



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

X Change a Course - Abbrev & Number: EN SP- 200

003001

Corresponding Lab Course: --
Corresponding Honors course: --
.. Add Honors course: --
Corresponding Graduate course: --
.. Add Graduate course: --
Course Title: INTRO ENVIRON SCI

Brief Statement of Change:

The current prerequisites are difficult to enforce with the current software. Some students may not be meeting them. The prerequisites are changed to "Natural Science with Lab." This is meant to be the same as the General Education requirement of the same name, which is a requirement for all undergraduate degrees at Clemson University. The current list Natural Science with Lab is the following: ASTR 1010/1030, 1020/1040, BIOL 1030/1050, 1040/1060, 1090, 1100, 1110, 1200/1210, 1200/1220, 1200/1230, 1200/1240, CH 1010, 1020, 1050, 1060, GEOL 1010/1030, 1020, 1120/1140, PHSC 1070, 1080, 1170, 1180, PHYS 1220/1240, 2070/2090, 2080/2100, 2210/2230, 2220/2240.

Last Term taught: 1305 .. Change Abbrev to:
Effective Term: 01/2014 .. Change Number to:
.. Change Catalog Title: .. Change Transcript Title:
from: from: INTRO ENVIRON SCI
to: to:

.. Change of Credit: From: Fixed Credit: 3 (3,) To: Fixed Credit: (,)
Variable Credit: - (-), (-) Variable Credit: - (-),(-)

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

Table with 3 columns: Change Method of Instruction, Change Course Modifier, Change General Education Designation. Includes rows for X A-Lecture Only, B-Lab (w/fee), D-Seminar, E-Independent Study, F-Tutorial (w/fee), G-Studio, H-Field course, I-Study Abroad, L-Lab (no/fee), N/B-Lecture/Lab(w/fee), N/L-Lecture/Lab(no fee).

.. Change Catalog Description:

from:
to:
X Change Prerequisite(s):
from: Prerequisite or concurrent enrollment: BIOL 1040 or BIOL 1110 or CH 1020 or CH 1060
to: Natural Science with lab Prerequisite or concurrent enrollment

Learning Objectives:

Topical Outline:

Evaluation:

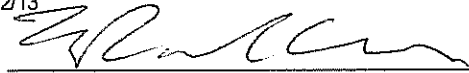
Form Originator: TJVRC, Thomas Overcamp Date Form Created: 9/2/2013
Form Last Updated by: TJVRC, Thomas Overcamp Date Form Last Updated: 9/2/2013
Form Number: 6391

Approval

Approval table with columns: Name, Date, Title, Date. Includes signatures and dates for Thomas Overcamp (6 Sept 2013), Department Chair (9/6/13), and Provost (9/20/13).

9/2/13

Curriculum and Course Change System



9/24/13

College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000002

**X Change a Course - Abbrev & Number: BIOSC- 482**  
 Corresponding Lab Course: BIOSC-L-482  
 Corresponding Honors course: --  
 .. **Add Honors course:** --  
 Corresponding Graduate course: BIOSC- -682  
 .. **Add Graduate course:** --  
**Course Title: LAB TEC FOR TEACHERS**

000003

**Brief Statement of Change:**  
 We are cross-listing this course with Secondary Education. Students satisfying the requirements of Secondary Education's degree in Science Teaching--Biological Sciences will also satisfy the requirements of the Biological Sciences BA, resulting in a double major. This cross-listing will facilitate cooperation between the two programs.

Last Term taught: 1305 .. **Change Abbrev to:**  
 Effective Term: 01/2014 .. **Change Number to:**  
 .. **Change Catalog Title:** .. **Change Transcript Title:**  
 from: from: LAB TEC FOR TEACHERS  
 to: to:

.. From: Fixed Credit: 3 (1,6) To: Fixed Credit: (,)  
**Change of Credit** Variable Credit: - (-), (-) Variable Credit: - (-),(-)

**X Add cross-listing with the following child course(s): EDSC 482**  
 .. **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	..	.. English Composition	..
.. B-Lab (w/fee)	.. X Graded	.. .. Oral Communication	..	.. Oral Communication	..
.. D-Seminar	.. .. Variable Title	.. .. Mathematics	..	.. Mathematics	..
.. E-Independent Study	.. .. Creative Inquiry	.. .. Natural Science w/Lab	..	.. Natural Science w/Lab	..
.. F-Tutorial (w/fee)	.. .. Repeatable	.. .. Math or Science	..	.. Math or Science	..
.. G-Studio	.. maximum credits	.. A&H (Literature)	..	.. A&H (Literature)	..
.. H-Field course	.. from:	.. A&H (Non-Literature)	..	.. A&H (Non-Literature)	..
.. I-Study Abroad	.. to:	.. Social Science	..	.. Social Science	..
.. L-Lab (no/fee)	..	.. CCA	..	.. CCA	..
X N/B-Lecture/Lab(w/fee)	..	.. STS	..	.. STS	..
.. N/L-Lecture/Lab(no fee)	..				

.. **Change Catalog Description:**  
 from:  
 to:  
 .. **Change Prerequisite(s):**  
 from:  
 to:  
**Learning Objectives:**  
**Topical Outline:**  
**Evaluation:**

**Form Originator:** RJKSN, Robert Kosinski **Date Form Created:** 9/30/2013  
**Form Last Updated by:** RJKSN, Robert Kosinski **Date Form Last Updated:** 9/30/2013  
**Form Number:** 6508

**Approval**

<i>Robert J. Kosinski</i>	9/30/13	<i>Carice W. Munnich</i>	11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
<i>R. Kosinski</i>	9/30/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
<i>Robert J. Kosinski</i>	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
<i>Deed Whitman</i>	10/11/13	<i>Mark M. Ayers</i>	1/18/14
College Dean	Date	President	Date

Director, Calhoun Honors College	Date		
Approvals related to cross-listing require the following signatures:			
<i>[Signature]</i>	11-13-13	<i>[Signature]</i>	11-13-13
[Child Course] Chair, Department Curriculum Committee	Date	[Child Course] Chair, College Curriculum Committee	Date
<i>[Signature]</i>	11-13-13	<i>[Signature]</i>	11-13-13
[Child Course] Department Chair	Date	[Child Course] College Dean	Date

000004



Curriculum and Course Change System - Print Major Form

607005

**Change Major Name:** Biochemistry

**Degree:** BS

**Effective Catalog Year:** 2014

**.. 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:** With the changes in the STAT rubric that will become effective in the next academic year, we are revising the advanced math requirement in our major to eliminate two courses that would require prereqs that are not part of our curriculum. Additional changes were made to the curriculum map to move the Social Sciences Requirement to the junior year instead of the senior year to facilitate ePortfolio completion, and minor changes were made to the footnotes to reflect the new STAT rubric. The changes to the curriculum map are indicated in bold face and a listing of specific changes is given.

**Form Originator:** CHERYLI, Cheryl Ingrams Smith **Date Form Created:** 9/27/2013

**Form Last Updated by:** , **Date Form Last Updated:** 9/27/2013

**Form Number:** 6496

**Approval**

	9-27-13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	09/27/2013		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		1/18/14
College Dean	Date	President	Date

**2014-2015 Biochemistry**

Freshman Year					
First Semester			Second Semester		
BCHM 1030	Careers in Genetics and Biochemistry	1	BIOL 1110	Principles of Biology II	5
BIOL 1100	Principles of Biology I	5	CH 1020	General Chemistry	4
CH 1010	General Chemistry	4	ENGL 1030	Accelerated Composition	3
MTHS 1060	Calculus of One Variable I	4	MTHS 1080	Calculus of One Variable II	4
Semester Hours: 14			Semester Hours: 16		
Sophomore Year					
First Semester			Second Semester		
CH 2230	Organic Chemistry	3	BCHM 3010	Molecular Biochemistry	3
CH 2270	Organic Chemistry Lab	1	CH 2240	Organic Chemistry	3
GEN 3020	Molecular and General Genetics	3	CH 2280	Organic Chemistry Laboratory	1
GEN 3030	Molecular and General Genetics Laboratory	2	COMM 1500 or COMM 2500	Introduction to Human Communication or Public Speaking	3
PHYS 1220	Physics with Calculus I	3	PHYS 2210	Physics with Calculus II	3
PHYS 1240	Physics with Calculus I Laboratory	1	PHYS 2230	Physics with Calculus II Laboratory	1
Advanced mathematics requirement <sup>1</sup>		3-4	Arts and Humanities (Literature) requirement <sup>2</sup>		3
Semester Hours: 16-17			Semester Hours: 17		
Junior Year					
First Semester			Second Semester		
BCHM 4310	Physical Approach to Biochemistry	3	BCHM 4320	Biochemistry of Metabolism	3
BCHM 4330	General Biochemistry Laboratory I	2	BCHM 4340	General Biochemistry Laboratory II	2
CH 3300	Introduction to Physical Chemistry <sup>3</sup>	3	BCHM 4360	Molecular Biology: Genes to Proteins	3
Science Requirement <sup>4</sup>		3	PHIL 3260	Science and Values	3
Social Science Requirement <sup>5</sup>		3	Social Science Requirement <sup>5</sup>		3
Elective <sup>6</sup>		2			
Semester Hours: 16			Semester Hours: 14		
Senior Year					
First Semester			Second Semester		
BIOL 4610	Cell Biology	3	BCHM 4930	Senior Seminar	2
GEN (BCHM) 4400	Bioinformatics	3	Science Requirement <sup>4</sup>		3
Science Requirement <sup>4</sup>		3	Elective <sup>6</sup>		9
Elective <sup>6</sup>		4			
Semester Hours: 13			Semester Hours: 14		

**Total – 120-121 hrs**<sup>1</sup> STAT 2300 or MTHS 2060<sup>2</sup> See General Education Requirements.<sup>3</sup> CH 3310 may be substituted.<sup>4</sup> BIOL 2220, 2230, or any courses at 3000 level or above in BCHM, BIOE, BIOL, CH, GEN, MICR, MTHS, PHYS, PLPA, PLPH, and STAT. Other courses must be approved by advisor.<sup>5</sup> See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement.<sup>6</sup> Two semesters of a foreign language are strongly recommended.

**Notes:**

1. A student is allowed to enroll in science and mathematics course only when all prerequisites have been passed with a grade of C or higher.
2. A minimum grade of C is required in all science and mathematics courses. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any science or mathematics course.

**Specific changes:**Junior year first semester:

1. Elective hours were reduced to two and three hours of elective were replaced with three hours of Social Science Requirement in order to meet this Gen.Ed. requirement earlier for ePortfolio purposes

Junior year second semester:

1. The Science Requirement was moved to the senior year and replaced with the Social Science requirement in order to meet this Gen.Ed. requirement earlier to facilitate ePortfolio completion

Senior year first semester:

1. The Science Requirement from the junior year second semester was moved to this semester to swap with the Social Science Requirement

Senior year second semester:

1. Elective hours were increased to 9 as the Social Science Requirement was removed from this semester and replaced elective hours in the junior year first semester

Footnote 1: The Advanced Math requirement is now limited to STAT 2300 or MTHS 2060. STAT 2300 replaces EXST 3010. MTHS 3010 and 3020 were removed from the list as these require either STAT 2300 or MTHS 2060. MTHS 3010 and 3020 still remain on the list of courses that will satisfy the Science Requirement.

Footnote 4: STAT has been added to the list of course rubrics for the Science Requirement, and EXST has been removed.



## 2013-2014 Biochemistry

Freshman Year					
First Semester			Second Semester		
BCHM 1030	Careers in Genetics and Biochemistry	1	BIOL 1110	Principles of Biology II	5
BIOL 1100	Principles of Biology I	5	BIOL 1111	Principles of Biology II Laboratory	0
BIOL 1101	Principles of Biology I Laboratory	0	CH 1020	General Chemistry	4
CH 1010	General Chemistry	4	CH 1021	General Chemistry Laboratory	0
CH 1011	General Chemistry Laboratory	0	ENGL 1030	Accelerated Composition	3
MTHS 1060	Calculus of One Variable I	4	MTHS 1080	Calculus of One Variable II	4
Semester Hours: 14			Semester Hours: 16		
Sophomore Year					
First Semester			Second Semester		
CH 2230	Organic Chemistry I	3	BCHM 3010	Molecular Biochemistry	3
CH 2270	Organic Chemistry I Lab	1	CH 2240	Organic Chemistry II	3
GEN 3020	Molecular and General Genetics	3	CH 2280	Organic Chemistry II Laboratory	1
GEN 3030	Molecular and General Genetics Laboratory	2	COMM 1500 or COMM 2500	Introduction to Human Communication or Public Speaking	3
PHYS 1220	Physics with Calculus I	3	PHYS 2210	Physics with Calculus II	3
PHYS 1240	Physics with Calculus I Laboratory	1	PHYS 2230	Physics with Calculus II Laboratory	1
Advanced mathematics requirement <sup>1</sup>		3-4	Arts and Humanities (Literature) requirement <sup>2</sup>		
Semester Hours: 16-17			Semester Hours: 17		
Junior Year					
First Semester			Second Semester		
BCHM 4310	Physical Approach to Biochemistry	3	BCHM 4320	Biochemistry of Metabolism	3
BCHM 4330	General Biochemistry Laboratory I	2	BCHM 4340	General Biochemistry Laboratory II	2
CH 3300	Introduction to Physical Chemistry <sup>3</sup>	3	BCHM 4360	Molecular Biology: Genes to Proteins	3
Science Requirement <sup>4</sup>		3	PHIL 3260	Science and Values	3
Elective <sup>5</sup>		5	Science Requirement <sup>4</sup>		
Semester Hours: 16			Semester Hours: 14		
Senior Year					
First Semester			Second Semester		
BIOL 4610	Cell Biology	3	BCHM 4930	Senior Seminar	2
GEN (BCHM) 4400	Bioinformatics	3	Science Requirement <sup>4</sup>		
Social Science Requirement <sup>5</sup>		3	Social Science Requirement <sup>5</sup>		
Elective <sup>5</sup>		4	Elective <sup>5</sup>		
Semester Hours: 13			Semester Hours: 14		

### Total – 120-121 hrs

<sup>1</sup> EXST 3010, MTHS 2060, 3010, or 3020

<sup>2</sup> See General Education Requirements.

<sup>3</sup> CH 3310 may be substituted.

<sup>4</sup> BIOL 2220, 2230, or any courses at 3000 level or above in BCHM, BIOE, BIOL, CH, EXST, GEN, MICR, MTHS, PHYS, PLPA, and PLPH. Other courses must be approved by advisor.

<sup>5</sup> See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement.

<sup>6</sup> Two semesters of a foreign language are strongly recommended.

Notes:

1. A student is allowed to enroll in science and mathematics course only when all prerequisites have been passed with a grade of C or higher.
2. A minimum grade of C is required in all science and mathematics courses. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any science or mathematics course.



Curriculum and Course Change System - Print Major Form

**Change Major Name:** Genetics

**Degree:** BS

**Effective Catalog Year:** 2014

**.. 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 have moved the Social Science requirement from the senior year to the junior year to facilitate completion of the ePortfolio. We have also made other minor corrections to the footnotes to reflect the change to the STAT rubric that will become effective next academic year and to clarify that one Social Science course must also satisfy the Cross-Cultural Awareness requirement.

**Form Originator:** CHERYLI, Cheryl Ingramsmith **Date Form Created:** 9/27/2013

**Form Last Updated by:** CHERYLI, Cheryl Ingramsmith **Date Form Last Updated:** 9/27/2013

**Form Number:** 6502

**Approval**

	9-27-13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	09/27/2013		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		1/18/14
College Dean	Date	President	Date

2014-2015 Genetics					
Freshman Year					
First Semester			Second Semester		
BIOL 1100	Principles of Biology I	5	BIOL 1110	Principles of Biology II	5
CH 1010	General Chemistry	4	CH 1020	General Chemistry	4
GEN 1030	Careers in Biochemistry and Genetics	1	ENGL 1030	Accelerated Composition	3
MTHS 1060	Calculus of One Variable I	4	MTHS 1080	Calculus of One Variable II	4
Semester Hours: 14			Semester Hours: 16		
Sophomore Year					
First Semester			Second Semester		
CH 2230	Organic Chemistry	3	BCHM 3010	Molecular Biochemistry	3
CH 2270	Organic Chemistry Laboratory	1	BCHM 3020	Molecular Biochemistry Laboratory	2
COMM 1500 or COMM 2500	Introduction to Human Communication or Public Speaking	3	CH 2240	Organic Chemistry	3
GEN 3020	Molecular and General Genetics	3	CH 2280	Organic Chemistry Laboratory	1
PHYS 1220	Physics with Calculus I <sup>1</sup>	3	STAT 2300	Statistical Methods I	3
PHYS 1240	Physics with Calculus I Lab <sup>1</sup>	1	Arts and Humanities (Literature) Requirement <sup>2</sup>		3
Semester Hours: 14			Semester Hours: 18		
			Social Science Requirement <sup>2</sup>		
Junior Year					
First Semester			Second Semester		
GEN 4200	Molecular Genetics and Gene Regulation	3	BIOL 4610	Cell Biology	3
GEN 4210	Molecular Genetics and Gene Regulation Laboratory	2	GEN 4100	Population and Quantitative Genetics	3
GEN (BCHM) 4400	Bioinformatics	3	GEN 4110	Population and Quantitative Genetics Laboratory	2
Science Requirement <sup>3</sup>		3	PHIL 3260	Science and Values	3
Social Science Requirement <sup>2</sup>		3	Genetics Requirement <sup>5</sup>		3
Semester Hours: 14			Semester Hours: 17		
			Elective <sup>4</sup>		
Senior Year					
First Semester			Second Semester		
GEN 4500	Comparative Genetics	3	GEN 4930	Senior Seminar	2
Science Requirement <sup>3</sup>		3	Genetics Requirement <sup>5</sup>		3
Genetics Requirement <sup>5</sup>		3	Science Requirement <sup>3</sup>		3
Elective <sup>4</sup>		6	Elective <sup>4</sup>		6
Semester Hours: 15			Semester Hours: 14		

**Total – 122 hrs**

<sup>1</sup>Medical, veterinary, and graduate school requirements often include two semesters of physics with calculus and the physics laboratory. Students are encouraged to check requirements for

admission to professional postgraduate programs.

<sup>2</sup>See **General Education Requirements. Three of the Social Science Requirement credit hours must also satisfy the Cross-Cultural Awareness Requirement.**

<sup>3</sup>BIOL 2220, 2230, PHYS 2080, 2100, 2210, 2230, or any courses at 3000 level or above in BCHM, BIOE, BIOL, CH, GEN, MTHS, MICR, PHYS, PLPA, PLPH, **and STAT**. Other courses must be approved by advisor. A maximum of nine credit hours from undergraduate research courses (4910, creative inquiry or similar courses) may be used towards the combined science and genetics requirements.

<sup>4</sup>Two semesters of a foreign language are strongly recommended.

<sup>5</sup>AVS 4700, BCHM 4310, 4320, 4330, 4340, 4360, 4430, 4910, BIOL 3350, 4400, 4500, (PLPA) 4540, 4560, 4570, CSEN 4050, GEN 4700, 4910, MICR 3050, 4150, 4170

Notes:

1. A student is allowed to enroll in science and mathematics course only when all prerequisites have been passed with a grade of C or higher.
2. A minimum grade of C is required in all science and mathematics courses. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any science or mathematics course.

**Specific changes:**Sophomore year, second semester

1. Replaced EXST 3010 with STAT 2300 (this is the automatic change in the Statistics rubric)

Junior year, first semester

1. Replaced elective with Social Science Requirement in order to meet this Gen.Ed. requirement earlier for ePortfolio purposes

Senior year, first semester

1. Replaced Social Science Requirement with Genetics Requirement

Senior year, second semester

1. Reduced Genetics Requirement to 3 hours, as 3 hours of Genetics Requirement have been added to Senior year, fall semester
2. Increased electives to 6 hours

Total credit hours = 122

Footnote 2: added wording to indicate that three of the Social Science credit hours must also satisfy the Cross-Cultural Awareness requirement

Footnote 3: removed EXST and added STAT to the list of course rubrics for the Science Requirement

2013-2014 Genetics				
Freshman Year				
First Semester			Second Semester	
BIOL 1100	Principles of Biology I	5	BIOL 1110	Principles of Biology II
BIOL 1101	Principles of Biology I Laboratory	0	BIOL 1111	Principles of Biology II Laboratory
CH 1010	General Chemistry	4	CH 1020	General Chemistry
CH 1011	General Chemistry Laboratory	0	CH 1021	General Chemistry Laboratory
GEN 1030	Careers in Biochemistry and Genetics	1	ENGL 1030	Accelerated Composition
MTHS 1060	Calculus of One Variable I	4	MTHS 1080	Calculus of One Variable II
Semester Hours: 14			Semester Hours: 16	
Sophomore Year				
First Semester			Second Semester	
CH 2230	Organic Chemistry	3	BCHM 3010	Molecular Biochemistry
CH 2270	Organic Chemistry Laboratory	1	BCHM 3020	Molecular Biochemistry Laboratory
COMM 1500 or COMM 2500	Introduction to Human Communication or Public Speaking	3	CH 2240	Organic Chemistry
GEN 3020	Molecular and General Genetics	3	CH 2280	Organic Chemistry Laboratory
PHYS 1220	Physics with Calculus I <sup>1</sup>	3	EXST 3010	Introductory Statistics
PHYS 1240	Physics with Calculus I Lab <sup>1</sup>	1	Arts and Humanities (Literature) Requirement <sup>2</sup>	3
Semester Hours: 14			Semester Hours: 18	
Junior Year				
First Semester			Second Semester	
GEN 4200	Molecular Genetics and Gene Regulation	3	BIOL 4610	Cell Biology
GEN 4210	Molecular Genetics and Gene Regulation Laboratory	2	GEN 4100	Population and Quantitative Genetics
GEN (BCHM) 4400	Bioinformatics	3	GEN 4110	Population and Quantitative Genetics Laboratory
Science Requirement <sup>3</sup>		3	PHIL 3260	Science and Values
Elective <sup>4</sup>		3	Genetics Requirement <sup>5</sup>	3
Semester Hours: 14			Semester Hours: 17	
Senior Year				
First Semester			Second Semester	
GEN 4500	Comparative Genetics	3	GEN 4930	Senior Seminar
Science Requirement <sup>3</sup>		3	Genetics Requirement <sup>5</sup>	6
Social Science Requirement <sup>2</sup>		3	Science Requirement <sup>3</sup>	3
Elective <sup>4</sup>		6	Elective <sup>4</sup>	4
Semester Hours: 15			Semester Hours: 15	

**Total – 123 hrs**

<sup>1</sup>Medical, veterinary, and graduate school requirements often include two semesters of physics with calculus and the physics laboratory. Students are encouraged to check requirements for admission to professional postgraduate programs.

<sup>2</sup>See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement.

<sup>3</sup>BIOL 2220, 2230, PHYS 2080, 2100, 2210, 2230, or any courses at 3000 level or above in BCHM, BIOE, BIOL, CH, EXST, GEN, MTHS, MICR, PHYS, PLPA, and PLPH. Other courses must be approved by advisor. A maximum of nine credit hours from undergraduate research courses (4910, creative inquiry or similar courses) may be used towards the combined science and genetics requirements.

<sup>4</sup>Two semesters of a foreign language are strongly recommended.

<sup>5</sup>AVS 4700, BCHM 4310, 4320, 4330, 4340, 4360, 4430, 4910, BIOL 3350, 4400, 4500, (PLPA) 4540, 4560, 4570, CSEN 4050, GEN 4700, 4910, MICR 3050, 4150, 4170

**Notes:**

1. A student is allowed to enroll in science and mathematics course only when all prerequisites have been passed with a grade of C or higher.
2. A minimum grade of C is required in all science and mathematics courses. No student may exceed a maximum of two attempts, excluding a W, to complete successfully any science or mathematics course.



000017



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

X **Change a Course - Abbrev & Number:** ENT- 407 (ENT 4070)

Corresponding Lab Course: ENT-L-407 (ENT 4071)

Corresponding Honors course: --

.. **Add Honors course:** --

Corresponding Graduate course: ENT- -607 (ENT 6070)

.. **Add Graduate course:** --**Course Title: APPL AG ENTOMOLOGY****Brief Statement of Change:**

The faculty proposes to change the number of credits for ENT 4070/6070 Applied Agricultural Entomology from 4 (3,3) to 3(2,3). We intend to start teaching this course in the summer, when the students will be able to have more field trips. We would like this course to be synchronized with PLPA 4110/6110 Plant Disease Diagnosis (3 credits) so that the students can learn about pests and diseases in the same field trips, and so that we can better utilize the expertise of our faculty in the Research and Education Centers.

Last Term taught: 1301

.. **Change Abbrev to:**

Effective Term: 08/2014

.. **Change Number to:**.. **Change Catalog Title:**.. **Change Transcript Title:**

from:

from: APPL AG ENTOMOLOGY

to:

to:

X From: Fixed Credit: 4 (3,3) To: Fixed Credit: 3 (2,3)

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

.. **Change Catalog Description:**

from:

to:

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

from:

to:

**Learning Objectives:** a) Students will be able to identify major and common pest and beneficial insects and related arthropods of various agricultural crop systems  
 b) Students will understand insect biology, life histories and life cycles and management strategies for agricultural insects  
 c) Students will have an overall understanding of the role of insects in agricultural cropping systems  
 d) Students will experience major cropping systems in the field

**Topical Outline:** Each topic corresponds to a lecture. Lab will meet once a week.

Introduction; What is a pest?

Insect abundance and diversity

Concept of pest; pest status and pest management

Reproduction and embryonic development; post embryonic growth and development; maturity

Models of life cycles and seasonal cycles

Agroecosystems and insect outbreaks

Dynamics of insect life systems and factors involved

Chemical modifiers of development &amp; behavior

Migration; environment and development

Population regulation

Sampling

Economics, damage thresholds

Pest control; concept of pest management; pest management strategies and tactics

Biological control

Ecological management of crop environment

000018

- Crop resistance to insects
- Insecticides
- Practice of pest management
- Ecological backlash & management
- Ecological backlash & management
- Wheat pest management
- Peach/Apple pest management
- Corn pest management
- Tobacco pest management
- Cotton and soybean pest management
- Peanut pest management
- Vegetable pest management
- Vegetable pest management
- Rice pest management
- Summary and final discussion

**Evaluation:** 4070 6070

- Quiz 01 5% 5%
- Quiz 02 5% 5%
- Quiz 03 5% 5%
- First hour exam 10% 10%
- Second hour exam 10% 10%
- Presentation Project 1 20% 10%
- Presentation Project 2 0% 10%
- Paper Critique 1 20% 10%
- Paper Critique 2 0% 10%
- Lecture final exam 15% 15%
- Lab final exam 10% 10%
- Total 100% 100%


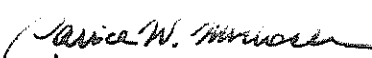
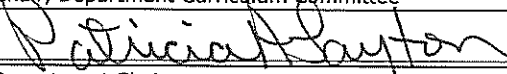

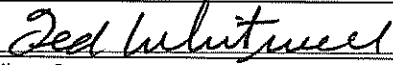
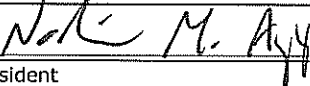
Scores and Grades: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, below 60 = F

**Form Originator:** PAGUDEL, Paula Agudelo **Date Form Created:** 8/17/2013

**Form Last Updated by:** PAGUDEL, Agudelo, Paula **Date Form Last Updated:** 10/9/2013

**Form Number:** 6316

**Approval**

	10/9/13		11-09-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/10/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		1/18/14
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000019



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

X **Change a Course - Abbrev & Number:** PL PH- 340 (PLPH 3400) will become PES 3400 after August 2014

Corresponding Lab Course: --

Corresponding Honors course: --

.. **Add Honors course:** --

Corresponding Graduate course: --

.. **Add Graduate course:** --

**Course Title:** PLANT MED & MAGIC

**Brief Statement of Change:**

We propose to change the course title to "Medical Botany". The instructor and the students believe the new title better represents the content of the course. The textbook followed in this course is Lewis, WH and MPF Elvin-Lewis. 2003. Medical Botany. John Wiley and Sons, NY.

Last Term taught: 1301

Effective Term: 01/2014

.. **Change Abbrev to:**

.. **Change Number to:**

X **Change Catalog Title:**

from: Plant Medicine and Magic

to: Medical Botany

X **Change Transcript Title:**

from: PLANT MED & MAGIC

to: MEDICAL BOTANY

.. From: Fixed Credit: 3 (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:**

.. <b>Change Method of Instruction</b>	.. <b>Change Course Modifier</b>	.. <b>Change General Education Designation</b>
--	----------------------------------	--

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)	..	..	..		

.. **Change Catalog Description:**

from:

to:

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

from:

to:

**Learning Objectives:**

**Topical Outline:**

**Evaluation:**

**Form Originator:** PAGUDEL, Paula Agudelo **Date Form Created:** 8/17/2013

**Form Last Updated by:** , **Date Form Last Updated:** 8/29/2013

**Form Number:** 6312

**Approval**

	9/11/13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/16/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		11/18/13
College Dean	Date	President	Date

000020



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

X Change a Course - Abbrev & Number: SCS- 445 (SSCS 4450) will become PES 4450 after August 2104.

Corresponding Lab Course: --

Corresponding Honors course: --

.. Add Honors course: --

Corresponding Graduate course: SCS- -645 (SSCS 6450) will become PES 6450 after August 2014.

.. Add Graduate course: --

Course Title: REGULATORY ISSUES

Brief Statement of Change:

We propose to incorporate the contents of SCS 4500 Agricultural Biosystems and Risk Assessment into SCS 4450 Regulatory Issues and Policies (both originally 1 credit), and make SCS 4450 a 2-credit course. The instructors believe the content of these two courses are better taught together. The courses are required only for Soils and Sustainable Crop Systems (SSCS) majors, and the SCS faculty unanimously approved the merger of these two courses.

Last Term taught: 1301 .. Change Abbrev to:

Effective Term: 08/2014 .. Change Number to:

.. Change Catalog Title: .. Change Transcript Title:

from: from: REGULATORY ISSUES

to: to:

X From: Fixed Credit: 1 (1,) To: Fixed Credit: 2 (2,)

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

Table with 3 columns: Change Method of Instruction, Change Course Modifier, Change General Education Designation. Rows include options like X A-Lecture Only, B-Lab (w/fee), D-Seminar, etc.

X Change Catalog Description:

from: Introduction to regulations of agricultural practices and implementation of novel technologies and products. Emphasizes patenting biotechnology inventions and ethical issues. Includes survey of state and governmental agencies with responsibilities to avoid risk to humans, non-target organisms, and preservation of food safety, agricultural resources, and natural ecosystems.

to: Introduction to regulations of plant agriculture. Emphasizes risk assessment, patenting biotechnology inventions, and ethical issues. Includes survey of state and governmental agencies with responsibilities to avoid risk to humans, non-target organisms, and preservation of food safety, agricultural resources, and natural ecosystems.

.. Change Prerequisite(s):

from:

to:

Learning Objectives: Objective: To provide an introduction to the regulation of practices in plant agriculture.

This course is intended for undergraduate and graduate students in agricultural biotechnology, agronomy, horticulture, plant sciences, sustainable crop production, turfgrass, and related disciplines.

Specific Learning Objectives:

- 1. Students will have a general knowledge of the roles and responsibilities of the major regulatory agencies in plant agriculture at the federal and state level.
2. Students will become familiar with the main aspects of intellectual property that affect plant agriculture in the United States.
3. Students will discuss the practices and principles behind regulations in plant agriculture that are in place to preserve food safety, agricultural resources, and natural ecosystems.

Typical Outline: Introduction to topics and methodology of the course (1 hr)

Overview of main federal regulatory agencies in the U.S. (USDA, EPA, FDA) (1 hr)

Overview of state regulatory agencies in South Carolina. (2 hr)

Fertilizer and Seed regulation (2 hr)

Regulation of Pesticides (2 hr)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (1 hr)

Nursery and Phytosanitary Certification (2 hr)


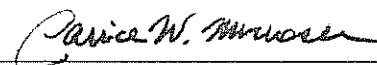
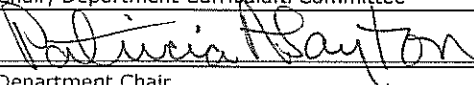

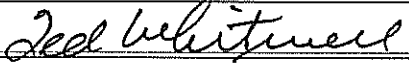
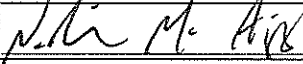
000021

Organic Certification (2 hr)  
 Student-led discussions: selected topics in Clean Water Act/Clean Air Act (2 hr)  
 Invasive and Exotic Species Program (2 hr)  
 Risk Assessment for Invasive Species (2 hr)  
 Crop Biotechnology. Concepts & Discussion of required readings (1 hr)  
 Biotechnology Regulation & Risk Assessment (2 hr)  
 Intellectual Property. Concepts & Discussion of required readings (2 hr)  
 Seed Certification & Foundation Seed. (2 hr)  
 Plant Patents & Plant Variety Protection (2 hr)  
 Student-led discussions: Selected topics in Intellectual Property/Biotechnology (2 hr)

**Evaluation:** 4450 6450  
 Participation 25% 20%  
 Exam 1 20% 20%  
 First draft of Essay 15% 10%  
 Exam 2 20% 20%  
 Final Essay 20% 20%  
 Student-led discussion 0% 10%

**Form Originator:** PAGUDEL, Paula Agudelo **Date Form Created:** 8/17/2013  
**Form Last Updated by:** PAGUDEL, Agudelo,Paula **Date Form Last Updated:** 10/10/2013  
**Form Number:** 6315

**Approval**

	10/10/13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/10/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		11/18/14
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		



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

000022

X Delete a Course - Abbrev & Number: SCS- 101 (SSCS 1010)

Corresponding Graduate Course: --

.. Corresponding Honors course: --

Course Title: SURV SOIL & SUS CROP

**Brief Statement of Change:**

The faculty proposes to use AGRI 1040 Introduction to Plant Science as the introductory course for the major instead of this course. AGRI 1040 covers more topics and better prepares the students to all the future Plant Science courses that they require. The necessary changes to be able to fit the new 3-credit course in the first semester will be made. This course is only required for the Soils and Sustainable Crop Systems (SSCS) majors. SCS faculty unanimously approved the elimination of SCS 1010.

Last Term taught: 1108

Effective Term: 01/2014

Form Originator: PAGUDEL, Paula Agudelo Date Form Created: 8/17/2013

Form Last Updated by: , Date Form Last Updated: 8/17/2013

Form Number: 6311

**Approval**

<i>Alan R. John</i>	9/11/13	<i>Parice W. Anderson</i>	11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
<i>Patricia A. Dayton</i>	9/16/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
<i>Robert J. Kocinski</i>	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
<i>Paul Whitwell</i>	10/11/13	<i>John M. Arjif</i>	1/18/14
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		

000023

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

X Delete a Course - Abbrev &amp; Number: SSCS- 333 (SSCS 3330)

Corresponding Graduate Course: --

.. Corresponding Honors course: --

Course Title: AGRIC GENETICS

## Brief Statement of Change:

The faculty propose to eliminate SSCS 3330 Agricultural Genetics from the Course Catalog because the contents of this course overlap with GEN 3000 Fundamental Genetics and CSEN 4050 Plant Breeding. SSCS 3330 is only required for Soils and Sustainable Crop Systems (SSCS) majors, and the SSCS faculty unanimously approved its deletion.

Last Term taught: 1108

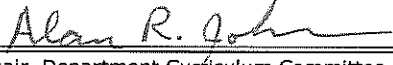
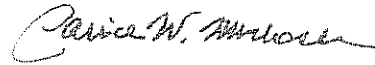

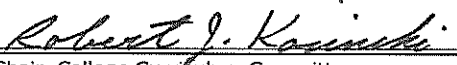


Effective Term: 01/2014

Form Originator: PAGUDEL, Paula Agudelo Date Form Created: 8/17/2013

Form Last Updated by: PAGUDEL, Paula Agudelo Date Form Last Updated: 8/17/2013

Form Number: 6313

## Approval

	9/11/13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/16/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		1/18/14
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		



000024

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

X Delete a Course - Abbrev & Number: **SSCS- 450** (SSCS 4500)  
 Corresponding Graduate Course: SSCS- -650 (SSCS 6500)  
 .. Corresponding Honors course: --

Course Title: **AGRI BIO & RISK ASMT**

**Brief Statement of Change:**

The faculty propose to delete SSCS 4500 Agricultural Biosystems and Risk Assessment from the Course Catalog, and incorporate its contents into the course SSCS 4450 Regulatory Issues and Policies (and make it a 2-credit course). The content of the two courses are related and could be better taught together. SSCS 4500 is only required for Soils and Sustainable Crop Systems (SSCS) majors, and the SSCS faculty unanimously approved the merging of its content into SSCS 4450.

**Last Term taught:**

Effective Term: 01/2014

Form Originator: PAGUDEL, Paula Agudelo Date Form Created: 8/17/2013

Form Last Updated by: PAGUDEL, Paula Agudelo Date Form Last Updated: 8/17/2013

Form Number: 6314

**Approval**

	9/11/13		11-01-2013
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/16/13		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/11/13		
Chair, College Curriculum Committee	Date	Provost	Date
	10/11/13		1/18/14
College Dean	Date	President	Date
Director, Calhoun Honors College	Date		