

College of Agriculture & Life Sciences
Proposed Catalog Changes
Effective Summer 2020

Department of Agricultural Economics

1. Change the following courses:

AGEC 468 Risk Management: Commodity Merchandising

1 credit, [max 6](#)

Fundamental functions of a commodity merchandiser within the agricultural food supply chain, including risk management through basis trading and margin management of a hedged marketing position, are learned through utilizing actual cash grain ownership and exchange-traded futures. One credit lab also engages students directly with regional grain trade, commodity brokers and allied industries.

Rationale: The Agricultural Commodity Risk Management Program (ACRMP) at the University of Idaho is known as a one-of-a-kind experiential learning program across the nation, providing students a means to acquire the skills necessary to profitably manage price-risk inherent in the agricultural sector.

As such, the program relies on a unique curriculum designed to engage students at a relatively early point in their collegiate career, learning a skillset usually only attained after several years of working in the industry.

AGEC 468 is specifically designed to give students an opportunity to not only learn the definitions and mechanics involved in merchandising grain in the regional supply chain, but also observe and participate in managing the outcome from trading a real grain position. The course is designed to be repeatable to allow sophomore-level students to initially enter the course and contribute to a team trading effort as “research associates”. These “associates” provide market information and assist the “junior traders” (those who have at least one prior semester’s experience in the course) and observe the “senior trader” (those who have at least two semester’s experience) placing actual trades with regional cooperatives and brokerage firms.

Being a one-credit course, this early introduction and repeatability is a necessary component to allow students time to attain and develop a unique and intricate skill with increased levels of responsibility; through peer interaction and true experiential learning.

The success of the AGEC 468 “repeatable” curriculum can be seen in outcomes since being implemented. In addition to our students consistently placing in the top ten of nationwide trading competitions, students from our program are also in high demand across a broad sector of national and international agri-businesses. These firms recognize the value of graduates with a skillset that is not only unattainable from our peer land grant institutions, but also the benefit of a shortened learning curve in applied risk management principles.

AGEC 469 Risk Management: Commodity Trading**1 credit, max 6**

One-credit lab which engages students in the actual trading of agricultural commodity futures and options. Course emphasizes concepts, tools and strategies as they relate to identifying trading opportunities across agricultural commodities, managing portfolio risk and increasing operational profits through implementing trading positions in commodity futures markets.

Prereq: Instructor Permission.

Rationale: The Agricultural Commodity Risk Management Program (ACRMP) at the University of Idaho is known as a one-of-a-kind experiential learning program across the nation, providing students a means to acquire the skills necessary to profitably manage price-risk inherent in the agricultural sector.

As such, the program relies on a unique curriculum designed to engage students at a relatively early point in their collegiate career, learning a skillset usually only attained after several years of working in the industry.

AGEC 469 is specifically designed to give students an opportunity to not only learn the definitions and mechanics involved in trading commodity futures, but also observe and employ appropriate tools to manage the risk involved in trading a real futures position.

The course is designed to be repeatable to allow sophomore-level students to initially enter the course and contribute to a team trading effort as research associates. These “associates” provide market information and assist the “junior traders” (those who have at least one prior semester’s experience in the course) and observe the “senior trader” (those who have at least two semester’s experience) placing actual trades with regional cooperatives and brokerage firms.

Being a one-credit course, this early introduction and repeatability is a necessary component to allow students time to attain and develop a unique and intricate skill with increased levels of responsibility; through peer interaction and true experiential learning.

The success of the AGEC 469 “repeatable” curriculum can be seen in outcomes since being implemented. In addition to our students consistently placing in the top ten of nationwide trading competitions, students from our program are also in high demand across a broad sector of national and international agri-businesses. These firms recognize the value of graduates who have acquired a skillset that is not only unattainable from our peer land grant institutions, but also the benefit of a shortened learning curve in applied risk-management principles.

AGEC 497 Teaching Ag Econ/Agribusiness**1-3 credits, max 6**

Supervised class observation and course preparation, and an opportunity to present one or several lectures in specific agribusiness and agricultural economics areas. Incorporates learning and teaching methods applied in professional settings; may include advanced practices for competitions, field or lab activities, and client interactions. Max enrollment 5. Recommended preparation: senior standing.

Prereq: Permission.

Rationale: The AGEC 497 is used for undergraduate TAs who help with the teaching of course in AERS. To date, we predominately use undergraduate TAs in three courses: AGEC 278 Farm and Agribusiness Management; AGEC 289 Agricultural Markets and Prices; and AGEC 333 Introduction to Sales. The functions (attendance, grading homework assignments, etc.) are similar across these classes; however, the content is different. The reason we value this service as an educational effort is the TAs gain a deeper, broader and further understanding of the topic by working with the students enrolled in that class. Therefore, serving as a TA for one class is completely different when it comes to content. Thus, AGEC 497 should be allowed to be repeated if a student serves in that capacity for different classes.

Department of Animal and Veterinary Science

1. Change the following course:

AVS 476 Sheep Science

3 credits

Application of principles of genetics, reproduction, nutrition, health, and marketing to the management of commercial and purebred sheep; new developments related to sheep industry; production, evaluation, and use of wool. Two lectures and one 2-hour lab a week; one 1-day field trip or equiv time. Recommended Preparation: AVS 222 or equivalent. [Cooperative: open to WSU degree-seeking students.](#)

Prereq: AVS 109.

Rationale: This course is currently being taught at UI and does not require added workload to the department. WSU does not offer a course with this subject matter.

Department of Entomology, Plant Pathology & Nematology

1. Change the following courses:

PLP 415 Plant Pathology

3 credits

Joint-listed with PLP 515

Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)

Prereq: ~~BIOL~~ [EPPN](#) 154 and ~~BIOL~~ [EPPN](#) 155; or BIOL 250; and PLSC 102; or Permission.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

PLP 416 Plant Pathology Lab**1 credit**

Joint-listed with PLP 516

As a companion course to PLP 415/515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands-on training in the identification and classification of representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.

Prereq: ~~BIOL~~ [EPPN](#) 154 and ~~BIOL~~ [EPPN](#) 155 or BIOL 250 and 255 and PLSC 102, or permission.

Coreq: PLP 415/515.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

PLP 511 Viruses and Virus Diseases of Plants**4 credits**

Nature of plant viruses, vector-virus relationships and virus diseases of plants. Includes laboratory section.

Prereq: ~~BIOL~~ [EPPN](#) 154 and ~~BIOL~~ [EPPN](#) 155 or BIOL 250 and 255 and PLSC 102 or permission.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

PLP 515 Plant Pathology**3 credits**

Joint-listed with PLP 415

Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)

Prereq: ~~BIOL~~ [EPPN](#) 154 and ~~BIOL~~ [EPPN](#) 155; or BIOL 250; and PLSC 102; or Permission.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

PLP 516 Plant Pathology Lab**1 credit**

Joint-listed with PLP 416

As a companion course to PLP 415/515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands-on training in the identification and classification of

representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.

Prereq: ~~BIOL~~ [EPPN](#) 154 and ~~BIOL~~ [EPPN](#) 155 or BIOL 250 and 255 and PLSC 102, or permission.

Coreq: PLP 415/515.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

PLP 522 Plant Bacteriology

3 credits

The purpose of this class is to provide current information on the biology of plant associated bacteria, including plant pathogens and beneficial microbes. Topics addressed will include bacterial morphology, taxonomy, genetics, and ecology. Diagnosis, disease management, and the molecular basis of host-pathogen interactions will be presented.

Prereq: PLP 415/ 515 and ~~BIOL~~ [EPPN](#) 154 and 155 or BIOL 250 and 255 or permission.

Rationale: Introductory microbiology, BIOL 154 and 155 are no longer being offered and Microbiology and the World Around Us, EPPN 154 and 155 are the most similar replacement for the prerequisites.

Department of Family and Consumer Sciences

1. Add the following course:

FCS 124 Introduction to Apparel Construction

2 credits

Introduction to hand sewing, home, and industrial sewing machinery to construct garments and products. Two 2.5-hour studios a week, 1 hour of outside studio time, and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses.

Rationale: Many students entering the Apparel, Textiles, and Design (ATD) program do not have prior sewing or garment construction experience. Currently, students with no experience and students with experience have been required to take a single, foundational sewing/garment construction course. This has led to frustration with the more advanced students who want to progress more quickly. The instructor has been limited in introducing more advanced techniques due to the level of skill (or lack of skill) within the student group with no experience. The addition of FCS124 would allow the ATD program to better prepare students with no sewing experience for success in upper division design and construction courses. Students entering the program with acceptable sewing skills would be able to challenge or waive FCS124. No additional faculty resources are required to add this course.

2. Change the following courses:

FCS 270 Scientific Principles of Food Preparation

3 credits

Exploration of the scientific principles, [basic concepts](#) and techniques of food preparation; [food safety principles; sensory evaluation of food.](#) ~~applied sensory evaluation of food. (Fall only)~~

~~Prereq: Major in the Department of Family and Consumer Sciences or Permission.~~

Rationale: The only changes are removal of the major only restriction and slight revisions to the course description. The major only restriction will allow more students the opportunity to take the course. Most of the students plan to change to a food and nutrition major, but having this requirement often causes delays in registration. The course description is changed to reflect current content covered in the course and remove the word applied since application of concepts occurs in a different course. There is no added workload from these course changes.

FCS 275 Experimental Foods

2 credits

Exploration of food preparation and application of underlying scientific principles through laboratory experiments. [Applied sensory evaluation of food products; recipe modification and testing for special dietary considerations.](#) ~~On-line modules focus on food safety, menu planning, food cost control, and cultural and religious influences on food choices. Hybrid course with one 3-hr lab and one web module a week. (Spring only)~~

~~Prereq: FCS 270 and a major in the Department of Family and Consumer Sciences; or Permission~~

Rationale: The pre-requisite is changing to allow more students the opportunity to take the course. Most of the students plan to change to a food and nutrition major, but having this requirement often causes delays in registration.

The course description reflects the new format for this course. Previously, this course has been offered as a hybrid course with a weekly face-to-face lab and weekly on-line modules. This current structure of one lab and one on-line meal management module each week is confusing to students and the content doesn't relate well together. It also makes it difficult for transfer students who have taken either a foods lab or a meal management course but are still required to take experimental foods because it contains both content areas. Instead the course will focus on hands-on food experiments and projects in the laboratory setting that will be equivalent to a typical foods lab course for food and nutrition students. The previous on-line modules will be moved into a new meal management course which will be equivalent to a typical meal management course for food and nutrition students. This will simplify the pre-requisite requirements for the new Master of Science in Dietetics program. This course is already being taught and changes to the courses will not increase workload.

FCS 476 (s) Textile Structures**1-3 credits, max ~~3~~9**

This studio course gives students the opportunity to experiment with fiber-based fabrications. These may include woven, knitted, felted, laced, and knotted fabrications dependent on current industry trends. May include embellishment and surface design depending on the fabrication and industry trends. ~~Service learning completes the final project.~~ [Can be repeated up to 3 times.](#)

Prereq: FCS 123 or Permission.

Rationale: When the FCS 476 Textile Structures course was developed, the intent was to offer a wide range of techniques across multiple course deliveries and allow students to take the course multiple times. The current maximum number of credits allowed (3 credits) is too low, since a single offering of the course is 3 credits. This proposal will expand the maximum number of credits to 9 and allow students to take this course three times during their undergraduate studies. The addition of the (s) in the title will allow this course to have a section title specifying the content for that section.

FCS 477 (s) Surface Design**1-3 credits, max ~~3~~9**

This studio course gives students the opportunity to experiment with the texture and appearance of textile fabrications. Techniques may include dyeing and resist methods, subtraction, and embellishment, among others depending on industry trends. [Can be repeated up to 3 times.](#)

Prereq: FCS 123 or Permission.

Rationale: When the FCS 477 Surface Design course was developed, the intent was to offer a wide range of techniques across multiple course deliveries and allow students to take the course multiple times. The current maximum number of credits allowed (3 credits) is too low, since a single offering of the course is 3 credits. This proposal will expand the maximum number of credits to 9 and allow students to take this course three times during their undergraduate studies. The addition of the (s) in the title will allow this course to have a section title specifying the content for that section.

FCS 478 (s) Experimental Construction**1-3 credits, max ~~3~~9**

This studio course gives students the opportunity to experiment with transforming two-dimensional textiles into three-dimensional apparel products. Techniques may include tailoring, upcycling, use of non-traditional textiles, and use of fabrics students have produced in other courses, among others dependent on current industry trends. [Can be repeated up to 3 times.](#)

Prereq: FCS 224 or Permission.

Rationale: When the FCS 478 Experimental Construction course was developed, the intent was to offer a wide range of techniques across multiple course deliveries and allow students to take the course multiple times. The current maximum number of credits allowed (3 credits) is too low, since a single offering of the course is 3 credits. This

proposal will expand the maximum number of credits to 9 and allow students to take this course three times during their undergraduate studies.

The addition of the (s) in the title will allow this course to have a section title specifying the content for that section.

Department of Plant Sciences

1. Add the following courses:

PLSC 444 Forage and Grassland Management

3 credits

Joint-listed with PLSC 544

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. To earn graduate credit, students will need to complete a special project and report.

Prereq: PLSC 205

Rationale: Forages comprise one of the top five crops produced in the United States with respect to acreage. Forage production is a critical component to agricultural production in the state of Idaho in support of livestock production. Worldwide, forage production sustains societies and are critical to countries with limited infrastructure to well-developed infrastructure. Two faculty members currently team-teach this course and are committed to continue teaching it. Course materials are posted within Bblearn and so additional support beyond Bblearn and our video infrastructure should not be required. The production of high quality forages is critical to support the livestock industries in the region. Plant, animal, and rangeland sciences need a course that bridges the plant sciences discipline with that of utilization by livestock with harvested or grazed forages.

PLSC 544 Forage and Grassland Management

3 credits

Joint-listed with PLSC 444

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. To earn graduate credit, students will need to complete a special project and report.

Prereq: PLSC 205

Rationale: Forages comprise one of the top five crops produced in the United States with respect to acreage. Forage production is a critical component to agricultural production in the state of Idaho in support of livestock production. Worldwide, forage production sustains societies and are critical to countries with limited infrastructure to well-developed infrastructure. Two faculty members currently team-teach this course and are committed to

continue teaching it. Course materials are posted within Bblearn and so additional support beyond Bblearn and our video infrastructure should not be required. The production of high quality forages is critical to support the livestock industries in the region. Plant, animal, and rangeland sciences need a course that bridges the plant sciences discipline with that of utilization by livestock with harvested or grazed forages.

3. Make the following curricular changes:

Crop Management (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3) and:

AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	3
ASM 305	GPS and Precision Agriculture	3
ASM 412	Agricultural Safety and Health	2
BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 338	Weed Control	4
PLSC 400	Seminar	1
PLSC 407	Field Crop Production	3
PLSC 408	Cereal Science	3
PLSC 438	Pesticides in the Environment	3
PLSC 444	Forage and Grassland Management	3
PLSC 451	Vegetable Crops	3
PLSC 480	Field Trip	1
PLSC 490	Potato Science	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
AGED 406	Exploring International Agriculture	3
or POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	
Select one of the following:		4-5
BIOL 154	Introductory Microbiology	
& BIOL 155	and Introductory Microbiology Laboratory	
EPPN 154	Microbiology and the World Around Us	
& EPPN 155	Microbiology and the World Around Us Laboratory	
BIOL 250	General Microbiology	
& BIOL 255	and General Microbiology Lab	

Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Crop Management Courses		
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
ASM 305	GPS and Precision Agriculture	3
ASM 315	Irrigation Systems and Water Management	3
ASM 412	Agricultural Safety and Health	2
PLSC 338	Weed Control	4
PLSC 407	Field Crop Production	3
PLSC 408	Cereal Science	3
PLSC 438	Pesticides in the Environment	3
PLSC 451	Vegetable Crops	3
PLSC 480	Field Trip	1
PLSC 490	Potato Science	3
SOIL 206	The Soil Ecosystem Lab	1
Select 15 12 credits of Crop Management electives from the following:		15 12
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 356	Agricultural and Rural Policy	
AGEC 447	International Development Economics	
ASM 107	Beginning Welding	
ASM 112	Introduction to Agricultural Systems Management	
ASM 409	Agricultural Tractors, Power Units and Machinery Management	
ECON 202	Principles of Microeconomics	
GENE 314	General Genetics	

PLP 415 & PLP 416 OR SOIL 425	Plant Pathology Plant Pathology Lab Microbial Ecology	
PLSC 401	Plant Physiology	
PLSC 446	Plant Breeding	
SOIL 425	Microbial Ecology	
SOIL 446	Soil Fertility	
STAT 251	Statistical Methods	
Select 6 credits of Professional Support electives from the following:		6
AGEC 411	The World of International Agribusiness	
AGEC 419	Development and Analysis of Enterprise Budgets	
AVS 109	The Science of Animals that Serve Humanity	
CHEM 275 & CHEM 276 OR CHEM 278 & CHEM 279	Carbon Compounds Carbon Compounds Lab Organic Chemistry I Organic Chemistry I: Lab	
CHEM 276	Carbon Compounds Lab	
PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 207	Introduction to Biotechnology	
PLSC 300	Plant Propagation	
PLSC 398	Internship	
PLSC 410	Invasive Plant Biology	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 440	Advanced Laboratory Techniques	
PLSC 488	Genetic Engineering	
STAT 251	Statistical Methods	
Total Hours		88-90
Courses to total 120 credits for this degree		

Crop Management Minor

PLSC 102	The Science of Plants in Agriculture	3
PLSC 407	Field Crop Production	3
AGEC 278 or AGEC 289	Farm and Agribusiness Management	3-4
Select Two of the following:		6
PLSC 408	Cereal Science	
PLSC 444	Forage and Grassland Management	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	

Select <u>5-6</u> credits from the following:		<u>5-6</u>
AGEC 356 or AGEC 477	Agricultural and Rural Policy Law, Ethics and the Environment	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
ASM 412	Agricultural Safety and Health	
PLSC 338	Weed Control	
PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
<u>PLSC 444</u>	<u>Forage and Grassland Management</u>	
PLSC 446	Plant Breeding	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		<u>20-22</u>

Courses to total ~~22~~ 20 credits for this minor.

Crop Science Major (B.S.Pl.Sc.)

Required course work includes the university requirements (see [regulation J-3](#)) and:

BIOL 115	Cells & the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
<u>CHEM 275</u>	<u>Carbon Compounds</u>	<u>3</u>
<u>CHEM 276</u>	<u>Carbon Compounds Lab</u>	<u>1</u>
<u>ENGL 101</u>	<u>Writing & Rhetoric I</u>	<u>3</u>
<u>ENGL 102</u>	<u>Writing & Rhetoric II</u>	<u>3</u>
<u>ENT 322</u>	<u>General and Applied Entomology</u>	<u>4</u>
<u>GENE 314</u>	<u>General Genetics</u>	<u>3</u>
PLSC 102	The Science of Plants in Agriculture	3
<u>PLSC 207</u>	<u>Introduction to Biotechnology</u>	<u>3</u>
<u>PLSC 338</u>	<u>Weed Control</u>	<u>4</u>
PLSC 400	Seminar	1
<u>PLSC 401</u>	<u>Plant Physiology</u>	<u>3</u>
<u>PLSC 407</u>	<u>Field Crop Production</u>	<u>3</u>
<u>PLP 415</u>	<u>Plant Pathology</u>	<u>3</u>
<u>PLP 416</u>	<u>Plant Pathology Lab</u>	<u>1</u>
<u>PLSC 438</u>	<u>Pesticides in the Environment</u>	<u>3</u>

PLSC 446	Plant Breeding	3
PLSC 480	Field Trip	1
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 446	Soil Fertility	1-3
STAT 251	Statistical Methods	3
AGED 406 or POLS 441	Exploring International Agriculture Genes and Justice: Comparative Biotechnology Policy Formation	3
Select one of the following:		4-5
BIOL EPPN 154 & BIOL EPPN 155	Introductory Microbiology and Introductory Microbiology Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	

Crop Science Courses

CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
ENT 322	General and Applied Entomology	4
GENE 314	General Genetics	3
PLSC 207	Introduction to Biotechnology	3
PLSC 338	Weed Control	4
PLSC 401	Plant Physiology	3
PLSC 407	Field Crop Production	3
PLP 415	Plant Pathology	3

PLSC 438	Pesticides in the Environment	3
PLSC 446	Plant Breeding	3
PLSC 480	Field Trip	1
SOIL 206	The Soil Ecosystem Lab	1
SOIL 446	Soil Fertility	1-3
STAT 251	Statistical Methods	3
Select 12 credits of Crop Science electives from the following:		12
PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 300	Plant Propagation	
PLSC 398	Internship	
PLSC 408	Cereal Science	
PLSC 410	Invasive Plant Biology	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 440	Advanced Laboratory Techniques	
PLSC 444	Forage and Grassland Management	
PLSC 451	Vegetable Crops	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
Select 6 credits of Professional Support electives from the following:		6
AGEC 278	Farm and Agribusiness Management	
AGEC 289	Agricultural Markets and Prices	
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 356	Agricultural and Rural Policy	
AGEC 447	International Development Economics	
ASM 107	Beginning Welding	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
ASM 412	Agricultural Safety and Health	
STAT 431	Statistical Analysis	
Total Hours		88-92

Courses to total 120 credits for this degree

Crop Science Minor

GENE 314	General Genetics	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 338	Weed Control	4
PLSC 407	Field Crop Production	3
PLSC 446	Plant Breeding	3
Select two courses from the following:		6
PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
PLSC 451	Vegetable Crops	
PLSC 440	Advanced Laboratory Techniques	
PLSC 444	Forage and Grassland Management	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		22

Courses to total 22 credits for this minor

Soil and Water Systems

1. Change the following courses:

ASM 107 Beginning Welding

~~2~~ 3 credits

Principles of operation, use, and care of arc and acetylene welding equipment. One lec, one 2-hr lab, and two hrs of individual practice a wk. Enrollment limited to 12 per section. Cooperative: open to WSU degree-seeking students.

Rationale: Increasing the number of credits from 2 to 3 in this course appropriately reflects the student effort hours required to complete a comprehensive course in Beginning Welding. As technologic and industry advances have enhanced and broadened the subject area, the curriculum and student effort has also grown in order to maintain a comprehensive learning experience.

ASM 200 (s) Seminar

~~Credit arranged.~~ 1 credit, max arranged

Rationale: Course is offered as a one-hour seminar per week. Change in credit to reflect course delivery.

ASM 210 Small Engines

~~2~~ 3 credits

Principles of engine operation, tune-up, and maintenance; repair and overhaul of small engines. One lecture, one 2-hour lab, and two hours of individual practice a week. Enrollment limited to 12 per section.

Rationale: Increasing the number of credits from 2 to 3 in this course appropriately reflects the student effort hours required to complete a comprehensive course in Small Engines. As technologic and industry advances have enhanced and broadened the subject area, the curriculum and student effort has also grown in order to maintain a comprehensive learning experience.