CLEMSON UNIVERSITY **Curriculum and Course Change System - Print New Course Form**

Course Abbreviation & Number:
X **New Undergraduate Course:** AG M- 319
.. **New Honors Course:** --
.. **New Graduate Course:** -

Effective Term: 01/2013
Catalog Title: Agribusiness Decision Analysis
Transcript Title: Ag Decision Analysis
Fixed Credit Course: 3 (3,0)
Variable Credit Course: - (-), (-)

Method of Instruction	Course Modifier	General Education Designation
X A-Lecture Only	.. Pass/Fail Only	.. English Composition
.. B-Lab (w/fee)	X Graded	.. Oral Communication
.. D-Seminar	.. Variable Title	.. Mathematics
.. E-Independent Study	.. Creative Inquiry	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. Repeatable	.. Math or Science
.. G-Studio	maximum credits:	.. A&H (Literature)
.. H-Field course		.. A&H (Non-Literature)
.. I-Study Abroad		.. Social Science
.. L-Lab (no/fee)		.. CCA
.. N/B-Lecture/Lab(w/fee)		.. STS
.. N/L-Lecture/Lab(no fee)		

Add cross-listing with the following child course(s):

Catalog Description: Improvement of the decision-making process in agricultural businesses through the use of decision-analysis software. Students will build their own decision-making models using spreadsheets.

Prerequisite(s): AG M 219, AP EC 302, AP EC 319, or MGT 201.

Projected Enrollment:
Year 1 - 20 Year 2 - 25 Year 3 - 25 Year 4 - 25

Required course for students in: AG M. If approved, this course will be added to the AG M curriculum in the sophomore or junior year.

Statement of need and justification based on assessment results of student learning outcomes: Agricultural businesses demand complex decision analysis of multiple business scenarios among congruent sectors along with their interdependency in the food and fiber industries. Agricultural and food industry leaders have indicated that an in-depth understanding of agribusiness decision making, quantitative and qualitative analysis of alternate financial and operations strategies, spreadsheet modeling, data validation and consolidation, and consolidated business performance by decision modeling systems is needed by students entering careers in their industry. The emphasis of this course will be on making use of computer spreadsheets and database for decision (sensitivity) analysis through the creation of agricultural business decision models to improve a company's performance.

Textbook(s): Wayne Winston Microsoft Excel Data Analysis and Business Modeling. Microsoft Press, Dec. 2004. (ISBN 0-7356-1901-8) and Wilder N. Ferreira EXCELLER – A Step-by-Step Guide to Creating Your Decision Support System in Excel. Booksurge, Dec 2007. (ISBN 978-1-4196-8065-6)

Learning Objectives: Through the development of their own agricultural business models for agricultural enterprises (e.g. dairy, swine, crops, fruits, food processing, etc.) students will demonstrate their ability to: (1) analyze decision models for agricultural businesses; (2) project the impact of the computer modeling on the company's performance; (3) validate the use of appropriate qualitative and quantitative data while focusing on implementing the decision models with computers; and (4) research and develop a new agricultural business decision model for an existing firm.

Topical Outline: Excel Basic Commands (Chapter 1) – 1.5 hrs
Making a Worksheet (Chapter 2) – 1.5 hrs
Special Features (Chapter 3) – 3 hrs
Excel Data Analysis – (Chapter 4) – 3 hrs
Excel Business Planning – (Chapter 5) – 3 hrs
Charts and Worksheet Manipulation (Chapter 6) – 3hrs
Data Manipulation & Data Management (Chapter 7) – 3 hrs
Guidelines for Worksheet Design (Chapter 8) – 3 hrs
Spreadsheet Modeling (Chapter 9) – 3 hrs
Optimization Models in Agriculture (Chapter 10) – 3 hrs
Determining the Reorder Point (Chapter 11) – 3 hrs
Functions for Personal Financial Decisions (Chapter 12) – 3 hrs
Sensitivity Analysis with Data Tables (Chapter 13) – 3 hrs
Validating Data (Chapter 14) – 3 hrs
Consolidating Data (Chapter 15) – 3 hrs
Agribusiness Decisions Analysis (Chapter 16) – 3 hrs

Evaluation: Two exams (25% and 30% each), homework (20%) and a project (25%) will be used in calculating final grades. Homework will focus on materials covered in class. The course grading scale is A for 90-100%, B for 80-89%, C for 70-79%, D for 60-69%, and F for less than 59%.

Form Originator: WFERREI,Wilder Ferreira **Date Form Created:** 9/11/2012
Form Last Updated by: , **Date Form Last Updated:** 11/7/2012
Form Number: 5238

Approval

Chair, Department Curriculum Committee	Date 11/7/12	Chair, Undergraduate Curriculum Committee	Date 11/2/2012

2

Patricia A. Sayler	11-7-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	11/8/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Fred Whitford	11/8/12	Doris R. Helms	2/3/13
College Dean	Date	President	Date
		for	
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print New Course Form**

Course Abbreviation & Number:
X **New Undergraduate Course:** AG M- 400
.. **New Honors Course:** --
.. **New Graduate Course:** -

Effective Term: 01/2013
Catalog Title: Senior Seminar in Agricultural Mechanization and Business
Transcript Title: Sem. Ag. Mech & Bus.
Fixed Credit Course: 1 (1,0)
Variable Credit Course: - (-), (-)

Method of Instruction	Course Modifier	General Education Designation
.. A-Lecture Only	.. Pass/Fail Only	.. English Composition
.. B-Lab (w/fee)	X Graded	.. Oral Communication
X D-Seminar	.. Variable Title	.. Mathematics
.. E-Independent Study	.. Creative Inquiry	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. Repeatable	.. Math or Science
.. G-Studio	maximum credits:	.. A&H (Literature)
.. H-Field course		.. A&H (Non-Literature)
.. I-Study Abroad		.. Social Science
.. L-Lab (no/fee)		.. CCA
.. N/B-Lecture/Lab(w/fee)		.. STS
.. N/L-Lecture/Lab(no fee)		

Add cross-listing with the following child course(s):

Catalog Description: A seminar and project based course that will provide information on a variety of topics of value for the development of professionals in Agricultural Mechanization & Business and Agricultural Education. Topics will include development of a professional resume, professional ethics, and current topics related to agricultural technology and systems management.

Prerequisite(s): Junior or senior standing in Agricultural Mechanization and Business, or Agricultural Education.

Projected Enrollment:
Year 1 - 20 Year 2 - 25 Year 3 - 30 Year 4 - 35

Required course for students in: Agricultural Mechanization and Business

Statement of need and justification based on assessment results of student learning outcomes: The course in needed to consolidate the teaching of professional development topics that are in other courses (i.e. AGM 472). This will release time in other courses for more detailed treatment of technical topics. Also, this course will provide a means to help students to engage in critical thinking concerning current issues related to agricultural systems and business through seminars and panel discussions with professionals and researchers.

Textbook(s): Handouts provided by guest speakers and the faculty team teaching the seminars.

Learning Objectives: - Students will demonstrate critical thinking required of agricultural business and mechanization professionals by way of seminars and discussions with experts on current business, technology, and policy topics.
- Students will demonstrate that they have improved their ability to move into the business world through enhanced education in skills needed to gain employment and professional ethics.

Topical Outline: Each item in the list below is 1 class meeting period.
1 Class Introduction – Guidelines for technical writing
2 Seminar: Developing a professional resume
3 Seminar: Skills to take to the job interview
4 Job interviewing skills
5 Job interviewing skills
6 Seminar: Alternative Fuels for Large or Small Equipment*
7 Seminar: Biodiesel as an Alternative Fuel*
8 Seminar: Potential Sources of Biofuels for Agriculture*
9 Seminar: Water Quality*
10 Seminar: New Developments in Mechanization and Automation*
11 Seminar: New Developments in Precision Irrigation*
12 Seminar: Precision Agriculture*
13 Seminar: Professional Ethics
14 Ethics case studies
15 Seminar: Current Issues in Agricultural Policy*

* Topics will be based on timely and important issues or new developments in areas related to agricultural systems management, agricultural business, and agricultural policy. Accordingly, topics may vary by semester. The asterisked items in the list above represent those included in a sample semester.

Evaluation: Resume assignment --15%
Ethics case report --15%
Interview skills assignment--10%
Class participation/attendance--60%
TOTAL = 100%

A=90-100
B=80-89
C=70-79
D=60-69
F=<60

Duplication (if applicable): None

Add course requirements for honors and/or 600-level courses (if applicable): None

Learning Activities associated with General Education competencies (if applicable): None

Form Originator: JCHSTN,John Chastain **Date Form Created:** 9/12/2012
Form Last Updated by: , **Date Form Last Updated:** 11/7/2012
Form Number: 5245

Approval

Chair, Department Curriculum Committee	11/7/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	11/7/12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	11/8/12 Date	Provost	2/3/13 Date
College Dean	11/8/12 Date	President	2/3/13 Date
Director, Calhoun Honors College	Date		

000005

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Agricultural Mech and Business
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**

Explanation: AGM 219 (Ag and Food Systems) was approved as a new course in Spring 2012 and is now being added to the curriculum as planned when the new course request was approved. AGM 319 (Ag Decision Analysis) and AGM 400 (Senior Seminar in AGM) are proposed as new courses on the current agenda. While AGM 219 is not the only allowable prerequisite (any introductory agribusiness management course) of AGM 319, AGM 319 is meant to represent a continuation of AGM 219. As more AGM students seek the Business Administration minor, a strengthening of business applications specifically relevant to the major is required. AP EC 308 and AG ED 200 are being removed from the curriculum to make room for these two critical courses. These changes do not affect Gen Ed Requirements, the Gen Ed Checklist, or students' abilities to earn their required minors. HORT 101, 210, and 211 are also being added to the Plant/Crop Sciences list to expand relevant options for the students. HORT 210 and 211 are new courses added within the last year. COMM 150 has previously been approved as a blanket substitution in AGM and is being added to the curriculum as an alternative to COMM 250, to simplify students' scheduling. Other changes represent shuffling of courses to better suit schedule availability across semesters and transfer students. Footnotes had to be changed accordingly.

Additions, deletions, and replacements:
Delete AG ED 200 from 1st semester freshman year.
Add AGM 219 to 1st semester sophomore year.
Delete AP EC 308 from 1st semester junior year.
Add AGM 319 in 1st semester junior year.
To COMM 250 requirement, add "or COMM 150".
To Plant/Crop Sciences list, add HORT 101, 210, and 211.
Add AGM 400 to 1st semester senior year.

Changes in order of course listings:
Move MKT 301 or AP EC 309 to 1st semester senior year.
Move Plant/Crop Science Requirement to 2nd semester sophomore year.
Move COMM 250 to 2nd semester freshman year.
Move ECON 211 or AP EC 202 to 1st semester freshman year.
Move ACCT 201 to 2nd semester freshman year.
Move EXST 301 or MTHSC 203 to 2nd semester junior year.

Footnote renumbering and textual changes:
Footnote 5 becomes footnote 2.
Footnote 2 becomes footnote 4.
Footnote 4 becomes footnote 5.
Change "offering" to "listing" in footnote 6.
Change "AGM" to "AP EC" in footnote 3.

Form Originator: KIRK2, Kendall Kirk **Date Form Created:** 9/11/2012
Form Last Updated by: , **Date Form Last Updated:** 10/11/2012
Form Number: 5241

Approval

Chair, Department Curriculum Committee	10/11/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	10/12/12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	10/11/12 Date	Provost	2/3/13 Date
College Dean	10/11/12 Date	President for	2/3/13 Date

Agricultural Mechanization & Business Curriculum
Proposed for 2013-14 (last revised 11 Sept 2012 by krk)

Freshman Year

~~3 - AGED 200 Ag. Appl. of Ed. Technology~~
1 - AGM 101 Intro. to Ag. Mech. and Business
3 - AGM 205 Principles of Fabrications
3 - BIOL 103 General Biology I
1 - BIOL 105 General Biology Lab. I
3 - ECON 211 Principles of Microeconomics[1] *or*
3 - AP EC 202 Agricultural Economics
3 - MTHSC 102 Intro. to Math. Analysis
14

3 - ACCT 201 Financial Accounting Concepts
3 - BIOL 104 General Biology II
1 - BIOL 106 General Biology Lab. II
3 - COMM 250 Public Speaking ***or***
3 - COMM 150 Intro. to Human Comm.
3 - ENGL 103 Accelerated Composition
3 - Elective
16

Sophomore Year

3 - AGM 219 Ag and Food Systems
3 - AGM 221 Surveying
4 - CH 101 General Chemistry
2 - EG 210 Comp.-Aided Design/Engr. Apps. *or*
2 - EG 208 Engr. Graphics/Machine Design *or*
2 - EG 209 Intro. to Engr./Comp. Graphics
4 - PHYS 200 Introductory Physics *or*
3 - PHYS 207 General Physics I *and*
1 - PHYS 209 General Physics I Lab.
16

3 - AGM 206 Machinery Management
3 - AGM 303 Calcs. For Mechanized Ag.
3 - Arts & Humanities (Lit.) Requirement
4 - CH 102 General Chemistry
3 - Plant/Crop Science Requirement[2]
16

Junior Year

3 - AGM 301 Soil and Water Conservation
3 - AP EC 302 Econ. of Farm Management *or*
3 - MGT 201 Principles of Management[1,3]
~~3 - AP EC 308 Quantitative Applied Economics~~
3 - AGM 319 Ag Decision Analysis
3 - AGM 405 Envir. Control in Animal Structures
4 - CSENV 202 Soils
16

3 - AGM 402 Drainage and Irrigation
3 - AGM 452 Mobile Power
3 - Arts & Hum. (Non-Lit.)[4]
3 - EXST 301 Introductory Statistics[1] *or*
3 - MTHSC 203 Elem. Statistical Inference
3 - Minor Requirement[5]
15

Senior Year

3 - AP EC 319 Agribusiness Management *or*
3 - MGT 201 Principles of Management[1,3]
3 - AGM 406 Mech. and Hydraulic Systems
3 - AGM 460 Electrical Systems
3 - MKT 301 Principles of Marketing[1]
3 - AP EC 309 Econ. of Agricultural Marketing
3 - Minor Requirement[5]
1 - AGM 400 - Senior Seminar in AGM
16

3 - AGM 410 Precision Agriculture
3 - AGM 472 Capstone *or*
3 - AGM 419 Agribus. Innov./Entrepren.[6]
3 - Minor Requirement[5]
3 - Plant/Crop[2] or Soil Science[7] Requirement
3 - Social Science Requirement[4]
15

124 Total semester hours

[1]Required for students minoring in Business Administration.
[2]AGRIC 104, CSENV 405, 421, 422, 423, 426, HORT **101, 210, 211,** 212, 305, 433, 455, 456, PL PA 310, 406, 411, 459. If applicable, these courses may also be used to satisfy minor requirement.
[3]MGT 201 can count for either the ~~AGM~~ **AP EC** 302 or 319 requirement but not for both.
[4]See general education requirements. Three of these hours must also satisfy the Cross Cultural Awareness requirement and three of these hours must also satisfy the Science and Technology in Society requirement.
[5]See CAFLS approved minors. If requirements for an approved minor have already been satisfied, this course may be any 300 level (or higher) course from an approved program. Any required course in the curriculum can also be used to count towards minor requirements.
[6]AGM 419 is a Fall-only course. Students electing to take AGM 419 must switch the course order with a Fall ~~offering~~ **listing**.
[7]CSENV 403, 446, 452, 485, 490. If applicable, these courses may also be used to satisfy minor requirement.

000007

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form**

X **Change a Course - Abbrev & Number: AVS- 204**
Corresponding Lab Course: AVS-L-204
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: --
.. **Add Graduate course:** --
Course Title: HORSE CARE TECHNIQUE

Brief Statement of Change:
change pre-requisite: Reason for change: To ensure students have completed Institutional Animal Use compliance, have had exposure to handling horses and have familiarized themselves with the CU Equine Center.

Last Term taught: 1108	.. **Change Abbrev to:**
Effective Term: 08/2013	.. **Change Number to:**
.. **Change Catalog Title:**	.. **Change Transcript Title:**
from:	from: HORSE CARE TECHNIQUE
to:	to:

.. **Change of Credit**	From: Fixed Credit: 2 (1,2) Variable Credit: - (-), (-)	To: Fixed Credit: (,) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**
.. **Delete cross-listing with the following child course(s):**
.. **Reverse Parent/Child relationship with:**

.. **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
X N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

.. Change Catalog Description:
from:
to:

X **Change Prerequisite(s):**
from: none
to: AVS 151

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , **Date Form Last Updated:** 10/11/2012
Form Number: 5347

Approval

Kristine Vernon	10-11-12	Clarice W. Morrow	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Skewes	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kominski	10/12/12	Doris R Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date

Ted Whitmire	10/16/12	Doris R Helms 020008	2/3/13
College Dean	Date	President FOR	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY

000009

Curriculum and Course Change System - Print Change/Delete Course Form

X **Change a Course - Abbrev & Number: AVS- 205**
Corresponding Lab Course: --
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: --
.. **Add Graduate course:** --
Course Title: HORSEMANSHIP I

Brief Statement of Change:
Change Title to: Horsemanship Techniques Reason for change: Deleting AVS 207 - Horsemanship II; also adding AVS 205 to the list of options to fulfill AVS Technique Requirements and other courses have Techniques in the title.

Last Term taught: 0908 Effective Term: 01/2013	.. **Change Abbrev to:** .. **Change Number to:**
.. **Change Catalog Title:** from: to:	X **Change Transcript Title:** from: HORSEMANSHIP I to: Horsemanship Tech

.. **Change of Credit**	From: Fixed Credit: 2 (0,4) Variable Credit: - (-), (-)	To: Fixed Credit: (,) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**

.. **Delete cross-listing with the following child course(s):**

.. **Reverse Parent/Child relationship with:**

.. **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
X B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
.. N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

X **Change Catalog Description:**
from: Designed for beginner to intermediate riders. The mechanics of safety, lungeing, basic position, cues and rider's aids for both western and English disciplines are covered.
to: Develops basic to advanced skills based on rider aptitude. Students learns mechanics of safety, lungeing, basic position, cues, and rider's aids as well as individual work and building subtlety and finesse with aids.

.. **Change Prerequisite(s):**
from:
to:

Learning Objectives: • Understand common breeds, their histories, and uses
• Identify English and Western tack
• Fit tack properly
• Demonstrate common and uncommon training aids and their uses
• Ride with proper equitation for the English and Western rider
• Ride effectively
• Demonstrate different methods of training
• Progress a 'green broke' horse

Topical Outline: Equitation - 20 hours
Tack Selection and Identification - 10 hours
History of Horse Utilization in US and World and Breeds - 8 hours
Methods of Training - 10 hours
Training Aids - 6 hours
How to Progress a Horse in Its Training - 6 hours

Evaluation: Tests: 40%, Breeds Project Assignment 1: 20%, Popular Press Article Assignment 2: 20%, Attendance/Participation: 20%

100-90 A 89-80 B 79-70 C 69-60 D Below 60 F

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , Date Form Last Updated: 10/10/2012
Form Number: 5345

Approval

Kristine Vernon		Janice W. Morrison	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Sheerin	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Doris R Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jeff Whitten	10/11/12	Doris R Helms	2/3/13
College Dean	Date	President FOR	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY

000011

Curriculum and Course Change System - Print Change/Delete Course Form

X **Delete a Course - Abbrev & Number: AVS- 207**
Corresponding Graduate Course: --
.. **Corresponding Honors course:** --

Course Title: HORSEMANSHIP II

Brief Statement of Change:
Rationale for deletion: Due to limited resources and requirements for low student to teacher ratio and high ~~number~~ cost of horse maintenance fees, AVS will just be teaching AVS 205 (Horsemanship I) each semester rather than also teaching AVS 207 (Horsemanship II). Course is no longer needed, is not required for any student (only an elective), and thus will be deleted.

Last Term taught: 1201
Effective Term: 01/2013

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , **Date Form Last Updated:** 10/10/2012
Form Number: 5344

Approval

Kristine Vernon		Janice W. Morrison	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Pete Steere	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Dario A. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Ted Whitney	10/11/12	Dario A. Helms	2/3/13
College Dean	Date	President for	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY

000012

Curriculum and Course Change System - Print Change/Delete Course Form

X **Change a Course - Abbrev & Number: AVS- 209**
Corresponding Lab Course: AVS-L-209
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: --
.. **Add Graduate course:** --
Course Title: LIVESTOCK EXHIB TECH

Brief Statement of Change:
change pre-requisite: Reason for change: To ensure students have completed Institutional Animal Use compliance, have had exposure to handling all livestock species covered in AVS 209 and have worked on each of the animal holding facilities/farms.

Last Term taught: 1201 Effective Term: 08/2013	.. **Change Abbrev to:** .. **Change Number to:**
.. **Change Catalog Title:** from: to:	.. **Change Transcript Title:** from: LIVESTOCK EXHIB TECH to:

.. **Change of Credit**	From: Fixed Credit: 2 (1,2) Variable Credit: - (-), (-)	To: Fixed Credit: (,) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**

.. **Delete cross-listing with the following child course(s):**

.. **Reverse Parent/Child relationship with:**

.. **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
X N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

.. Change Catalog Description:
from:
to:

X **Change Prerequisite(s):**
from: none
to: AVS 151

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , **Date Form Last Updated:** 10/11/2012
Form Number: 5348

Approval

Kristine Vernon		Patricia W. Hinton	11/02/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Rita Sheets	10-17-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kowinski	10/12/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date

Ted Whitmire	10/16/12	Doris R Helms 800013	2/3/13
College Dean	Date	President for	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print New Course Form** 000014

Course Abbreviation & Number:
X **New Undergraduate Course:** AVS- 211
.. **New Honors Course:** --
.. **New Graduate Course:** -

Effective Term: 01/2013

Catalog Title: Meat Processing Techniques
Transcript Title: Meat Processing Tech

Fixed Credit Course: 2 (1,2)
Variable Credit Course: - (-), (-)

Method of Instruction	Course Modifier	General Education Designation
.. A-Lecture Only	.. Pass/Fail Only	.. English Composition
.. B-Lab (w/fee)	X Graded	.. Oral Communication
.. D-Seminar	.. Variable Title	.. Mathematics
.. E-Independent Study	.. Creative Inquiry	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. Repeatable	.. Math or Science
.. G-Studio	maximum credits:	.. A&H (Literature)
.. H-Field course		.. A&H (Non-Literature)
.. I-Study Abroad		.. Social Science
.. L-Lab (no/fee)		.. CCA
X N/B-Lecture/Lab(w/fee)		.. STS
.. N/L-Lecture/Lab(no fee)		

Add cross-listing with the following child course(s):

Catalog Description: Examines the basic principles of food animal meat processing. Laboratories include hands-on opportunities harvesting a variety of livestock, carcass evaluation, carcass fabrication and value-added meat products. Students also gain understanding in HACCP certification and meat inspection.

Prerequisite(s): AVS 150

Projected Enrollment:
Year 1 - 30 Year 2 - 30 Year 3 - 30 Year 4 - 30

Required course for students in: none

Statement of need and justification based on assessment results of student learning outcomes: This course has been taught for three semesters as a special problems/practicum combination. Student feedback from end of course evaluations has been positive and has increased student knowledge in basic anatomy of livestock, meats harvesting and meat inspection. A formal course offering to teach students about food safety, harvesting techniques and meats inspection is warranted.

Textbook(s): no text required

Learning Objectives: Demonstrate food safety requirements surrounding the slaughter and fabrication of meat
Prepare a meat and poultry HACCP plan
Identify the various cuts of meat, their uses and become better informed consumers
Identify anatomy of animals used for food

Topical Outline: Laboratory Outline:

Basic Hygiene, Meat Lab Equipment, Knife Sharpening 2 hours
Inspection & HACCP 2 hours
Swine Processing/Anatomy 4 hours
Swine Fabrication 4 hours
Lamb/Goat Processing 2 hours
Poultry Processing 4 hours
Beef Anatomy 2 hours
Beef Processing 2 hours
Beef Carcass Fabrication 4 hours
Beef Carcass Evaluation 2 hours
Final Laboratory Examination 2 hours

Lecture Outline:
Class Outline and Expectations, 1 hour
Meat Inspection & HACCP, 1 hour
Swine Processing/Anatomy, 2 hours
Swine Fabrication Techniques, 2 hours
Lamb/Goat Anatomy and Slaughter Technique, 1 hour
Poultry Processing (Chickens and Turkeys), 2 hours
Beef Carcass Anatomy, 1 hour

000015

Beef Slaughter Techniques, 1 hour
Beef Carcass Fabrication, 2 hours
Beef Carcass Evaluation, 1 hour
Review for Final Exam, 1 hour

Evaluation: Quizzes 15%, Final Exam 85%

A 90 – 100, B 80 – 89, C 70 - 79, D 60 – 69, F Below 60

Duplication (if applicable): none

Add course requirements for honors and/or 600-level courses (if applicable): none

Learning Activities associated with General Education competencies (if applicable): none

Form Originator: KVERNON,Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , **Date Form Last Updated:** 10/10/2012
Form Number: 5343

Approval

Kristine Vernon			11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Sheets	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jed Weintraub	10/11/12	Doris R. Helms	2/3/13
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000016

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form**

X **Change a Course - Abbrev & Number: AVS- 417**
Corresponding Lab Course: AVS-L-417
Corresponding Honors course: --
.. Add Honors course: --
Corresponding Graduate course: AVS- -617
.. Add Graduate course: --
Course Title: ANI AGRIBUS DEVELOP

Brief Statement of Change:
change of pre-requisites: Reason for change: students are no longer required to take APEC 202 which was the previous pre-requisite. They are now required to take both ECON 211 and ECON 212.

Last Term taught: 1201 Effective Term: 08/2013	**.. Change Abbrev to:** **.. Change Number to:**
.. Change Catalog Title: from: to:	**.. Change Transcript Title:** from: ANI AGRIBUS DEVELOP to:

.. **Change of Credit**	From: Fixed Credit: 2 (1,2) Variable Credit: - (-), (-)	To: Fixed Credit: (,) Variable Credit: - (-),(-)

.. Add cross-listing with the following child course(s):

.. Delete cross-listing with the following child course(s):

.. Reverse Parent/Child relationship with:

.. Change Method of Instruction		.. Change Course Modifier		.. Change General Education Designation	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
X N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

.. Change Catalog Description:
from:
to:

X **Change Prerequisite(s):**
from: ACCT 201 and AP EC 202
to: ACCT 201 plus either ECON 211 or ECON 212

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/24/2012
Form Last Updated by: , Date Form Last Updated: 10/11/2012
Form Number: 5349

Approval

Kristine Vernon		Patricia W. Marinez	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Pete Stevens	10-17-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kowalski	10/12/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date

000017

Fred Whitmire	10/16/12	Jim R Helms for	2/3/13
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY

000018

Curriculum and Course Change System - Print Major Form

Change Major Name: Animal and Veterinary Sciences (Pre-Veterinary)
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**

Explanation: For Pre-Veterinary Concentration:
- Add AVS 205 and 211 to the list of Techniques options. These additions will help to provide adequate sections with a reduced number of seats for safety and still meet the increased demand of the higher enrollment from Fall 2012.The AVS 211 course content has been taught as a special topics course for three semesters and is in keeping with the overall goals and requirements of our Techniques series of courses. The AVS 205 course has been taught for a number of years and again is in keeping with the overall goals (hands-on application in a laboratory setting of the lecture material - 2 credit hour course).
- Remove evaluation course/AVS 406 combination as speech general education requirement and replace with COMM 150 or COMM 250 as many veterinary schools require specifically a speech/communications course as a transcript title.

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/27/2012
Form Last Updated by: , Date Form Last Updated: 10/10/2012
Form Number: 5372

Approval

Kristine Vernon			
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Sheers	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Doris R Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jeff Whittemore	10/11/12	Doris R Helms	2/3/13
College Dean	Date	President	Date

for

AVS Pre-Veterinary & Science Concentration 2013-2014

Freshman			
Fall		**Spring**	
AVS 100 Orientation to AVS	1	BIOL 104 General Biology II and	3
AVS 150 Introduction to Animal Science	3	BIOL 106 General Biology Lab II *or*	1
AVS 151 Intro to Animal Science Lab	1	BIOL 111 Principles of Biology II	5
BIOL 103 General Biology *and*	3	CH 102 General Chemistry	4
BIOL 105 General Biology Lab *or*	1	ENGL 103 Accelerated Composition	3
BIOL 110 Principles of Biology	5	MTHSC 102 Intro. To Math. Analysis *or*	3
CH 101 General Chemistry	4	MTHSC 106 Calculus of One Variable I	4
Arts and Humanities (Non-Lit.) Requirement[1]	3	AVS Techniques Requirement[2]	2
TOTAL	16-17	**TOTAL**	16-18

Sophomore			
Fall		**Spring**	
CH 223 Organic Chemistry	3	CH 224 Organic Chemistry	3
CH 227 Organic Chemistry Lab.	1	CH 228 Organic Chemistry Lab.	1
PHYS 207 General Physics I	3	EXST 301 Introductory Statistics *or*	3
PHYS 209 General Physics I Lab.	1	MTHSC 203 Elem Statistical Inference	3
Arts and Humanities (Literature) Req.[1]	3	PHYS 208 General Physics II	3
AVS Techniques Requirement[2]	2	PHYS 210 General Physics II Lab.	1
Social Science Requirement[1]	3	Oral Communication Requirement[3]	3
		AVS Techniques Requirement[2]	2
TOTAL	16	**TOTAL**	16

Junior			
Fall		**Spring**	
AVS 301 Anat. and Phys. of Domestic Anim.	4	AVS 375 Applied Animal Nutrition	3
AVS 310 Animal Health	3	AVS 453 Animal Reproduction	3
AVS 370 Principles of Animal Nutrition	3	GEN 300 Molecular and General Genetics[5]	3
BIOCH 301 Molecular Biochemistry *or*	3	MICRO 305 General Microbiology[5]	4
BIOCH 305 Essential Elements of		AVS Experience Based Activity[6]	1
Biochemistry *or*	3		
BIOCH 406 Physiological Chemistry	3		
Departmental Requirement[4]	3		
TOTAL	16	**TOTAL**	14

Senior			
Fall		**Spring**	
AVS 406 Seminars and Related Topics	2	AVS 410 Domestic Animal Behavior	3
AVS 415 Contemporary Issues in Animal Sci.	3	AVS 413 Animal Products	3
AVS Techniques Requirement[2]	2	AVS Experience Based Activity[6]	2
Departmental Requirement[4]	3	Departmental Requirement[4]	3
Elective	3	Social Science Requirement[1]	3
AVS 400	1		
TOTAL	14	**TOTAL**	14

TOTAL 122-125

Prevet. and Science	Hours
Techniques (4)	8
~~Evaluation~~	~~(2)~~
Departmental Requirements	9
Experience Based Activity	3
Electives	3

AVS Preveterinary & Science Concentration

[1]See General Education Requirements. Must be from two separate fields. AP EC and ECON are considered the same field. Three of these credits must satisfy the Cross-Cultural Awareness requirement.

[2]Select from:

AVS 200 Beef Cattle Techniques
AVS 201 Poultry Techniques
AVS 203 Dairy Techniques
AVS 204 Equine Techniques
AVS 205 Horsemanship Techniques
AVS 206 Swine Techniques
AVS 209 Livestock Exhibition Techniques
AVS 211 Meat Processing Techniques
AVS 302 Livestock Selection and Evaluation
AVS 309 Principles of Equine Evaluation
AVS 311 Dairy Cattle Selection
AVS 323 Poultry and Poultry Products Evaluation
AVS 405 Advanced Selection and Evaluation
AVS 455 Animal Reproductive Management

[3]Oral communication requirement can be met by:

COMM 150
COMM 250

[4]Select 9 hours from any graded (not pass/fail) 300/400 level course and/or any of the following 100/200 level courses:

ACCT 201 Financial Accounting Concepts (3)
APEC 202 Agricultural Economics (3)
Or ECON 211 Principles of Microeconomics (3)
ECON 212 Principles of Macroeconomics (3)
CSENV 202 Soils (4)
MGT 201 Principles of Management (3)
BIOSC 222 Human Anatomy and Physiology I (3)
BIOSC 223 Human Anatomy and Physiology II (3)
SPAN 101 Elementary Spanish (4)
SPAN 102 Elementary Spanish (4)

[5]May take GEN 300 and MICRO 305 in either semester of the Junior year.

[6]Select from:

AVS 360 Internship
AVS 390 Practicum
AVS 441 Teaching Experience
AVS 442 Extension Experience
AVS 443 International Experience
AVS 444 Animal Agribusiness Travel Experience
AVS 491 Undergraduate Research Experience

000021

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Animal and Veterinary Sciences (Animal Agribusiness)
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**

Explanation: For Animal Agribusiness Concentration:
- Add AVS 205 and AVS 211 to the list of possible courses to fulfill AVS Techniques Requirement. These additions will help to provide adequate sections with a reduced number of seats for safety and still meet the increased demand of the higher enrollment from Fall 2012. Both of these courses have been taught in the past and are in keeping with the overall goal of the Departmental Techniques requirement, which is to gain practical, hands-on application of animal and veterinary science techniques learned in a lecture, 2-credit hour courses.
- Add AVS 401 and AVS 412 along with AVS 450 to the Animal Production Requirement which was previously fulfilled with just AVS 450. Future employers, graduate schools and undergraduate students have provided feedback to the department that a species-specific production course is important to them, and thus we are broadening the options to meet this skill set and course content previously filled by just AVS 450 to include our Beef and Equine Management/Production courses to the list of options.

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/27/2012
Form Last Updated by: , **Date Form Last Updated:** 10/10/2012
Form Number: 5371

Approval			
Kristine Vernon			
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Skewes	10-11-12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Dennis R. Hall	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Ted Whitwell	10/11/12	Dennis R. Hall for	2/3/13
College Dean	Date	President	Date

James O. Barker

AVS Animal Agribusiness Concentration 2013-2014

Freshman			
Fall		**Spring**	
AVS 100 Orientation to AVS	1	BIOL 104 General Biology II *and*	3
AVS 150 Introduction to Animal Science	3	BIOL 106 General Biology Lab II *or*	1
AVS 151 Intro to Animal Science Lab	1	BIOL 111 Principles of Biology II I	5
BIOL 103 General Biology I *and*	3	CH 102 General Chemistry	4
BIOL 105 General Biology Lab I *or*	1	ENGL 103 Accelerated Composition	3
BIOL 110 Principles of Biology I	5	MTHSC 101 Essen. Math. Informed Soc. *or*	3
CH 101 General Chemistry	4	MTHSC 102 Intro. To Math. Analysis *or*	3
Arts and Humanities (Non-Lit.) Requirement[1]	3	MTHSC 106 Calculus of One Variable	4
		AVS Techniques Requirement[2]	2
TOTAL	16-17	**TOTAL**	16-18

Sophomore			
Fall		**Spring**	
ACCT 201 Financial Accounting Concepts	3	ECON 211 Principles of Microeconomics	3
EXST 301 Introductory Statistics	3	FIN 306 Corporation Finance	3
MGT 201 Principles of Management	3	Arts and Humanities (Literature) requirement[1]	3
AVS Techniques Requirement[2]	3	AVS Evaluation Requirement[3]	2
Elective	3	AVS Techniques Requirement[2]	2
		Social Science Requirement[1]	3
TOTAL	14	**TOTAL**	16

Junior			
Fall		**Spring**	
AVS 301 Anat. and Phys. of Domestic Anim.	4	AVS 375 Applied Animal Nutrition	3
AVS 370 Principles of Animal Nutrition	3	AVS 413 Animal Products	3
AVS 470 Animal Genetics	3	AVS 453 Animal Reproduction	3
ECON 212 Principles of Macroeconomics	3	LAW 322 Legal Environment of Business	3
CSENV 423 Field Crops - Forages	3	Elective	3
TOTAL	16	**TOTAL**	15

Senior			
Fall		**Spring**	
AVS 310 Animal Health	3	AVS 406 Seminars and Related Topics	2
AVS 415 Cont. Issues in Animal Science	3	AVS 410 Domestic Animal Behavior	3
MKT 301 Principles of Marketing	3	AVS 417 Animal Agribusiness Development	2
AVS Experience-Based Activity[4]	2	Production Class[5]	4
AVS Techniques Requirement[2]	2	Experience Based Activity[4]	3
AVS 400	1	Elective	2
TOTAL	14	**TOTAL**	16

TOTAL 123-126

Animal Agribusiness	Hours
Techniques (4)	8
Evaluation	2
Experience Based Activity	5
Elective	8

AVS Animal Agribusiness Concentration

[1]See General Education Requirements. Cannot be ECON or AP EC. Three of these credits must satisfy the Cross-Cultural Awareness requirement.

[2]Select from:

AVS 200 Beef Cattle Techniques
AVS 201 Poultry Techniques
AVS 203 Dairy Techniques
AVS 205 Horsemanship Techniques
AVS 204 Equine Techniques
AVS 206 Swine Techniques
AVS 209 Livestock Exhibition Techniques
AVS 211 Meat Processing Techniques
AVS 302 Livestock Selection and Evaluation
AVS 309 Principles of Equine Evaluation
AVS 311 Dairy Cattle Selection
AVS 323 Poultry and Poultry Products Evaluation
AVS 405 Advanced Selection and Evaluation
AVS 455 Animal Reproductive Management

[3]Select from:

AVS 302 Livestock Selection and Evaluation,
AVS 309 Principles of Equine Evaluation,
AVS 311 Dairy Cattle Selection, or
AVS 323 Poultry and Poultry Products Evaluation

[4] Select from:

AVS 360 Internship
AVS 390 Practicum
AVS 441 Teaching Experience
AVS 442 Extension Experience
AVS 443 International Experience
AVS 444 Animal Agribusiness Travel Experience
AVS 491 Undergraduate Research Experience

[5]Select from:

AVS 450 Sustainable Production Systems
AVS 401 Beef Production
AVS 412 Advanced Horse Management

000024

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Animal and Veterinary Sciences (Equine Business)
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**

Explanation: For the Equine Business Concentration:
- Add AVS 205 and AVS 211 to the list of possible courses to fulfill AVS Techniques Requirement. These additions will help to provide adequate sections with a reduced number of seats for safety and still meet the increased demand of the higher enrollment from Fall 2012. Additionally, these courses have been successfully taught and fulfill the AVS department's goal of hands-on application of animal and veterinary science techniques learned in a lecture in a 2-credit course format.

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/27/2012
Form Last Updated by: KVERNON, Kristine Vernon **Date Form Last Updated:** 10/10/2012
Form Number: 5370

Approval

Kristine Vernon			
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Peter Sheers	10/11/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Jeel Whitmore	10/11/12	Doris R Helms	4/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Robert J. Kowalski	10/11/12	Doris R Helms	2/3/13
College Dean	Date	President	Date

AVS Equine Business Concentration 2013-2014

Freshman

Fall		Spring	
AVS 100 Orientation to AVS	1	BIOL 104 General Biology II *and*	3
AVS 150 Introduction to Animal Science	3	BIOL 106 General Biology Lab II *or*	1
AVS 151 Intro to Animal Science Lab	1	BIOL 111 Principles of Biology II I	5
BIOL 103 General Biology I *and*	3	CH 102 General Chemistry	4
BIOL 105 General Biology Lab I *or*	1	ENGL 103 Accelerated Composition	3
BIOL 110 Principles of Biology I	5	MTHSC 101 Essen. Math. Informed Soc. *or*	3
CH 101 General Chemistry	4	MTHSC 102 Intro. To Math. Analysis *or*	3
Arts and Humanities (Non-Lit.) Requirement[1]	3	MTHSC 106 Calculus of One Variable	4
		AVS Techniques Requirement[2]	2
TOTAL	16-17	**TOTAL**	16-18

Sophomore

Fall		Spring	
ACCT 201 Financial Accounting Concepts	3	AVS 309 Principles of Equine Evaluation	2
AVS 204 Horse Care Techniques	2	ECON 211 Principles of Microeconomics	3
Elective	3	FIN 306 Corporation Finance	3
EXST 301 Introductory Statistics	3	Arts and Humanities (Literature) requirement[1]	3
MGT 201 Principles of Management	3	AVS Techniques Requirement[2]	2
		Social Science Requirement[1]	3
TOTAL	14	**TOTAL**	16

Junior

Fall		Spring	
AVS 301 Anat. and Phys. of Domestic Anim.	4	AVS 375 Applied Animal Nutrition	3
AVS 370 Principles of Animal Nutrition	3	AVS 453 Animal Reproduction	3
AVS 470 Animal Genetics	3	LAW 322 Legal Environment of Business	3
ECON 212 Principles of Macroeconomics	3	MKT 301 Principles of Marketing	3
CSENV 423 Field Crops - Forages	3	AVS Techniques Requirement[2]	2
TOTAL	16	**TOTAL**	14

Senior

Fall		Spring	
AVS 310 Animal Health	3	AVS 410 Domestic Animal Behavior	3
AVS 406 Seminars and Related Topics	2	AVS 412 Advanced Equine Management	4
AVS 415 Cont. Issues in Animal Science	3	AVS 417 Animal Agribusiness Development	2
AVS 416 Equine Exercise Physiology	4	Elective	5
AVS Experience-Based Activity[3]	2		
AVS 400	1		
TOTAL	15	**TOTAL**	14

TOTAL 121-124

Animal Agribusiness	Hours
Techniques (4)	8
Evaluation	2
Experience Based Activity	2
Elective	8

AVS Equine Business Concentration

[1]See General Education Requirements. Cannot be AP EC or ECON. Three of these credits must satisfy the Cross-Cultural Awareness requirement.

[2]Select from:

AVS 200 Beef Cattle Techniques
AVS 201 Poultry Techniques
AVS 203 Dairy Techniques
AVS 205 Horsemanship Techniques
AVS 206 Swine Techniques
AVS 209 Livestock Exhibition Techniques
AVS 211 Meat Processing Techniques
AVS 302 Livestock Selection and Evaluation
AVS 309 Principles of Equine Evaluation
AVS 311 Dairy Cattle Selection
AVS 323 Poultry and Poultry Products Evaluation
AVS 405 Advanced Selection and Evaluation
AVS 455 Animal Reproductive Management

[3] Select from:

AVS 360 Internship
AVS 390 Practicum
AVS 441 Teaching Experience
AVS 442 Extension Experience
AVS 443 International Experience
AVS 444 Animal Agribusiness Travel Experience
AVS 491 Undergraduate Research Experience

CLEMSON UNIVERSITY

000027

Curriculum and Course Change System - Print Change/Delete Course Form

X**Change a Course - Abbrev & Number: CSENV- 455**
Corresponding Lab Course: --
Corresponding Honors course: --
..**Add Honors course:** --
Corresponding Graduate course: --
..**Add Graduate course:** --
Course Title: SEMINAR

Brief Statement of Change:
We would like to change the course description to reflect a change in the learning objectives. The new course will include presentations of interdisciplinary topics and original research in agronomy, entomology, plant pathology, soils, and related sciences.

Last Term taught:0401	..**Change Abbrev to:**	
Effective Term:01/2013	..**Change Number to:**	
..**Change Catalog Title:**	..**Change Transcript Title:**	
from:	from: SEMINAR	
to:	to:	
..	From: Fixed Credit: 1 (1,)	To: Fixed Credit: (,)
Change of Credit	Variable Credit: - (-), (-)	Variable Credit: - (-),(-)

.. Add cross-listing with the following child course(s):

.. Delete cross-listing with the following child course(s):

.. **Reverse Parent/Child relationship with:**

..**Change Method of Instruction**		..**Change Course Modifier**		..**Change General Education Designation**	
from:	to:	from:	to:	from:	to:
..A-Lecture Only	..	..Pass/Fail Only	..	..English Composition	..
..B-Lab (w/fee)	..	XGraded	..	..Oral Communication	..
XD-Seminar	..	..Variable Title	..	..Mathematics	..
..E-Independent Study	..	..Creative Inquiry	..	..Natural Science w/Lab	..
..F-Tutorial (w/fee)	..	..Repeatable	..	..Math or Science	..
..G-Studio	..	maximum credits		..A&H (Literature)	..
..H-Field course	..	from:		..A&H (Non-Literature)	..
..I-Study Abroad	..	to:		..Social Science	..
..L-Lab (no/fee)	..			..CCA	..
..N/B-Lecture/Lab(w/fee)	..			..STS	..
..N/L-Lecture/Lab(no fee)	..				

X**Change Catalog Description:**
from: Student presentation of current agronomic topics of special interest in crop production appearing in recent scientific journals and other publications.
to: Presentation of interdisciplinary topics and original research in agronomy, entomology, plant pathology, soils, and related sciences.

..**Change Prerequisite(s):**
from:
to:

Learning Objectives: Students will learn about current topics in soils and sustainable agriculture, and related sciences.

Topical Outline: Week 1. Plant Nematology
Week 2. Entomology, Industry perspective
Week 3. Irrigation. Soil and Water Environmental Science
Week 4. Research proposals. Plant Diseases.
Week 5. Plant Physiology
Week 6. Aquatic Entomology
Week 7. Agricultural Entomology
Week 8. Research Proposals. Plant Sciences
Week 9. Soil sciences
Week 10. Plant Breeding
Week 11. Agronomy
Week 12. Bioinformatics
Week 13. Research Proposals. Entomology
Week 14. Biotechnology
Week 15. Plant Virology

Evaluation: Attendance at all seminars is mandatory. Students are responsible for contacting the instructor in advance if they have a conflict for which they will need to be excused. If a student misses a scheduled seminar for any reason, they must attend an alternate seminar and submit a one-page summary of the presentation within one week of the missed seminar. For each seminar missed and not made up within one week of the missed seminar, students will lose half a letter grade.

Grading
Grades will be assigned as follows:
A - 90-100%
B - 80-89%
C - 70-79%
D - 60-69%
F - below 60%

Form Originator:PAGUDEL, Paula Agudelo**Date Form Created:** 9/13/2012
Form Last Updated by: , **Date Form Last Updated:** 9/26/2012
Form Number: 5256

000028

Approval

	9/27/12		11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Patricia H Layton	9/28/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kosinski	10/17/12		2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jed Whittemore	10/16/12		2/3/13
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000029

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form**

X **Change a Course - Abbrev & Number: SSCS- 101**
Corresponding Lab Course: --
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: --
.. **Add Graduate course:** --
Course Title: SURV SOIL & SUS CROP

Brief Statement of Change:
We would like to merge the contents of SSCS 102 Academic and Professional Development into this course. We believe we can more effectively deliver the topics of professional and academic development within the context of the disciplines that are being introduced in SSCS101.

Last Term taught: 1108	.. **Change Abbrev to:**	
Effective Term: 01/2013	.. **Change Number to:**	
.. **Change Catalog Title:**	.. **Change Transcript Title:**	
from:	from: SURV SOIL & SUS CROP	
to:	to:	
.. **Change of Credit**	From: Fixed Credit: 1 (1,) Variable Credit: - (-), (-)	To: Fixed Credit: (,) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**
.. **Delete cross-listing with the following child course(s):**
.. **Reverse Parent/Child relationship with:**

.. **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
X A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no fee)	..			.. CCA	..
.. N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

X **Change Catalog Description:**
from: Introduces majors to Soils and Sustainable Crop Systems concentrations, careerpaths, faculty, and University resources.
to: Introduces majors to Soils and Sustainable Crop Systems concentrations, career paths, faculty, and University resources. Discusses academic and professional development skills.

.. **Change Prerequisite(s):**
from:
to:

Learning Objectives: Students will participate in activities that introduce them to Soils and Sustainable Crop Systems concentrations, career paths, faculty, and University resources.
Students will complete assignments and participate in discussions that are designed to develop their academic and professional development skills.

Topical Outline: 15 hours of theory, distributed among the following topics:
Week 1. Introduction to topics and methodology
Week 2. ePortfolios
Weeks 3 and 4. Career Opportunities and Professional Development
Week 5. Plant Pathology
Week 6. Entomology
Week 7. Crop Improvement
Week 8. Soil and Water Management
Week 9. Academic and Professional Integrity
Week 10. Conflict of Interests
Weeks 11 and 12. Applied Environmental Ethics
Weeks 13, 14, and 15. Student Scientific Presentations

Evaluation: 10% Participation
15% First exam
15% Conflict of Interests case study
10% Scientific presentation
15% Second exam
15% Applied Environmental Ethics Topic Presentation
20% Environmental Ethics Essay

A - 90-100%
B - 80-89%
C - 70-79%
D - 60-69%

F - below 60%

000030

Form Originator: PAGUDEL, Paula Agudelo **Date Form Created:** 9/13/2012
Form Last Updated by: , Date Form Last Updated: 10/10/2012
Form Number: 5254

Approval

	10/11/12		11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/12/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/12		2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/12		2/3/13
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY

000031

Curriculum and Course Change System - Print Change/Delete Course Form

X**Delete a Course - Abbrev & Number: SSCS- 102**
Corresponding Graduate Course: --
..**Corresponding Honors course:** --

Course Title: ACAD PROF DEV I

Brief Statement of Change:
We will merge the content of this course with that of SSCS101 Survey of Soils, and Sustainable Crop Systems. After teaching these two courses for several years, we now believe merging them into one course will provide a more effective way to deliver the content.

Last Term taught:1201
Effective Term:01/2013

Form Originator:PAGUDEL, Paula Agudelo**Date Form Created:** 9/13/2012
Form Last Updated by: , Date Form Last Updated: 9/13/2012
Form Number: 5250

Approval

Chair, Department Curriculum Committee	9/27/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	9/28/12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	10/11/12 Date	Provost	2/3/13 Date
College Dean	10/11/12 Date	President	2/3/13 Date
Director, Calhoun Honors College	Date		

000032

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form**

X**Change a Course - Abbrev & Number: SSCS- 401**
Corresponding Lab Course: --
Corresponding Honors course: --
..**Add Honors course:** --
Corresponding Graduate course: --
..**Add Graduate course:** --
Course Title: ACAD PROF DEV II

Brief Statement of Change:
We would like to remove the numeral II from the title of this course because after elimination of SSCS 102 Academic and Professional Development I, the numeral II is no longer correct.

Last Term taught:1201		..**Change Abbrev to:**
Effective Term:01/2013		..**Change Number to:**
X**Change Catalog Title:**		X**Change Transcript Title:**
from: Academic and Professional Development II		from: ACAD PROF DEV II
to: Academic and Professional Development		to: ACAD & PROF DEV
..	From: Fixed Credit: 1 (1,)	To: Fixed Credit: (,)
Change of Credit	Variable Credit: - (-), (-)	Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**
.. **Delete cross-listing with the following child course(s):**
.. **Reverse Parent/Child relationship with:**

..**Change Method of Instruction**		..**Change Course Modifier**		..**Change General Education Designation**	
from:	to:	from:	to:	from:	to:
XA-Lecture Only	..	..Pass/Fail Only	..	..English Composition	..
..B-Lab (w/fee)	..	XGraded	..	..Oral Communication	..
..D-Seminar	..	..Variable Title	..	..Mathematics	..
..E-Independent Study	..	..Creative Inquiry	..	..Natural Science w/Lab	..
..F-Tutorial (w/fee)	..	..Repeatable	..	..Math or Science	..
..G-Studio	..	maximum credits		..A&H (Literature)	..
..H-Field course	..	from:		..A&H (Non-Literature)	..
..I-Study Abroad	..	to:		..Social Science	..
..L-Lab (no/fee)	..			..CCA	..
..N/B-Lecture/Lab(w/fee)	..			..STS	..
..N/L-Lecture/Lab(no fee)	..				

..**Change Catalog Description:**
from:
to:

..**Change Prerequisite(s):**
from:
to:

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator:PAGUDEL, Paula Agudelo**Date Form Created:** 9/13/2012
Form Last Updated by: PAGUDEL, Paula Agudelo**Date Form Last Updated:** 9/13/2012
Form Number: 5253

Approval

Chair, Department Curriculum Committee	9/27/12	Chair, Undergraduate Curriculum Committee	11/2/2012
Department Chair	9/28/12	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	10/11/12	Provost	2/3/13
College Dean	10/11/12	President	2/3/13
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

000033

Change Major Name: Sscs (Agricultural Biotechnology)
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**
Explanation: We propose to:
- Eliminate SSCS 102 Academic and Professional Development as a requirement for the second semester of the Freshman and Year. The content of this course will be merged with SSCS 101 Survey of Soils and Sustainable Crop Systems, as detailed in the corresponding change of course and delete course forms.

- Change SSCS 333 Agricultural Genetics in the first semester of the Sophomore Year to GEN 300 Fundamental Genetics. And, in turn, change GEN 300 Fundamental Genetics in the second semester of the Sophomore Year to 3 credits of Concentration Requirement. This will allow students to get a broader and more complete introduction to Genetics of a diversity of organisms.

- Eliminate GEN 301 Fundamental Genetics Lab as a requirement in the second semester of the Sophomore Year. We were informed this course will only be offered to Genetics and Biochemistry majors.

- Change SSCS 451 Agricultural Biotechnology and Global Society in the second semester of the Senior Year to CSENV 455 Seminar, and move to the second semester of the Sophomore Year. The nature and course description of CSENV 455 has been changed to a seminar of interdisciplinary topics and original research in agronomy, entomology, plant pathology, soils, and related sciences. The new seminar will be an improved course with opportunity for better interaction with the other two concentrations in Soils, and Sustainable Crop Systems.

-Reduce the concentration requirement in the second semester of the Junior year from 4 to 3 credits, making many of the 3-credit courses in the depatment approved list acceptable for this requirement, as there were not many 4-credit courses listed.

- With the proposed changes, the overall total of the program will be reduced from 125-127 hours to 122-124 hours.
Form Originator: PAGUDEL, Paula Agudelo **Date Form Created:** 9/13/2012
Form Last Updated by: , **Date Form Last Updated:** 9/28/2012
Form Number: 5247

Approval

Chair, Department Curriculum Committee	Date 9/28/12	Chair, Undergraduate Curriculum Committee	Date 11/2/2012
Department Chair	Date 9/28/12	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	Date 10/11/12	Provost	Date 2/3/13
College Dean	Date 10/11/12	President	Date 2/3/13

SOILS AND SUSTAINABLE CROP SYSTEMS

Bachelor of Science

The BS degree program in Soils and Sustainable Crop Systems is a multidisciplinary program that educates students with expertise in soils, crop sciences, and applied agricultural biotechnology. It offers students a rigorous, science-based degree with educational opportunities related to management of agricultural commodities and natural resources, as well as soil and water resources. Students can tailor the program to fit their professional and academic goals by selecting one of three concentrations.

The Agricultural Biotechnology Concentration integrates conventional disciplines with molecular advances in plants, pathogens, and biosystem interactions and responds to the educational void between the rapid adoption of biotechnology products into agricultural production and the intermediate- and end-users, farmers, and consumers. Graduates in this concentration will be competitive as scientists in emerging agricultural biotechnology industries, as educators, and as policy makers and officers in regulatory agencies.

Students with a concentration in Soil and Water Environmental Science can address compelling problems such as land application of agricultural and industrial wastes, reduction of contamination of ground and surface waters, establishment of functional septic drain fields, and production of food and fiber crops. Graduates will be able to establish careers in traditional agrarian fields such as soil scientists and conservationists, extension agents, and farm consultants, and in the broader environmental arenas of DHEC, consulting engineering firms, and environmental consulting. Graduates will be well prepared for graduate work in fields ranging from soil science to environmental engineering and law.

Students with a concentration in Sustainable Crop Production will graduate with comprehensive knowledge to increase farm profits by decreasing the costs of crop and production; build soil tilth and fertility through rotations, multiple cropping, and nutrient cycling; protect the environment by minimizing or more efficiently using synthetic agrichemicals; manage crop pests and weeds with integrated, ecologically sound strategies; develop strategies for profitable marketing of agricultural commodities; and create a strong, diversified agriculture that is stable through market and weather fluctuations. Graduates can assume positions as self-employed farmers, farm managers, state and federal natural resource managers, research technicians, agricultural industry employees, greenhouse managers, consultants in pest management and sustainable agriculture, field ecology professionals, agritourism industry specialists, extension personnel, or regulatory officers.

AGRICULTURAL BIOTECHNOLOGY CONCENTRATION

Freshman Year

First Semester

5 - BIOL 110 Principles of Biology I[1]
4 - CH 101 General Chemistry
3 - MTHSC 102 Intro. to Math. Analysis[2] *or*
4 - MTHSC 106 Calculus of One Variable I[2]
1 - SSCS 101 Survey of Soils and Sustainable Crop Systems
3 - Arts and Humanities (Non-Lit.) Requirement[3]
16-17

Second Semester

5 - BIOL 111 Principles of Biology II[1]
4 - CH 102 General Chemistry
3 - ENGL 103 Accelerated Composition
3 - EX ST 301 Introductory Statistics *or*
4 - MTHSC 108 Calculus of One Variable II *or*
4 - MTHSC 207 Multivariable Calculus
~~1 - SSCS 102 Academic and Professional Dev. I~~
15-16~~17~~

[1] BIOL 110 and 111 are strongly recommended; however, BIOL 103/105 may substitute for BIOL 110, and BIOL 104/106 may substitute for BIOL 111.
[2] MTHSC 106 is recommended for students in the Agricultural Biotechnology Concentration.
[3] See General Education Requirements. PHIL 103 is recommended for students in the Agricultural Biotechnology Concentration.

Sophomore Year

First Semester

3 - CH 223 Organic Chemistry
1 - CH 227 Organic Chemistry Lab.
3 - COMM 150 Intro. to Human Comm. *or*
3 - COMM 250 Public Speaking
3 - ECON 200 Economic Concepts *or*
3 - ECON 211 Principles of Microeconomics
3 - GEN 300 Fundamental Genetics ~~SSCS 333 Agricultural Genetics~~
3 - Arts and Humanities (Literature) Requirement[1]
16

Second Semester

3 - AP EC 205 Agriculture and Society
3 - BIOSC 335 Evolutionary Biology
3 - CH 224 Organic Chemistry
1 - CH 228 Organic Chemistry Lab.
3 - Concentration requirement
~~3 - 300 Fundamental Genetics~~
~~1 - GEN 301 Fundamental Genetics Lab.~~
1 - CSENV 455 Seminar
14

Junior Year

First Semester

3 - BIOCH 305 Essential Elements of Biochem.
3 - BIOSC 304 Biology of Plants
2 - BIOSC 434 Biological Chem. Lab. Tech
3 - CSENV 422 Major World Crops
3 - SSCS 335 Agricultural Biotechnology
3 - Social Science Requirement[1]
17

Second Semester

1 - CSENV (SSCS) 350 Practicum
3 - ENGL 314 Technical Writing *or*
3 - ENGL 315 Scientific Writing and Comm.
3 - PL PA 310 Principles of Plant Pathology ~~Plant Diseases and People~~
3 - PL PH (BIOSC) 340 Plant Med. and Magic
1 - SSCS 401 Academic and Professional Dev. ~~II~~
3 - Concentration Requirement[2]
14~~15~~

Senior Year

First Semester

3 - BIOSC 401 Plant Physiology
1 - BIOSC 402 Plant Physiology Lab.
3 - CSENV (SSCS) 350 Practicum
4 -ENT (BIOSC) 301 Insect Biology and Diversity
1 - SSCS 445 Regulatory Issues and Policies
1 - SSCS 450 Agric. Biosystems and Risk Assess.
3 - Concentration Requirement[2]
16

Second Semester

2 - CSENV (SSCS) 350 Practicum
3 - CSENV 409 Biology of Invasive Plants
~~1 - SSCS 151 Agric. Biotech. and Global Society~~
9 - Concentration Requirement[2]
14~~15~~
122-124 ~~125-127~~ Total Semester Hours

[1] See General Education Requirements.
[2] Select from a department approved list. Courses to support proficiency in a foreign language also are encouraged.

000035

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Sscs (Soil/Water Environmental Sci)
Degree: BS
Effective Catalog Year: 2013
..**Change Major Name to:**
..**Change Degree to:** (CHE approval required)
X**Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
..**Change General Education Requirements**
(Must also submit a General Education Checklist)
..**Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
..**Add, Change or Delete Emphasis Area(s)**
Explanation: - Eliminate SSCS 102 Academic and Professional Development as a requirement for the second semester of the Freshman and Year. The content of this course will be merged with SSCS 101 Survey of Soils and Sustainable Crop Systems, as detailed in the corresponding change of course and delete course forms.
Form Originator: PAGUDEL, Paula Agudelo **Date Form Created:** 9/13/2012
Form Last Updated by: , **Date Form Last Updated:** 9/13/2012
Form Number: 5248

Approval

Chair, Department Curriculum Committee	9/27/12	Chair, Undergraduate Curriculum Committee	11/2/2012
Department Chair	9/28/12	Chair, Graduate Curriculum Committee	
Chair, College Curriculum Committee	10/11/12	Provost	2/3/13
College Dean	10/11/12	President	2/3/13

SOILS AND SUSTAINABLE CROP SYSTEMS

Bachelor of Science

The BS degree program in Soils and Sustainable Crop Systems is a multidisciplinary program that educates students with expertise in soils, crop sciences, and applied agricultural biotechnology. It offers students a rigorous, science-based degree with educational opportunities related to management of agricultural commodities and natural resources, as well as soil and water resources. Students can tailor the program to fit their professional and academic goals by selecting one of three concentrations.

The Agricultural Biotechnology Concentration integrates conventional disciplines with molecular advances in plants, pathogens, and biosystem interactions and responds to the educational void between the rapid adoption of biotechnology products into agricultural production and the intermediate- and end-users, farmers, and consumers. Graduates in this concentration will be competitive as scientists in emerging agricultural biotechnology industries, as educators, and as policy makers and officers in regulatory agencies.

Students with a concentration in Soil and Water Environmental Science can address compelling problems such as land application of agricultural and industrial wastes, reduction of contamination of ground and surface waters, establishment of functional septic drain fields, and production of food and fiber crops. Graduates will be able to establish careers in traditional agrarian fields such as soil scientists and conservationists, extension agents, and farm consultants, and in the broader environmental arenas of DHEC, consulting engineering firms, and environmental consulting. Graduates will be well prepared for graduate work in fields ranging from soil science to environmental engineering and law.

Students with a concentration in Sustainable Crop Production will graduate with comprehensive knowledge to increase farm profits by decreasing the costs of crop and production; build soil tilth and fertility through rotations, multiple cropping, and nutrient cycling; protect the environment by minimizing or more efficiently using synthetic agrichemicals; manage crop pests and weeds with integrated, ecologically sound strategies; develop strategies for profitable marketing of agricultural commodities; and create a strong, diversified agriculture that is stable through market and weather fluctuations. Graduates can assume positions as self-employed farmers, farm managers, state and federal natural resource managers, research technicians, agricultural industry employees, greenhouse managers, consultants in pest management and sustainable agriculture, field ecology professionals, agritourism industry specialists, extension personnel, or regulatory officers.

SOIL AND WATER ENVIRONMENTAL SCIENCE CONCENTRATION

Freshman Year

First Semester

5 - BIOL 110 Principles of Biology I[1]
4 - CH 101 General Chemistry
3 - MTHSC 102 Intro. to Math. Analysis[2] *or*
4 - MTHSC 106 Calculus of One Variable I[2]
1 - SSCS 101 Survey of Soils and Sustainable Crop Systems
3 - Arts and Humanities (Non-Lit.) Requirement[3]
16-17

Second Semester

5 - BIOL 111 Principles of Biology II[1]
4 - CH 102 General Chemistry
3 - ENGL 103 Accelerated Composition
3 - EX ST 301 Introductory Statistics *or*
4 - MTHSC 108 Calculus of One Variable II *or*
4 - MTHSC 207 Multivariable Calculus
~~1 - SSCS 102 Academic and Professional Dev. I~~
15-16~~-17~~

[1] BIOL 110 and 111 are strongly recommended; however, BIOL 103/105 may substitute for BIOL 110, and BIOL 104/106 may substitute for BIOL 111.
[2] MTHSC 106 is recommended for students in the Agricultural Biotechnology Concentration.
[3] See General Education Requirements. PHIL 103 is recommended for students in the Agricultural Biotechnology Concentration.

Sophomore Year

First Semester

3 - CH 223 Organic Chemistry *and*
1 - CH 227 Organic Chemistry Lab. *or*
4 - CH 201 Survey of Organic Chemistry
4 - CSENV 202 Soils
3 - GEOL 101 Physical Geology
1 - GEOL 103 Physical Geology Lab.
3 - PHYS 207 General Physics I *and*
1 - PHYS 209 General Physics I Lab. *or*
3 - PHYS 122 Physics with Calculus I *and*
1 - PHYS 124 Physics Lab. I
16

Second Semester

3 - PHYS 208 General Physics II *and*
1 - PHYS 210 General Physics II Lab. *or*
3 - PHYS 221 Physics with Calculus II *and*
1 - PHYS 223 Physics Lab. II
3 - Arts and Humanities (Literature) Requirement[1]
3 - Cross-Cultural Awareness Requirement[1]
4 - Concentration Requirement[2]
14

Junior Year

First Semester

3 - COMM 150 Intro. to Human Comm. *or*
3 - COMM 250 Public Speaking
4 - MICRO 305 General Microbiology
5 - Concentration Requirement[2]
3 - Plant Science Requirement[3]
15

Second Semester

3 - CSENV 490 Beneficial Soil Organisms in Plant Growth
3 - ENGL 314 Technical Writing *or*
3 - ENGL 315 Scientific Writing and Comm.
3 - GEOL 408 Geohydrology
1 - SSCS 401 Academic and Professional Dev. II
3 - Concentration Requirement[2]
3 - Social Science Requirement[1]
16

Senior Year

First Semester

3 - CSENV (SSCS) 350 Practicum
2 - CSENV 403 Soil Genesis and Classification
1 - CSENV 455 Seminar
3 - Applied Spatial Technology Requirement[4]
3 - Concentration Requirement[2]
3 - Field Scale Environmental Mgt. Requirement[5]
15

Second Semester

3 - AGRIC (EN SP) 315 Environment and Agric.
3 - BIOSC 401 Plant Physiology *and*
1 - BIOSC 402 Plant Physiology Lab.
3 - CSENV (B E) 408 Land Treatment of Wastewater and Sludges
3 - Concentration Requirement[2]
3 - Social Science Requirement[1]
16

123-125 ~~124-126~~ Total Semester Hours

[1] See General Education Requirements. [2] Selected from department-approved list. [3] BIOSC 441, CSENV 421, 422, 423, (AP EC) 426, or HORT 456. [4] AG M 410, FOR 433, or other course approved by advisor. [5] AG M 402, ENTOX 421, or other course approved by advisor.

000037

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Sscs (Sustainable Crop Production)
Degree: BS
Effective Catalog Year: 2013
..**Change Major Name to:**
..**Change Degree to:** (CHE approval required)
X**Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
..**Change General Education Requirements**
(Must also submit a General Education Checklist)
..**Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
..**Add, Change or Delete Emphasis Area(s)**
Explanation: - Eliminate SSCS 102 Academic and Professional Development as a requirement for the second semester of the Freshman and Year. The content of this course will be merged with SSCS 101 Survey of Soils and Sustainable Crop Systems, as detailed in the corresponding change of course and delete course forms.
Form Originator: PAGUDEL, Paula Agudelo **Date Form Created:** 9/13/2012
Form Last Updated by: , **Date Form Last Updated:** 9/13/2012
Form Number: 5249

Approval

Chair, Department Curriculum Committee	Date 9/27/12	Chair, Undergraduate Curriculum Committee	Date 11/2/2012
Department Chair	Date 9/28/12	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	Date 10/11/12	Provost	Date 2/3/13
College Dean	Date 10/11/12	President for	Date 2/3/13

SOILS AND SUSTAINABLE CROP SYSTEMS

Bachelor of Science

The BS degree program in Soils and Sustainable Crop Systems is a multidisciplinary program that educates students with expertise in soils, crop sciences, and applied agricultural biotechnology. It offers students a rigorous, science-based degree with educational opportunities related to management of agricultural commodities and natural resources, as well as soil and water resources. Students can tailor the program to fit their professional and academic goals by selecting one of three concentrations.

The Agricultural Biotechnology Concentration integrates conventional disciplines with molecular advances in plants, pathogens, and biosystem interactions and responds to the educational void between the rapid adoption of biotechnology products into agricultural production and the intermediate- and end-users, farmers, and consumers. Graduates in this concentration will be competitive as scientists in emerging agricultural biotechnology industries, as educators, and as policy makers and officers in regulatory agencies.

Students with a concentration in Soil and Water Environmental Science can address compelling problems such as land application of agricultural and industrial wastes, reduction of contamination of ground and surface waters, establishment of functional septic drain fields, and production of food and fiber crops. Graduates will be able to establish careers in traditional agrarian fields such as soil scientists and conservationists, extension agents, and farm consultants, and in the broader environmental arenas of DHEC, consulting engineering firms, and environmental consulting. Graduates will be well prepared for graduate work in fields ranging from soil science to environmental engineering and law.

Students with a concentration in Sustainable Crop Production will graduate with comprehensive knowledge to increase farm profits by decreasing the costs of crop and production; build soil tilth and fertility through rotations, multiple cropping, and nutrient cycling; protect the environment by minimizing or more efficiently using synthetic agrichemicals; manage crop pests and weeds with integrated, ecologically sound strategies; develop strategies for profitable marketing of agricultural commodities; and create a strong, diversified agriculture that is stable through market and weather fluctuations. Graduates can assume positions as self-employed farmers, farm managers, state and federal natural resource managers, research technicians, agricultural industry employees, greenhouse managers, consultants in pest management and sustainable agriculture, field ecology professionals, agritourism industry specialists, extension personnel, or regulatory officers.

SUSTAINABLE CROP PRODUCTION CONCENTRATION

Freshman Year

First Semester

5 - BIOL 110 Principles of Biology I[1]
4 - CH 101 General Chemistry
3 - MTHSC 102 Intro. to Math. Analysis[2] *or*
4 - MTHSC 106 Calculus of One Variable I[2]
1 - SSCS 101 Survey of Soils and Sustainable Crop Systems
3 - Arts and Humanities (Non-Lit.) Requirement[3]
16-17

Second Semester

5 - BIOL 111 Principles of Biology II[1]
4 - CH 102 General Chemistry
3 - ENGL 103 Accelerated Composition
3 - EX ST 301 Introductory Statistics *or*
4 - MTHSC 108 Calculus of One Variable II *or*
4 - MTHSC 207 Multivariable Calculus
~~1 - SSCS 102 Academic and Professional Dev. I~~
15-16~~17~~

[1] BIOL 110 and 111 are strongly recommended; however, BIOL 103/105 may substitute for BIOL 110, and BIOL 104/106 may substitute for BIOL 111.
[2] MTHSC 106 is recommended for students in the Agricultural Biotechnology Concentration.
[3] See General Education Requirements. PHIL 103 is recommended for students in the Agricultural Biotechnology Concentration.

Sophomore Year

First Semester

3 - AP EC 202 Agricultural Economics *or*
3 - ECON 211 Principles of Microeconomics
3 - CH 223 Organic Chemistry *and*
1 - CH 227 Organic Chemistry Lab. *or*
4 - CH 201 Survey of Organic Chemistry
4 - CSENV 202 Soils
3 - PL PA 310 Principles of Plant Pathology ~~Plant Diseases and People~~
14

Second Semester

3 - AP EC 205 Agriculture and Society
3 - CH 224 Organic Chemistry *and*
1 - CH 228 Organic Chemistry Lab.[1] *or*
3 - BIOCH 305 Essential Elem. of Biochem. *and*
2 - BIOSC 434 Biological Chemistry Lab. Techniq.
3 - COMM 150 Intro. to Human Comm. *or*
3 - COMM 250 Public Speaking
3 - SSCS 333 Agricultural Genetics
3 - Plant Science Requirement[2]
16

Summer

~~3~~2 - PL PA 411 Plant Disease Diagnosis I

Junior Year

First Semester

4 -ENT (BIOSC) 301 Insect Biology and Diversity
3 - IPM 401 Principles of Integrated Pest Mgt.
3 - Concentration Requirement[3]
3 - Plant Science Requirement[2]
3 - Social Science Requirement[4]
16

Second Semester

3 - BIOSC 401 Plant Physiology
1 - BIOSC 402 Plant Physiology Lab.
3 - CSENV 405 Plant Breeding
3 - CSENV 409 Biology of Invasive Plants
3 - ENGL 314 Technical Writing *or*
3 - ENGL 315 Scientific Writing and Comm.
1 - SSCS 401 Academic and Professional Dev. ~~II~~
14

Senior Year

First Semester

3 - CSENV 490 Beneficial Soil Organisms in Plant Growth
4 - ENT 407 Applied Agricultural Entomology
6 - Concentration Requirement[3]
13

Second Semester

3 - CSENV (SSCS) 350 Practicum
3 - CSENV 452 Soil Fertility and Management
1 - CSENV 453 Soil Fertility Lab.
1 - CSENV 455 Seminar
3 - Arts and Humanities (Literature) Requirement[4]
6 - Concentration Requirement[3]
17

124–126 Total Semester Hours

[1] CH 223/227, and 224/228 are strongly recommended. [2] BIOSC 304, CSENV 422, 423, HORT 310, 455, 456, or other course approved by advisor. [3] Select from department-approved list. [4] See General Education Requirements.

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form** 000039

X **Change a Course - Abbrev & Number: HORT- 409**
Corresponding Lab Course: --
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: --
.. **Add Graduate course:** --
Course Title: SEMINAR

Brief Statement of Change:
HORT 409 is being developed as a capstone course that assesses students' cognitive, affective, and psychomotor learning (kinesthetic skills) and does so using real world professional situations requiring the command, analysis and synthesis of knowledge and skills acquired during their undergraduate experience. The changes proposed require expansion of the course from one to three credit hours due to the inclusion of activities related to professional development and assessment/development of students' cognitive, affective, and psychomotor learning. Course change was identified through evaluation of student assessment and consultations with the Office of Institutional Effectiveness.

Last Term taught: 1201	.. **Change Abbrev to:**
Effective Term: 01/2013	.. **Change Number to:**
X **Change Catalog Title:**	X **Change Transcript Title:**
from: Seminar	from: SEMINAR
to: Senior Capstone Course	to: Capstone

X **Change of Credit**	From: Fixed Credit: 1 (1,) Variable Credit: - (-), (-)	To: Fixed Credit: 3 (3,) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**
.. **Delete cross-listing with the following child course(s):**
.. **Reverse Parent/Child relationship with:**

X **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	X	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
X D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
.. N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

X **Change Catalog Description:**
from: Recent research work on various phases of horticulture, methods of conducting investigations, and preparation of report of investigations.
to: Student cognitive, affective, and psychomotor learning (skills) in the field of environmental horticulture is assessed using real world professional situations requiring the command, analysis and synthesis of knowledge and skills acquired during their undergraduate experience.

X **Change Prerequisite(s):**
from: None
to: Senior standing for HORT majors

Learning Objectives: • Students will identify ethical issues and responses in the field of environmental horticulture and related research.
• Students will demonstrate professional written communication skills in the form of email, reflective essay, and scholarly paragraph.
• Students will demonstrate pertinent kinesthetic skills involved with proper site planning, planting, propagating, and maintenance in the field of environmental horticulture.
• Students will demonstrate pertinent calculations required for site planning and installation, plant production, and plant propagation.
• Students will demonstrate proficiency while engaging in real or mock professional job interviews.
• Students will demonstrate proficiency while leading a professional roundtable discussion and/or focus group.

Topical Outline: Topical Outline:
Week 1 (3 hrs) Review and test botanical nomenclature
Week 2-3 (6 hrs) Review and test calculations
Week 4-5 (6 hrs) Review and test kinesthetic skills
Week 6 (3 hrs) Resume writing
Week 7-8 (6 hrs) Ethical judgment readings, discussions, writing
Week 9-11 (9 hrs) Roundtable discussions with professional practitioners
Week 12-13 (6 hrs) Oral presentations
Week 14-15 (6 hrs) Continuing education opportunities, job interviews

Evaluation: 30% 3 Tests
30% 4 Written communications (resume, email, reflective essay, and scholarly paragraph)
30% 4 Oral communications (oral presentation, interview, group discussion, round table)
10% Attendance/participation
Grades

000040

90-100 = A
80-89 = B
70-79 = C
60-69 = D
59 and below = F

Form Originator: ELLENAV, Ellen Vincent **Date Form Created:** 8/27/2012
Form Last Updated by: , **Date Form Last Updated:** 10/10/2012
Form Number: 5180

Approval

	10/11/12		11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/12/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/12		2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
	10/4/12		2/3/13
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000041

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Horticulture
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
X **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
.. **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**
Explanation: -Add BIOL 104/106 (General Biology II)
-Change Related Science Course Requirements from 19 cr. to 12 cr.
-Make HORT 308 a required course for Horticulture majors
-Change Horticulture Specialization Course Requirements from 15 to 12
-Increase Electives credits from 4 to 6 cr.
-HORT 409 changed from 1 to 3 cr. (pending course change approval)
Form Originator: JFAUST, James Brownfaust **Date Form Created:** 9/14/2012
Form Last Updated by: , Date Form Last Updated: 10/11/2012
Form Number: 5257

Approval

Chair, Department Curriculum Committee	10/11/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	10/14/12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	10/11/12 Date	Provost	2/3/13 Date
College Dean	10/11/12 Date	President	2/3/13 Date

Proposed

000042

Horticulture

Freshman Year

First Semester		
BIOL 103	Gen. Biology I	3
BIOL 105	Gen. Bio. Lab I	1
CH 101	Gen. Chem. I	4
HORT 101	Intro. to Hort.	3
Spanish Language Requirement[1]		4
Semester Hours: 15		

Second Semester		
Business Requirement[2]		3
BIOL 104	General Biology II	3
BIOL 106	General Biology Lab II	1
CH 102	General Chemistry	4
ENGL 103	Accelerated Composition	3
MTHSC 102	Intro. to Math Analysis	3
Semester Hours: 17		

Sophomore Year

First Semester		
Arts & Humanities (Non-Lit) Requirement[2]		3
HORT 210	Growing Garden Plants in the Fall	3
HORT 303	Landscape Plants	3
MTHSC 101	Essential Math	3
Plant Biology Requirement[1]		4
Semester Hours: 16		

Second Semester		
Arts and Humanities (Lit) Requirement[2]		3
CSENV 202	Soils	4
HORT 211	Growing Garden Plants in the Spring	3
Social Science Requirement[1]		3
Semester Hours: 13		

Summer

HORT 271	Internship[3]	3	or	HORT 471	Advanced Internship[3]	3

Junior Year

First Semester		
Business Requirement[1]		3
HORT Specialization Requirement[1]		3
Oral Communications Requirement[2]		3
Related Science Requirement[1]		3
Social Science Requirement[1]		3
Semester Hours: 15		

Second Semester		
BIOSC 401	Plant Physiology	3
BIOSC 402	Plant Physiology Lab	1
Elective		1
HORT 308	Sustainable Landscape Gdn. Design	3
HORT ~~485~~ 305	Plant Propagation	3
HORT ~~486~~ 306	Plant Propagation Tech. Lab	1
HORT Specialization Requirement[2]		3
Semester Hours: 15		

Senior Year

First Semester		
Business Requirement[1]		3
Elective		3
HORT 409	Capstone	3
HORT Specialization Requirement[1]		3
Related Science Requirement[1]		3
Semester Hours: 15		

Second Semester	
Elective	2
HORT Specialization Requirement[1]	3
Related Science Requirement[1]	6
Semester Hours: 11	

Total - 120 hrs

[1] See advisor. Select from approved departmental list.

[2] See General Education Requirements. One humanities or one social science requirement must be a Cross-Cultural Awareness Course.

[3] Internship must be completed in one or two semesters. Internship may be done fall or spring or summer after completing HORT 303. Prior approval is required for internships and a 2.0 is required for registration.

* Horticulture majors must make a C or better in all HORT designated courses.

Horticulture (Continued)

Related Science Courses (choose at least 4 courses – 12 credits, at least one lab course must be taken)

AGM 301	Soil and Water Conservation	3
AGM 402	Drainage Irrigation & Waste Mgmt.	3
BIOSC 320	Field Botany	4
BIOSC 406/407	Introductory Plant Taxonomy	4
BIOSC 441/445	Ecology	5
BIOSC 446/447	Plant Ecology	5
CSENV 405	Plant Breeding	3
CSENV 452/453	Soil Fertility and Management	3/1
EN SP 200	Intro to Environmental Science	3
ENT 300	Environmental Entomology	3
ENT 301	Insect Biology and Diversity	4
ENT 308	Apiculture	3
IPM 401	Principles of Integrated Pest Mgmt.	3
PLPA 31	Plant Diseases and People	3
PLPA 406/408	Diseases and Insects of Turfgrass	2/1
WFB 313	Conservation Biology	3
WFB 462	Wetland Wildlife Biology	3

Advanced Science Options for Graduate School Tract

BIOCH 305	Essential Elements of Biochemistry	3
CH 201	Survey of Organic Chemistry	4
CH 223/227	Organic Chemistry & Lab	4
GEN 300/301	Fundamental Genetics	4
MICRO 305	General Microbiology	4
PHYS 122/124	Physics with Calculus I	4
PHYS 200	Introductory Physics	4
PHYS 207/209	General Physics I	4

Business, Communication & Leadership Courses (choose at least 3 courses – 9 credits)

ACCT 201	Financial Accounting Concepts	3
ACCT 202	Managerial Accounting Concepts	3
All AP EC courses 300 and higher		

All COMM, ECON, FIN, LAW, MGT, MKT courses 300 and higher

All MGT courses 200 and higher

ELE 301, 401, 499 Executive Leadership & Entrepreneurship I, II, III

Horticulture Specialization Courses (choose at least 4 courses – 12 credits)

FOR 450	Woody Plant Stress Physiology	3
FOR 480	Selected Topics in Urban Forestry	1-3
HORT 202	Selected Topics	3
HORT 208	Landscape Appreciation	3
HORT 212	Introduction to Turfgrass Culture	3
HORT 213	Turfgrass Culture Laboratory	1
HORT 309	Sustainable Landscape Design Lab	1
HORT 400	Special Topics (maximum 3 credits)	1-3
HORT 408	Horticulture Discovery and Inquiry	Variable

HORT 412	Advanced Turfgrass Management	3
HORT 420	Applied Turfgrass Physiology	3
HORT 427	Urban Tree Care	3
HORT 433	Landscape & Turf Weed Mgmt.	3
HORT 455	Just Fruits	3
HORT 456	Organic Vegetable Crops	3
HORT 461	Advanced Landscape Garden Design	4
HORT 465	Plant Molecular Biology	3

Spanish Courses (choose at least 1 course – 4 credits)

SPAN 101	Elementary Spanish	4
SPAN 102	Elementary Spanish	4

SPAN 104	Basic Spanish	4
SPAN 202	Intermediate Spanish	4

Plant Biology Requirement – 4 credits

BIOSC 304	Biology of Plants	3

BIOSC 308	Biology of Plants Lab	1

Current

000044

Horticulture

Freshman Year

First Semester		
BIOL 103	General Biology I	3
BIOL 105	General Biology Lab I	1
HORT 101	Horticulture	3
CH 101	General Chemistry	4
Spanish Language Requirement[2]		4
Semester Hours: 15		

Second Semester		
MTHSC 102	Intro. to Math Analysis	3
ENGL 103	Accelerated Composition	3
CH 102	General Chemistry	4
Business Requirement[2]		3
Related Science Requirement[2]		3
Semester Hours: 16		

Sophomore Year

First Semester		
MTHSC 101	Essential Math	3
HORT 210	Growing Garden Plants in the Fall	3
HORT 303	Landscape Plants	3
Arts & Humanities (Non-Lit) Requirement[1]		3
Plant Biology Requirement[2]		4
Semester Hours: 16		

Second Semester		
HORT 211	Growing Garden Plants in the Spring	3
CSENV 202	Soils	4
Arts and Humanities (Lit) Requirement[1]		3
Social Science Requirement[1]		3
Semester Hours: 13		

Summer

HORT 271	Internship	3	or	HORT 471	Advanced Internship[3]	3

Junior Year

First Semester		
HORT Specialization Requirement[2]		3
Business Requirement[2]		3
Oral Communications Requirement[1]		3
Social Science Requirement[1]		3
Related Science Requirement[2]		3
Semester Hours: 15		

Second Semester		
HORT 308	Sustainable Landscapes	3
HORT ~~405~~ 305	Plant Propagation	3
HORT ~~406~~ 306	Plant Propagation Tech. Lab	1
BIOSC 401	Plant Physiology	3
BIOSC 402	Plant Physiology Lab	1
HORT Specialization Requirement[2]		4
Semester Hours: 15		

Senior Year

First Semester		
HORT 409	Seminar	3
HORT Specialization Requirement[2]		3
Business Requirement[2]		3
Related Science Requirement[2]		3
Elective		3
Semester Hours: 15		

Second Semester	
HORT Specialization Requirement[2]	3
Related Science Requirement[2]	6
Elective	3
Semester Hours: 12	

Total - 120 hrs

[1] See General Education Requirements. One humanities or one social science requirement must be a Cross-Cultural Awareness Course.

[2] See advisor. Select from approved departmental list.

[3] Internship must be completed in one or two semesters. Internship may be done fall or spring or summer after completing HORT 303. Prior approval is required for internships and a 2.0 is required for registration.

* Horticulture majors must make a C or better in all HORT designated courses.

Current

Horticulture (Continued)

Related Science Courses (choose at least 5 courses – 16 credits, at least one lab course must be taken)

AGM 301	Soil and Water Conservation	2
AGM 402	Drainage Irrigation & Waste Mgmt.	3
BIOSC 320	Field Botany	4
BIOSC 406/407	Introductory Plant Taxonomy	4
BIOSC 441/445	Ecology	5
BIOSC 446/447	Plant Ecology	5
CSENV 405	Plant Breeding	3
CSENV 452/453	Soil Fertility and Management	3/1
EN SP 200	Intro to Environmental Science	3
ENT 300	Environmental Entomology	3
ENT 301	Insect Biology and Diversity	4
ENT 308	Apiculture	3
IPM 401	Principles of Integrated Pest Mgmt.	3
PLPA 31	Plant Diseases and People	3
PLPA 406/408	Diseases and Insects of Turfgrass	2/1
WFB 313	Conservation Biology	3
WFB 462	Wetland Wildlife Biology	3

Advanced Science Options for Graduate School Tract

BIOCH 305	Essential Elements of Biochemistry	3
CH 301	Survey of Organic Chemistry	4
CH 223/227	Organic Chemistry & Lab	4
GEN 300/301	Fundamental Genetics	4
MICRO 305	General Microbiology	4
PHYS 122/124	Physics with Calculus I	4
PHYS 200	Introductory Physics	4
PHYS 207/209	General Physics I	4

Business, Communication & Leadership Courses (choose at least 3 courses – 9 credits)

ACCT 201	Financial Accounting Concepts	3
ACCT 202	Managerial Accounting Concepts	3
All AP EC courses 300 and higher		

All COMM, ECON, FIN, LAW, MGT, MKT courses 300 and higher

All MGT courses 200 and higher

ELE 301, 401, 499 Executive Leadership & Entrepreneurship I, II, III

Horticulture Specialization Courses (choose at least 4 courses – 13 credits)

FOR 450	Woody Plant Stress Physiology	3
FOR 480	Selected Topics in Urban Forestry	1-3
HORT 202	Selected Topics	3
HORT 208	Landscape Appreciation	3
HORT 212	Introduction to Turfgrass Culture	3
HORT 213	Turfgrass Culture Laboratory	1
HORT 308	Sustainable Landscape Garden Design	3
HORT 309	Sustainable Landscape Design Lab	1
HORT 400	Special Topics (maximum 3 credits)	1-3
HORT 406	Nursery Technology	3

HORT 408	Horticulture Discovery and Inquiry	Variable
HORT 412	Advanced Turfgrass Management	3
HORT 420	Applied Turfgrass Physiology	3
HORT 427	Urban Tree Care	3
HORT 433	Landscape & Turf Weed Mgmt.	3
HORT 455	Just Fruits	3
HORT 456	Vegetable Crops	3
HORT 461	Advanced Landscape Garden Design	4
HORT 465	Plant Molecular Biology	3

Spanish Courses (choose at least 1 course – 4 credits)

SPAN 101	Elementary Spanish	4
SPAN 102	Elementary Spanish	4

SPAN 104	Basic Spanish	4
SPAN 202	Intermediate Spanish	4

Plant Biology Requirement – 4 credits

BIOSC 304	Biology of Plants	3

BIOSC 308	Biology of Plants Lab	1

CLEMSON UNIVERSITY

000046

Curriculum and Course Change System - Print Change/Delete Course Form

XChange a Course - Abbrev & Number: PL PA- 310
Corresponding Lab Course: PL PA-L-310
Corresponding Honors course: PL PA-H-310
..Add Honors course: --
Corresponding Graduate course: --
..Add Graduate course: --
Course Title: PL DISEASES & PEOPLE

Brief Statement of Change:
We propose to change the name of this course to "Principles of Plant Pathology", as it more adequately describes the course content.

Last Term taught:1108	**..Change Abbrev to:**	
Effective Term:01/2013	**..Change Number to:**	
XChange Catalog Title:	**XChange Transcript Title:**	
from: Plant Diseases and People	from: PL DISEASES & PEOPLE	
to: Principles of Plant Pathology	to: PLANT PATHOLOGY	
..	From: Fixed Credit: 3 (2,3)	To: Fixed Credit: (,)
Change of Credit	Variable Credit: - (-), (-)	Variable Credit: - (-),(-)

.. Add cross-listing with the following child course(s):
.. Delete cross-listing with the following child course(s):
.. Reverse Parent/Child relationship with:

..Change Method of Instruction		**..Change Course Modifier**		**..Change General Education Designation**	
from:	to:	from:	to:	from:	to:
..A-Lecture Only	..	..Pass/Fail Only	..	..English Composition	..
..B-Lab (w/fee)	..	XGraded	..	..Oral Communication	..
..D-Seminar	..	..Variable Title	..	..Mathematics	..
..E-Independent Study	..	..Creative Inquiry	..	..Natural Science w/Lab	..
..F-Tutorial (w/fee)	..	..Repeatable	..	..Math or Science	..
..G-Studio	..	maximum credits		..A&H (Literature)	..
..H-Field course	..	from:		..A&H (Non-Literature)	..
..I-Study Abroad	..	to:		..Social Science	..
..L-Lab (no/fee)	..			..CCA	..
XN/B-Lecture/Lab(w/fee)	..			..STS	..
..N/L-Lecture/Lab(no fee)	..				

..Change Catalog Description:
from:
to:

..Change Prerequisite(s):
from:
to:

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator:PAGUDEL, Paula Agudelo**Date Form Created:** 9/13/2012
Form Last Updated by: PAGUDEL, Paula Agudelo**Date Form Last Updated:** 9/13/2012
Form Number: 5251

Approval

Chair, Department Curriculum Committee	9/27/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	9/28/12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	10/11/12 Date	Provost	2/3/13 Date
College Dean	10/11/12 Date	President	2/3/13 Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Change/Delete Course Form**

X **Change a Course - Abbrev & Number: PL PA- 411**
Corresponding Lab Course: PL PA-L-411
Corresponding Honors course: --
.. **Add Honors course:** --
Corresponding Graduate course: PL PA- -611
.. **Add Graduate course:** --
Course Title: PLANT DIS DIAG I

Brief Statement of Change:
We would like to increase the number of credits from 2 to 3. We have added topics, increasing the needed hours of theory to 2 per week.

Last Term taught: 1206	.. **Change Abbrev to:**	
Effective Term: 01/2013	.. **Change Number to:**	
.. **Change Catalog Title:**	.. **Change Transcript Title:**	
from:	from: PLANT DIS DIAG I	
to:	to:	
X **Change of Credit**	From: Fixed Credit: 2 (1,3) Variable Credit: - (-), (-)	To: Fixed Credit: 3 (2,3) Variable Credit: - (-),(-)

.. **Add cross-listing with the following child course(s):**
.. **Delete cross-listing with the following child course(s):**
.. **Reverse Parent/Child relationship with:**

.. **Change Method of Instruction**		.. **Change Course Modifier**		.. **Change General Education Designation**	
from:	to:	from:	to:	from:	to:
.. A-Lecture Only	..	.. Pass/Fail Only	..	.. English Composition	..
.. B-Lab (w/fee)	..	X Graded	..	.. Oral Communication	..
.. D-Seminar	..	.. Variable Title	..	.. Mathematics	..
.. E-Independent Study	..	.. Creative Inquiry	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	..	.. Repeatable	..	.. Math or Science	..
.. G-Studio	..	maximum credits		.. A&H (Literature)	..
.. H-Field course	..	from:		.. A&H (Non-Literature)	..
.. I-Study Abroad	..	to:		.. Social Science	..
.. L-Lab (no/fee)	..			.. CCA	..
X N/B-Lecture/Lab(w/fee)	..			.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

.. **Change Catalog Description:**
from:
to:

.. **Change Prerequisite(s):**
from:
to:

Learning Objectives: Students will learn techniques for diagnosis of diseases of crops of economic importance in South Carolina. Diagnosis of important diseases of cotton, ornamental crops, peach, peanut, tobacco, forests, turfgrass, soybean, and vegetables will be covered. Field trips and laboratory work are required.

Topical Outline: Taught in 15 units by a team of instructors, according to expertise, for a total of 30 hours of theory and 45 hours of lab. The instructional techniques will be a combination of:
- Lectures and demonstrations.
- Trips to production areas and research fields to observe disease symptoms and to collect specimens to examine in the laboratory.
- Laboratory exercises to identify and/or isolate plant pathogens.

Unit 1. Plant Problem Clinic
Unit 2. Isolation of Fungal Pathogens
Unit 3. Isolation of Bacterial Pathogens
Unit 4. Isolation of Viral Pathogens
Unit 5. Isolation of Nematode Pathogens
Unit 6. Forest trees
Unit 7. Tomato & cucurbits
Unit 8. Cotton
Unit 9. Peanuts
Unit 10. Soybean
Unit 11. Peach
Unit 12. Ornamental Crops
Unit 13. Turfgrass
Unit 14. Tobacco
Unit 15. Molecular Diagnostics

Evaluation: Grade distribution for 400-level students:
90% - Lab reports, disease reports, presentations (calculated as an average across all units)
10% - Final exam

Grade distribution for 600-level students:
70% - Lab reports, disease reports, presentations (calculated as an average across all units)

20% - Comprehensive literature review
10% - Final exam

Grades for 400-level students will be assigned as follows:
A - 90-100%
B - 80-89%
C - 70-79%
D - 60-69%
F - below 60%

Grades for 600-level students will be assigned as follows:
A - 90-100%
B - 80-89%
C - 70-79%
F - below 70%

Form Originator: PAGUDEL, Paula Agudelo **Date Form Created:** 9/13/2012
Form Last Updated by: , Date Form Last Updated: 11/7/2012
Form Number: 5252

Approval

Chair, Department Curriculum Committee	11/7/12 Date	Chair, Undergraduate Curriculum Committee	11/2/2012 Date
Department Chair	11.7.12 Date	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	11/8/12 Date	Provost	2/3/13 Date
College Dean	11/8/12 Date	President	2/3/13 Date
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print New Course Form**

000049

Course Abbreviation & Number:
X **New Undergraduate Course:** NUTR- 204
.. **New Honors Course:** --
.. **New Graduate Course:** -

Effective Term: 08/2013
Catalog Title: Nutrition Across the Life Cycle
Transcript Title: Life Cycle Nutr
Fixed Credit Course: 3 (3,0)
Variable Credit Course: - (-), (-)

Method of Instruction	Course Modifier	General Education Designation
X A-Lecture Only	.. Pass/Fail Only	.. English Composition
.. B-Lab (w/fee)	X Graded	.. Oral Communication
.. D-Seminar	.. Variable Title	.. Mathematics
.. E-Independent Study	.. Creative Inquiry	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. Repeatable	.. Math or Science
.. G-Studio	maximum credits:	.. A&H (Literature)
.. H-Field course		.. A&H (Non-Literature)
.. I-Study Abroad		.. Social Science
.. L-Lab (no/fee)		.. CCA
.. N/B-Lecture/Lab(w/fee)		.. STS
.. N/L-Lecture/Lab(no fee)		

Add cross-listing with the following child course(s):

Catalog Description: Using current evidence, this course examines nutrition issues and requirements across the life cycle, including pre-conception, pregnancy, lactation, infancy, childhood, adolescence, adulthood, and aging. Methods of nutritional assessment for each stage of life will be explored.

Prerequisite(s): Nutrition 203

Projected Enrollment:
Year 1 - 60 Year 2 - 60 Year 3 - 60 Year 4 - 60

Required course for students in: Food Science with Nutrition and Dietetics Concentration

Statement of need and justification based on assessment results of student learning outcomes: The addition of this course was based upon the following results:
1. Review of current curriculum indicates inadequate coverage of nutritional needs of populations and individuals at various ages: pregnancy, infancy, childhood, adulthood, and aging.
2. To meet continued accreditation of the Nutrition and Dietetics program by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) requires course content to include nutrition across the lifespan.
3. Survey and focus group results of program graduates suggest adding more nutrition courses including content related to lifespan nutrition.

Textbook(s): Brown, J.E. (2011). Nutrition Through the Life Cycle, Cengage Learning

Learning Objectives: 1. explain nutrition principles essential for normal growth, development and functioning of individuals in each stage of life.
2. identify the role of nutrition and the specific nutrient requirements for each life cycle stage.
3. assess and evaluate dietary intakes for individuals and groups throughout the lifespan along with biochemical and anthropometric data to determine potential nutritional risk factors.
4. describe the role of nutrition across the life cycle in the prevention of chronic disease.

Topical Outline: • Overview of life cycle, nutrition assessment – 3 hours
• Pre-conception nutrition – 3 hours
• Nutrition in pregnancy/lactation – 9 hours
• Infant nutrition – 6 hours
• Toddler/preschool nutrition – 5 hours
• Child nutrition – 4 hours
• Adolescent nutrition – 6 hours
• Adult nutrition – 3 hours
• Nutrition and aging – 6 hours

Evaluation: Exam #1 = 20%
Exam #2 = 20%
Exam #3 = 20%
Assignments/projects/observations 40%
Total 100%

Form Originator: RHLN,Rita Hallena **Date Form Created:** 9/28/2012
Form Last Updated by: , **Date Form Last Updated:** 10/1/2012
Form Number: 5374

Approval

Kay D. Cooksey	10/11/12	Carissa W. Thurmond	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Robert B. Pondoc	10/1/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kuczkowski	10/11/12	Doris O. Helms PROVOST	2/3/13

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Chair, College Curriculum Committee	Date	Provost	Date
Jeff Whitten	10/12/12	Doris R. Helms	2/3/13
College Dean	Date	President	Date
		for	
Director, Calhoun Honors College	Date		

CLEMSON UNIVERSITY **Curriculum and Course Change System - Print New Course Form**

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Course Abbreviation & Number:
X **New Undergraduate Course:** NUTR- 427
.. **New Honors Course:** --
.. **New Graduate Course:** -

Effective Term: 08/2013
Catalog Title: Nutrition Counseling
Transcript Title: Nutrition Counseling
Fixed Credit Course: 1 (1,0)
Variable Credit Course: - (-), (-)

Method of Instruction	Course Modifier	General Education Designation
X A-Lecture Only	.. Pass/Fail Only	.. English Composition
.. B-Lab (w/fee)	X Graded	.. Oral Communication
.. D-Seminar	.. Variable Title	.. Mathematics
.. E-Independent Study	.. Creative Inquiry	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. Repeatable	.. Math or Science
.. G-Studio	maximum credits:	.. A&H (Literature)
.. H-Field course		.. A&H (Non-Literature)
.. I-Study Abroad		.. Social Science
.. L-Lab (no/fee)		.. CCA
.. N/B-Lecture/Lab(w/fee)		.. STS
.. N/L-Lecture/Lab(no fee)		

Add cross-listing with the following child course(s):

Catalog Description: Examination and application of nutrition counseling methods, theories and strategies needed to promote nutrition behavior change. Assessment and interpretation of client information, developing client goals, and evaluation of interventions will be discussed.

Prerequisite(s): NUTR 424

Projected Enrollment:
Year 1 - 40 Year 2 - 40 Year 3 - 40 Year 4 - 40

Required course for students in: Food Science with Nutrition and Dietetics Concentration

Statement of need and justification based on assessment results of student learning outcomes: The addition of this course was based upon the following results:
1. Review of current curriculum indicates inadequate coverage of nutrition counseling techniques.
2. To meet continued accreditation of the Nutrition and Dietetics program by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) requires students to be able to demonstrate counseling techniques to facilitate behavior change.
3. Survey and focus group results of program graduates suggest adding more nutrition courses including content related to nutritional counseling techniques.

Textbook(s): Rollnick, Stephen. Motivational Interviewing in Health Care: Helping Patients Change Behavior, 2007

Learning Objectives: 1. Apply cognitive theory strategies in role play scenarios
2. Apply behavior theory strategies in role play scenarios
3. Apply motivational interviewing techniques in role play scenarios
4. Identify evidence-based guidelines in nutrition counseling
5. Utilize the nutrition care process to assess pertinent client information, identify the nutritional problem, implement effective goal/interventions, and evaluate outcomes using related monitoring and evaluation techniques.

Topical Outline: • Skills/qualifications needed for nutritional counseling – 1 hour
• Communication skills – 2 hours
• Transtheoretical model, Cognitive Behavioral theory – 2 hours
• Social learning theory/goal setting – 4 hour
• Motivational interviewing – 4 hours
• Cultural competence in counseling – 2 hour

Evaluation: Exam/Quizzes = 50%
Assignments/projects/observations 50%
Total 100%
GRADING: A = 90%-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = <60

Form Originator: RHLN,Rita Haliena **Date Form Created:** 9/30/2012
Form Last Updated by: , Date Form Last Updated: 10/1/2012
Form Number: 5380

Approval

Kay D. Cooksey	10/1/12	Patricia W. Marcoux	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Anthony Ronald Bird	10/1/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kaminski	10/11/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jack Whitescarver	10/12/12	Doris R. Helms for	2/3/13
College Dean	Date	President	Date

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Director, Calhoun Honors College	Date		

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CLEMSON UNIVERSITY **Curriculum and Course Change System - Print Major Form**

Change Major Name: Food Science
Degree: BS
Effective Catalog Year: 2013
.. **Change Major Name to:**
.. **Change Degree to:** (CHE approval required)
.. **Change Curriculum Requirements**
(Submit or upload Curriculum map in catalog format. CHE approval required for > 18 hours of changes)
.. **Change General Education Requirements**
(Must also submit a General Education Checklist)
X **Add, Change or Delete Concentration(s)**
(Submit or upload Curriculum map in catalog format. CHE approval required)
.. **Add, Change or Delete Emphasis Area(s)**
Explanation: The attached changes in the current Nutrition and Dietetics Concentration curriculum are recommended to maintain accreditation by the program's accrediting body - Accreditation Council for Education in Nutrition and Dietetics (ACEND). The curriculum changes include the addition of 3 courses. Two courses (NUTR 204 - Nutrition Across the Life Cycle and NUTR 427 - Nutrition Counseling) are being submitted separately for curriculum committee approval as new courses. The third course (NUTR 203) is existing and currently being taught to non-nutrition majors.

The 2012 ACEND accreditation standards require:
- the curriculum provide adequate coverage of nutrition across the lifespan and
- the students must be able to demonstrate counseling techniques to facilitate nutrition behavior change.
Program assessment such as survey of graduates also support these additions to the curriculum.

Currently NUTR 451, taught in the junior year, is the first fundamental nutrition course nutrition and dietetic students take. Program assessment reveal students need these principles earlier in the curriculum. The addition of NUTR 203 in the sophomore year will provide this earlier introduction of nutrition principles into the curriculum. Since NUTR 203 is already being taught it will not be a hardship to increase the enrollment. The addition of NUTR 204 will allow more complete coverage of nutritional needs of individuals throughout the lifespan. The addition of NUTR 427 will fill a void currently in the curriculum.

The addition of NUTR 203 (3 credits), NUTR 204 (3 credits) and NUTR 427 (1 credit) is proposed. It is proposed to delete FDSC 214 (3 credits), 2 elective credits, and 2 FDSC 450 (creative inquiry) credits so the number of total credits remains the same.
Form Originator: RHLN, Rita Haliena **Date Form Created:** 9/30/2012
Form Last Updated by: RHLN, Rita Haliena **Date Form Last Updated:** 10/1/2012
Form Number: 5381

Approval

Chair, Department Curriculum Committee	Date 10/1/12	Chair, Undergraduate Curriculum Committee	Date 11/2/2012
Department Chair	Date 10/1/12	Chair, Graduate Curriculum Committee	Date
Chair, College Curriculum Committee	Date 10/11/12	Provost	Date 2/3/13
College Dean	Date 10/12/12	President	Date 2/3/13

FOOD SCIENCE MAJOR
NUTRITION and DIETETIC CONCENTRATION CURRICULUM
2013-2014

FRESHMAN YEAR

Fall Semester	
BIOL 103 General Biol I ***and***	3
BIOL 105 General Biol Lab I ***or***	1
BIOL 110 Principles of Biol I	5
CH 101 General Chemistry	4
COMM 150 Intro to Hum Comm	3
FDSC 101 Man's Food	1
MTHSC 102 Intro to Math Ana ***or***	3
MTHSC 106 Calc of Var I	4
	15-17

Spring Semester	
BIOL 104 General Biol II ***and***	3
BIOL 106 General Biol Lab II ***or***	1
BIOL 111 Principles of Biol II	5
CH 102 General Chemistry	4
ENGL 103 Acc Composition	3
FDSC 102 Perspec Fd & Nutr Sci	1
PSYCH 201 Intro to Psychology[1]	3
	15-16

SOPHOMORE YEAR

Fall Semester	
AP EC 202 Agric Economics ***or***	3
ECON 211 Princ of Microecon ***or***	3
ECON 212 Princ of Macroecon	3
CH 201 Surv Organic Chem ***or***	4
CH 223 Organic Chem ***and***	3
CH 227 Org Chem Lab	1
NUTR 216 Current Issues in Nutr	1
PHYS 122 Phys w/Cal I ***and***	3
PHYS 124 Physics Lab I ***or***	1
PHYS 200 Intro Physics ***or***	4
PHYS 207 Gen Phys I ***and***	3
PHYS 209 Gen Phys I Lab	1
NUTR 203 Principles of Hum Nutr	3
	15

Spring Semester	
BIOCH 305 Essen Elem Bioch	3
BIOSC 434 Biol Chem Techniques	2
EX ST 301 Introductory Statistics	3
A&H (Non-Lit) Requirement[1]	3
A&H (Lit) Requirement[1]	3
NUTR 204 Life Cycle Nutrition	3
	17

JUNIOR YEAR

Fall Semester	
BIOSC 222 Human Ana & Phys I	4
FDSC 301 Fd Reg and Policy	1
MICRO 305 Gen Microbiology	4
NUTR 451 Human Nutrition	3
FDSC 450 Creative Inquiry	1
Elective	2
	15

Spring Semester	
BIOSC 223 Human Ana & Phys II	4
FDSC 306 Fd Service Operations	3
NUTR 418 Prof Dev in Dietetics ***or***	1
NUTR 419 Prof Dev in Nutr[2]	1
FDSC 450 Creative Inquiry	1
MICRO 407 Food & Dairy Micro	4
NUTR 455 Nutr and Metabolism	3
	16

SENIOR YEAR

Fall Semester	
FDSC 401 Food Chemistry I	3
FDSC 404 Fd Preserv & Proc	3
FDSC 407 Quantity Food	2
NUTR 424 Med Nutr Ther I	4
ENGL 304 Business Writing ***or***	3
ENGL 314 Technical Writing	3
	15

Spring Semester	
FDSC 402 Food Chemistry II	3
FDSC 403 Fd Chem & Analysis	2
FDSC 409 Total Quality Mgt	3
NUTR 425 Med Nutr Ther II	4
NUTR 426 Community Nutr	3
NUTR 427 Nutr Counseling	1
	16

124-127 TOTAL SEMESTER HOURS

[1]See General Education requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness requirement.
[2]NUTR 419 is recommended for students not pursuing registered dietitian (RD) status.

IMPORTANT NOTE: Undergraduate students should not wait for the SR year to register for required FR, SO, and JR courses. This action could delay your graduation date. The University may drop courses due to low enrollment or for other reasons during any semester, especially during Maymester, 1st Summer Session, and 2nd Summer Session. If you have not taken these required courses at the appropriate time as outlined in the curriculum map then you assume the risk of not being able to graduate on time.

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CLEMSON UNIVERSITY **Curriculum and Course Change System - General Education Checklist**

Major Name: Food Science

Specific General Education Requirements

Requirement	Select from Gen Ed List	Select from Restricted Gen Ed List	Specific Course(s)	No Change
		Specify restrictions - e.g. PHIL courses only	Specify courses or cluster* of courses if appropriate	
English Composition			ENGL 103	
Oral Communication*	..	..	..	X
Academic & Professional Development			X FD SC 102,NUTR 418 Dietetics; FD SC 102, NUTR 419 Nutrition; FD SC 102, FD SC 417 Food Sci & Tech	..
Mathematics	..	..	..	X
Natural Science with lab	..	..	..	X
Math or Natural Science	..	..	..	X
Arts & Humanities (Literature)	..	..	..	X
Arts & Humanities (Non-Literature)	..	..	..	X
Social Sciences	..	..	..	X
Cross-Cultural Awareness	..	..	..	X
Science and Tech. in Society	..	..	X NUTR 203/or FDSC 214	..

*Departments may specify a cluster of courses to meet the Oral communication competency but must include a plan for implementation and assessment in the following textbox: The department faculty within the food science and technology concentration and the nutrition and dietetic concentration within the food science program decides the most appropriate ways to integrate learning experiences in each of the ethical judgment, communication, and critical thinking areas. These integration plans are distributed throughout the curricula.

Distributed Competencies

The faculties of each degree program will decide the most appropriate ways to integrate learning experiences in each of the areas below. Quantification in terms of credit hours is avoided in favor of the presumption that faculties will want to place a serious effort in each area and distribute this effort to a significant degree throughout their curricula.

Ethical Judgement Integration Plan - Address competencies, implementation, and assessment: Different aspects of ethics are taught in different courses with ethics competencies assessed by a reflection paper in FD SC 418 and NUTR 425 and graded by a published rubric. Specific content areas related to ethical judgment including: current issues in food science, food laws and regulations, professionalism skills, quality assurance, pathogenic and spoilage microorganisms in foods, beneficial microorganisms in food systems, influence of the food system on the growth and survival of microorganisms, control of microorganisms, packaging materials and methods, cleaning and sanitation, as well as water and waste management. Learning objectives are referenced in the FD SC 101, FD SC 102, MICRO 407, FD SC 404, FD SC 214/ NUTR 203, FD SC 430, FD SC 306, and all sections of FD SC 450 Creative Inquiry courses.
Additional competencies apply to the Nutrition and Dietetic Concentration: The American Dietetic Association and the Commission on Dietetic Registration have a code of ethics which is specifically taught in the FD SC 418 and NUTR 425 courses that students take in their senior year. In addition, ethical principles are integrated into required courses on food service, medical nutrition therapy, and community nutrition. Case studies presenting ethical issues are used in food service and community nutrition. These courses enhance ethical judgment capacity within two specific competency areas: the integration of scientific information and research into practice and in beliefs, values, attitudes and behaviors for the professional dietitian level of practice.
It is anticipated that the students behave in an ethical manner and apply these principles within targeted dietetic skills areas including: FD SC 214 (organic foods); FD SC 306 (ADA accommodations); NUTR 425 (end of life and professional responsibility); NUTR 426 (obesity, food access); FD SC 404 (fair trade). These specific dietetic and nutrition artifacts are assessed through reflections papers with rubric for grading written reflections.
In general, the objectives for the student ethical judgment graded artifact plan are assessed via programmatic rubrics (reflections, case study, group project reports, and lab reports). If the results are inadequate, the curriculum will be revised.

Communication Integration Plan - Address competencies, implementation, and assessment: Objectives for communication skills (oral and written communications, listening, interviewing etc.) practice is an integral part of all aspects of the fields addressed by the Food Science program throughout the curriculum. By completion of Food Science program, the student should demonstrate the use of oral and written communication skills as different aspects are incorporated throughout the curriculum as reflected in the file of artifacts of assessment grades described here. This includes such skills as writing technical reports, letters and memos; communicating technical information to a nontechnical audience; and making formal and informal presentations. Students are introduced to development of professional presentations in FD SC 102, 214, and 215 and this information is reinforced in NUTR 426 as well as FD SC 407, and team work in the creation and formal written report/business plans are produced in the FD SC 306, 307, and FD SC 410 courses. Competencies are assessed as noted for oral presentations, written assignments and lab reports and graded by published rubrics. Application of evidence-based analysis to understand current dietary recommendations as an individual and/or team project is included in NUTR 451; creating a short news story on a current "hot topic" in Food Science and Nutrition with a team presentation in FD SC 214; in FD SC 410 student teams develop a new food product using steps (conduct a focus group; develops sensory ballots; conduct and evaluate sensory panel; modify product; perform a market analysis and submit product with an executive report to a national food ingredient company competition; in FD SC 418 students execute an independent search of the published literature to determine engineering parameters. If the results of the graded assessments described above are inadequate the result will be revision of the curriculum.

Critical Thinking Integration Plan - Address competencies, implementation, and assessment: Throughout the curriculum, students are involved in critical thinking/problem solving skills practice and development. Specifically, the program highlights critical thinking/problem solving skills (i.e. creativity, common sense, resourcefulness, scientific reasoning, and analytical thinking). The courses that reinforce this skill set include: FD SC 306, FD SC 430, NUTR 451, and FD SC 404. As a summative assessment all sections of FD SC

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450 Creative Inquiry grade critical thinking with the published rubric. If results of the graded assessment is inadequate the curriculum will be revised. These activities focus on preparing students in being able to define of a problem, identify potential causes and possible solutions, and make thoughtful recommendations. Throughout the program experiences, students apply skills to new situations, hone organizational skills, as well as practice the handling of multiple tasks and pressures.
In addition within the program a number of science laboratory courses and classes with extensive out of class teamwork, students also take EXST 301 which is based upon problem solving. In FD SC 102, students will be able to identify an appropriate hypothesis and variables for a scientific study and propose a newly designed follow-up study. All of their 300 and 400 level FD SC and NUTR classes test their ability to reason and think critically and to solve the types of problems they will be expected to address in their careers, for example, in FD SC 409, students are taught problem solving and the creative thought process.

Form Originator: MCONDRA, Margaret Condrasky **Date Form Created:** 10/18/2012
Form Last Updated by: MCONDRA, Margaret Condrasky **Date Form Last Updated:** 10/18/2012 **Form Number:** 5501

Approval

Kay Cooksey		Patricia W. Marrone	11/2/2012
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Ashley Pomeroy	10/19/12		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
Robert J. Kominski	10/22/12	Doris R. Helms	2/3/13
Chair, College Curriculum Committee	Date	Provost	Date
Jeff Whitfield	10/22/12	Doris R. Helms	2/3/13
College Dean	Date	President FOR	Date