture will vary according to the subject needs with each course having three hour credit. May be repeated for credit when the topic changes.

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.

Agriculture Science, M.S. - Thesis Option I

The 30 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 18 credit hours in graduate level AGSC and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences, and 3 hours of quantitative analysis statistics based course is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 30 credit hour requirement; AGSC 5399 Thesis Topics course is optional and only 3 credit hours permitted towards degree plan.

Code	Title	Semester Credit Hours
Major Core-Support Field ¹		3
PLSS 5360	Exper. Designs & Data Analysis	
Major Research		6
<i>In addition to the above, the course below must be taken twice for a total of six (6) semester credit hours</i>		
AGSC 5306	Thesis	
Major Elective Courses ²		9-21
Free Elective Courses ³		0-12
TOTAL		30 Credits

¹ Student may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² AGSC or AG Elective- Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science. AGSC 5399 Thesis Topics is an optional elective; only three (3) credits will be counted towards the degree total.

³ Free Elective- Electives from graduate-level coursework in ADED, ANSC, BIOL, EDAD, ENVS, PLSS, RWSC, RAMT and geography/GIS.

Agriculture Science, M.S. - Project Option II

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level AGSC and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences, and 3 hours of quantitative analysis statistics based course is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field ¹		3
PLSS 5360	Exper. Designs & Data Analysis	
Major Research		
AGSC 5305	Graduate Research Project	
Major Elective Courses ²		18-30
Free Elective Courses ³		0-12
TOTAL		36 Credits

¹ Student may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² AGSC or AG Elective-Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science.

³ Free Elective- Electives from graduate-level coursework in ADED, ANSC, BIOL, EDAD, ENVS, PLSS, RWSC, RAMT and geography/GIS.

Agriculture Science, M.S. - Course Option III

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level AGSC and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Elective Courses ¹		24-36
Free Elective Courses ²		0-12
TOTAL		36 Credits

¹ AGSC or AG Elective- Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science.

² Free Elective- Electives from graduate-level coursework in ADED, ANSC, BIOL, EDAD, ENVS, PLSS, RWSC, RAMT and geography/GIS.

Agriculture Science- Agribusiness, M.S

Agriculture Science - Agribusiness, M.S. - Thesis Option I

The 30 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 18 credit hours in graduate level AGSC and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences, and 3 hours of quantitative analysis statistics based course is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 30 credit hour requirement; AGSC 5399 - Thesis Topics course is optional and only 3 credit hours permitted towards degree plan.

Code	Title	Semester Credit Hours
Major Core-Support Field		6
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
PLSS 5360	Exper. Designs & Data Analysis ¹	
Major Research		6
<i>In addition to the above, the course below must be taken twice for a total of six (6) semester credit hours</i>		
AGSC 5306	Thesis	
Major Elective Courses ²		6-18
Free Elective Courses ³		0-12
TOTAL		30 Credits

¹ Students may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² AGBU or AG Elective- Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science. AGSC 5399 - Thesis Topics is an optional elective; only three (3) credits will be counted towards the degree total.

³ Free Elective- Elective from graduate-level coursework in agriculture science, animal science, biology, business, environmental science, geography/GIS, plant and soil science, ranch management, and rangeland and wildlife science.

Agriculture Science - Agribusiness, M.S. - Project Option II

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level AGSC and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences, and 3 hours of quantitative analysis statistics based course is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field		6
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
PLSS 5360	Exper. Designs & Data Analysis ¹	
Major Research		3
AGSC 5305	Graduate Research Project	
Major Elective Courses ²		15
Free Elective Courses ³		12

TOTAL	36 Credits
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¹ Students may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² AGBU or AGSC Elective- Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science.

³ Free Elective- Electives from graduate-level coursework in agriculture science, animal science, biology, business, environmental science, geography/GIS, plant and soil science, ranch management, and rangeland and wildlife science.

Agriculture Science - Agribusiness, M. S. - Course Option III

The 36 credit hour requirement is met through a major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level AGSC and /or Agriculture Related courses in Department in Agriculture, Agribusiness and Environmental Sciences, and 3 hours of quantitative analysis statistics-based course is required toward AGSC Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field		3
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
Major Elective Courses ¹		21
Free Elective Courses ²		12
TOTAL		36 Credits

¹ AGSC or AG Elective- Electives from a combination of graduate-level course (AGRI, AGSC, AGBU, PLSS) offered within Dept Agriculture, Agribusiness and Environmental Science.

² Electives from graduate-level coursework in agriculture science, animal science, biology, business, environmental science, geography/GIS, plant and soil science, ranch management, and rangeland and wildlife science.

Environmental Systems Management, M.S.

Environmental Systems Management, M.S. Thesis Option I

The 30 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 18 credit hours in graduate level ENVS and/or Agriculture Related courses in Department of Agriculture, Agribusiness and Environmental Sciences, and three (3) hours of quantitative analysis statistics based course is required toward ENVS Master of Science degree. Additionally, free elective courses may count toward the 30 credit hour requirement; ENVS 5399 Thesis Topics course is optional and only three (3) credit hours permitted towards degree plan.

Code	Title	Semester Credit Hours
Major Core-Support Field		6
PLSS 5360	Exper. Designs & Data Analysis ¹	
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
Major Core-Support Field: Business Management ²		9
MGMT 5320	Leading a Sustainable Organ	
MGMT 5370	Leadership, Change & Innovat.	
MGMT 5350		
Major Research		6
<i>In addition to the above, the course below must be taken twice for a total of six (6) semester credit hours</i>		
ENVS 5306	Thesis	
Major Elective Courses ³		12
Free Elective Courses ⁴		3
TOTAL		30 Credits

¹ Students may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² Three courses provide a certificate in Management from College of Business Administration.

³ See List of Major Course Options as shown after Plan III.

⁴ Free Elective- Electives from graduate-level coursework in biology, geography/GIS, animal science, rangeland and wildlife science, plant and soil science, environmental science, and ranch management.

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

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level ENVS courses in Department of Agriculture, Agribusiness and Environmental Services, and 3 hours of quantitative analysis based course is required toward ENVS Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field		3
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
Major Core-Support Field: Business Management ¹		9
MGMT 5320	Leading a Sustainable Organ	
MGMT 5350		
MGMT 5370	Leadership, Change & Innovat.	
Major Research		3
ENVS 5305	Graduate Research Project	
Major Elective Courses ²		21
TOTAL		36 Credits

¹ Three courses provide a certificate in Management from College of Business Administration.

² See List of Major Course Options as shown after Plan III.

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

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level ENVS courses in Department of Agriculture, Agribusiness and Environmental Sciences is required toward ENVS Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field		3
RAMT 5351	Sys Apprch Natrl Res Prblm Sol	
Major Core-Support Field: Business Management ¹		9
MGMT 5320	Leading a Sustainable Organ	
MGMT 5350		
MGMT 5370	Leadership, Change & Innovat.	
Major Elective Courses ²		24
TOTAL		36 Credits

¹ Three courses provide a certificate in Management from College of Business Administration.

² See List of Major Course Options as shown after Plan III.

List of Major Elective Course Options

Code	Title	Semester Credit Hours
ENVS 5300	Adv. Environmental Science	3
ENVS 5310	Sustainable Landuse Dec & Mgmt	3

ENVS 5320	North America Wetlands	3
ENVS 5330	Sustainability of Eviron Ecosy	3
ENVS 5350	Experimental Design	3
ENVS 5360	Environmental Econ & Sustn Dev	3
ENVS 5395	Adv Probs in Environmental Sci	1-3
ENVS 5390	Adv Studies in Environment Sci	3
ENVS 5340	Soil and Water Conservation	3
ENVS 5399	Thesis Topic *	1-9

* ENVS 5399 may only be taken by students pursuing the thesis degree option (Plan I). Only three (3) credits will be counted towards the degree total.

Plant and Soil Science, M.S.

Plant and Soil Science, M.S. - Thesis Option I

The 30 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 18 credit hours in graduate level PLSS courses in Department of Agriculture, Agribusiness and Environmental Sciences, and three (3) hours of quantitative analysis statistics based course is required toward PLSS Master of Science degree. Additionally, free elective courses may count toward the 30 credit hour requirement; PLSS 5399 - Thesis Topics course is optional and only three (3) credit hours permitted towards degree plan.

Code	Title	Semester Credit Hours
Major Core-Support Field ¹		3
PLSS 5360	Exper. Designs & Data Analysis	
Major Research		6
<i>In addition to the above, the course below must be taken twice for a total of six (6) semester credit hours</i>		
PLSS 5306	Thesis	
Major Elective Courses ²		15
Free Elective Courses ³		12
TOTAL		30 Credits

¹ Student may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² See List of PLSS Major Course Options as shown after Plan III.

³ Free Elective- Electives from graduate-level coursework in biology, geography/GIS, animal science, rangeland and wildlife science, plant and soil science, environmental science, and ranch management.

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

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level plant and soil science courses in Department of Agriculture, Agribusiness, and Environmental Sciences, and three (3) hours of quantitative analysis statistics based course is required toward PLSS Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Core-Support Field ¹		3
PLSS 5360	Exper. Designs & Data Analysis	
Major Research		3
PLSS 5305	Graduate Research Project	
Major Elective Courses ²		18
Free Elective Courses ³		12
TOTAL		36 Credits

¹ Students may substitute this Quantitative Analysis Course with any 5000-level or 6000-level STAT course.

² See List of PLSS Major Course Options as shown after Plan III.

³ Free Elective- Electives from graduate-level coursework in biology, geography/GIS, animal science, rangeland and wildlife science, plant and soil science, environmental science, and ranch management.

Plant and Soil Science, M.S. - Coursework Only

The 36 credit hour requirement is met through major core, major research, and major elective courses. A minimum of 24 credit hours in graduate level PLSS courses in Department of Agriculture, Agribusiness and Environmental Sciences is required toward PLSS Master of Science degree. Additionally, free elective courses may count toward the 36 credit hour requirement.

Code	Title	Semester Credit Hours
Major Elective Courses ¹		24
Free Elective Courses ²		12
TOTAL		36 Credits

¹ See List of PLSS Major Course Options as shown after Plan III.

² Free Elective- Electives from graduate-level coursework in biology, geography/GIS, animal science, rangeland and wildlife science, plant and soil science, environmental science, and ranch management.

List of Major Elective Course Options

Code	Title	Semester Credit Hours
PLSS 5337	Prac App Plant Biotechnology	3
PLSS 5350	Pesticides and the Environment	3
PLSS 5351	Advanced Plant Propagation	3
PLSS 5352	Advanced Plant Physiology	3
PLSS 5353	Advanced Plant Pathology	3
PLSS 5390	Special Topics Plant Soil Sci	3
PLSS 5395	Adv Prob in Plant Science	1-3
PLSS 5399	Thesis Topics *	1-9

* PLSS 5399 may only be taken by students pursuing the thesis degree option (Plan I). Only three (3) credits will be counted towards the degree total.