

000001



Curriculum and Course Change System - Print New Course Form

Course Abbreviation & Number:
X New Undergraduate Course: AVS- 400
.. New Honors Course: --
.. New Graduate Course: -
Effective Term: 08/2012

Catalog Title: Animal and Veterinary Sciences Professional Development
Transcript Title: Prof Development
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: Career development in the animal and veterinary sciences field by resume and interview preparation, learning about career opportunities and interaction with industry professionals.

Prerequisite(s): senior standing

Projected Enrollment:
Year 1 - 25 Year 2 - 35 Year 3 - 45 Year 4 - 65

Required course for students in: Animal and Veterinary Sciences

Statement of need and justification based on assessment results of student learning outcomes: This course is designed to prepare our AVS students for the workplace by integrating a variety of professional development items. Students are introduced to career options, etc. in AVS 100 (freshman year), but want to review these options again closer to the time they actually enter the work force/professional school (data = informal interviews/discussions/senior exit interviews). Students will write an ethics paper that can be included in their ePortfolio and will be scored against a standard rubric used also in AVS 100 for the ethics paper required in the 100-level course. In this capacity, all AVS students will be benchmarked for ethical judgement in their freshman (typically) year and then tracked for improvement in their senior year using this AVS 400 course. Additionally, other assessment items will be integrated into this course, such as the Watson-Glaser critical thinking test (deployed to all or part of the enrolled students). This course will be critical for AVS undergraduate program's assessment and will provide much needed data that was benchmarked at the beginning of their careers (qualifying assessment), complete formative assessment in sophomore and junior years through our core courses (to intervene) and then this course would complete summative assessment using internal rubric and an externally validated test.

Textbook(s): No Text required
iClicker required

- Learning Objectives:**
1. Identify career opportunities in the animal and veterinary sciences through guest speakers and lecture series.
 2. Attend CAFLS career fair; complete AVS senior exit interview
 3. Update resume initiated in AVS 100
 4. Complete one mock interview and a minimum of one formal interview for a professional school or job.
 5. Research available, relevant Animal and Veterinary Sciences jobs and present findings to the class.
 6. Write an animal ethics paper for inclusion in ePortfolio.
 7. Meet with alumni at various phases of their careers for a real-world perspective.

Topical Outline: Career opportunities in Animal and Veterinary Sciences (8 hours)
Resume Writing (2 hours)
Interview Preparation (2 hours)
Ethical Judgement (1 hour)
Job Presentations (1 hour)
Assessment of AVS Curriculum (1 hour)

Evaluation: Resume 20%
Interview 20%
Ethics Paper 20%
Attendance (class and career fair) 20%
Job Presentations 20%

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 8/16/2011
Form Last Updated by: , **Date Form Last Updated:** 10/10/2011
Form Number: 4213

Approval

<i>Kristine Vernon</i>	10-10-11	<i>Carole W. Michael</i>	11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date

000002

<i>XAB</i>	12.9.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
<i>Robert Kowicki</i>	10/13/11	<i>David R. Helms</i>	
Chair, College Curriculum Committee	Date	Provost	Date
<i>Zed Whitwell</i>	10/13/11	<i>James T. ...</i>	12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		

000003

Change Major Name: Animal and Veterinary Sciences
Degree: BS
Effective Catalog Year: 2012
 .. 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: Animal Agribusiness Concentration:


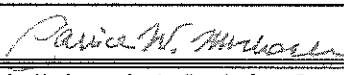
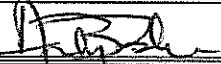




Rearrange the Animal Agribusiness curriculum tree: CSENV 423 was moved from the fall of Sophomore year to the fall of the Junior year because the professor feels that upperclassmen are more prepared and successful in the course and this would be more in keeping with the 400-level rubric reserved for upperclassmen. An Elective (3 hours) was moved from the fall of Junior year to the fall of Sophomore year.

Add new course: The addition of AVS 400 - AVS Professional Development (1 hr) was added to the fall of the senior year. To avoid increasing the number of credit hours, we reduced the required number of Experience Based Activity hours in the fall of senior year from 3 to 2 hours.

Expand the options to meet AVS Techniques Requirements (footnote 2) to now include AVS 302, AVS 309, AVS 311, AVS 323, AVS 405, all of which are Animal Evaluation courses. In the Animal Agribusiness concentration students are already required to take one of these Evaluation courses, and this course could not also be used to satisfy the Techniques Requirement.

Expand the Experience-Based Activity Requirements (footnote 4) to include AVS 390 - Practicum and AVS 444 Animal Agribusiness Travel Experience. Both of these courses provide similar industry experience as the already included list and this change would provide more opportunity and flexibility for AVS students.

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/30/2011
Form Last Updated by: , **Date Form Last Updated:** 10/10/2011
Form Number: 4435

Approval			
	10.10.11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10.10.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
	10/13/11		12/20/11
College Dean	Date	President	Date

AVS Animal Agribusiness Concentration 2012-2013

Freshman			
Fall		Spring	
AVS 100 Orientation to AVS	1	BIOL 104 General Biology II <i>and</i>	3
AVS 150 Introduction to Animal Science	3	BIOL 106 General Biology Lab II <i>or</i>	1
AVS 151 Intro to Animal Science Lab	1	BIOL 111 Principles of Biology II I	5
BIOL 103 General Biology I <i>and</i>	3	CH 102 General Chemistry	4
BIOL 105 General Biology Lab I <i>or</i>	1	ENGL 103 Accelerated Composition	3
BIOL 110 Principles of Biology I	5	MTHSC 101 Essen. Math. Informed Soc. <i>or</i>	3
CH 101 General Chemistry	4	MTHSC 102 Intro. To Math. Analysis <i>or</i>	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
GSENV 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 ³	2	AVS 450 Sustainable Livestock Prod. Syst.	4
AVS Techniques Requirement ²	2	Experience Based Activity	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

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

²Select from:

- AVS 200 Beef Cattle Techniques
- AVS 201 Poultry Techniques
- AVS 203 Dairy Techniques
- AVS 204 Equine Techniques
- AVS 206 Swine Techniques
- AVS 209 Livestock Exhibition 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

³Select 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

⁴Select 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

000006



Curriculum and Course Change System - Print Major Form

Change Major Name: Animal and Veterinary Sciences
 Degree: BS
 Effective Catalog Year: 2011-12
 .. 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: Equine Business Concentration:

Rearrange the Equine Business curriculum tree: CSENV 423 was moved from the fall of Sophomore year to the fall of the Junior year because the professor feels that upperclassmen are more prepared and successful in the course and this would be more in keeping with the 400-level rubric reserved for upperclassmen. An Elective (3 hours) and Techniques Requirement (2 hours) were moved to accomplish this rearrangement.

Add new course: The addition of AVS 400 - AVS Professional Development (1 hr) was added to the fall of the senior year. To avoid increasing the number of hours, we reduced the free elective hours in the spring of Senior year from 6 to 5 hours.

Expand the options to meet AVS Techniques Requirements (footnote 2) to now include AVS 302, AVS 309, AVS 311, AVS 323, AVS 405, all of which are Animal Evaluation courses. In the Equine Business concentration, students are already required to take AVS 309; this could not also be used to satisfy the Techniques Requirement.

Expand the Experience-Based Activity Requirements (Equine Business, footnote 3) to include AVS 390 - Practicum and AVS 444 Animal Agribusiness Travel Experience. Both of these courses provide similar industry experience as the already included list and this change would provide more opportunity and flexibility for AVS students.

Form Originator: KVERNON, Kristine Vernon Date Form Created: 10/1/2011
 Form Last Updated by: , Date Form Last Updated: 10/10/2011
 Form Number: 4439

Approval			
	Date		Date
<i>Kristine Vernon</i>	10-10-11	<i>Carice M. Michener</i>	11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
<i>Andy Blum</i>	10.10.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
<i>Robert J. Kocinski</i>	10/13/11	<i>David R. Nelson</i>	12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
<i>Jed Whitman</i>	10/13/11	<i>John O. ...</i>	12/21/11
College Dean	Date	President	Date

AVS Equine Business Concentration 2012-2013

Freshman			
Fall		Spring	
AVS 100 Orientation to AVS	1	BIOL 104 General Biology II <i>and</i>	3
AVS 150 Introduction to Animal Science	3	BIOL 106 General Biology Lab II <i>or</i>	1
AVS 151 Intro to Animal Science Lab	1	BIOL 111 Principles of Biology II I	5
BIOL 103 General Biology I <i>and</i>	3	CH 102 General Chemistry	4
BIOL 105 General Biology Lab I <i>or</i>	1	ENGL 103 Accelerated Composition	3
BIOL 110 Principles of Biology I	5	MTHSC 101 Essen. Math. Informed Soc. <i>or</i>	3
CH 101 General Chemistry	4	MTHSC 102 Intro. To Math. Analysis <i>or</i>	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 ⁵	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

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

²Select from:

- AVS 200 Beef Cattle Techniques
- AVS 201 Poultry Techniques
- AVS 203 Dairy Techniques
- AVS 206 Swine Techniques
- AVS 209 Livestock Exhibition 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

³Select 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



Curriculum and Course Change System - Print Major Form

000009

Change Major Name: Animal and Veterinary Sciences
Degree: BS
Effective Catalog Year: 2012
 .. **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)
 .. **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: Pre-Veterinary Concentration:

Remove course from Curriculum tree: Gen 301 laboratory is no longer available to non-Genetics students and must be deleted from the Pre-Veterinary Sciences Concentration within the AVS major. This will be removed from the spring of the Junior year.

To maintain 30 hours in the junior year we are moving 1 hour of experience-based activity to the spring of the junior year from the spring of the senior year.

Add new course: AVS 400 - AVS Professional Development (1 hr) was added to the fall of the senior year. This was accomplished in the Pre-Veterinary Sciences concentration by removing GEN 301 (above).

Expand the options to meet AVS Techniques Requirements (footnote 2) to now include AVS 302, AVS 309, AVS 311, AVS 323, AVS 405 which are Animal Evaluation courses.

Expand the Experience-Based Activity Requirements (footnote 6) to include AVS 390 - Practicum and AVS 444 Animal Agribusiness Travel Experience. Both of these courses provide similar industry experience as the already included list and this change would provide more opportunity and flexibility for AVS students.

Form Originator: KVERNON, Kristine Vernon **Date Form Created:** 9/28/2011
Form Last Updated by: , **Date Form Last Updated:** 10/10/2011
Form Number: 4430

Approval			
	10.10.11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10.10.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
	10/10/11		12/21/11
College Dean	Date	President	Date

AVS Pre-Veterinary & Science Concentration 2012-2013

000010

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	AVS Evaluation Requirement ³ or	2
		Oral Communication Requirement ¹	3
		AVS Techniques Requirement ²	2
TOTAL	16	TOTAL	15-16

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	3	Gen 304	1
Biochemistry or	3	AVS Experience Based Activity ⁵	1
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 ⁵	2
Departmental Requirement ⁴	3	Departmental Requirement ⁴	3
Elective	3	Social Science Requirement ¹	3
AVS 400	1		
TOTAL	14	TOTAL	14

TOTAL 121-125

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

AVS Preveterinary & Science Concentration

¹See 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.

²Select from:

AVS 200 Beef Cattle Techniques
 AVS 201 Poultry Techniques
 AVS 203 Dairy Techniques
 AVS 204 Equine Techniques
 AVS 206 Swine Techniques
 AVS 209 Livestock Exhibition 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

³Oral communication requirement can be met by:

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
 or Gen Ed.

(Students who want to apply to Vet School early (Junior year) must be sure they have received credit for their Oral Communication Requirement.)

⁴Select 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)

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

⁶Select 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

000012



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

X Change a Course - Abbrev & Number: BIOSC- 203
 Corresponding Lab Course: --
 Corresponding Honors course: --
 .. **Add Honors course:** --
 Corresponding Graduate course: --
 .. **Add Graduate course:** --
Course Title: ENV ENERGY & SOCIETY

Brief Statement of Change:
 Because of the requirements of "Banner," BIOSC is changing its rubric to BIOL. A BIOL 203 already exists, but there is no BIOL 204. We wish to change BIOSC 203 to BIOSC 204 so that there will be no duplicate numbers when all BIOSC courses become BIOL courses.

Last Term taught: 1108	.. Change Abbrev to:
Effective Term: 01/2012	X Change Number to: 204
.. Change Catalog Title:	.. Change Transcript Title:
from:	from: ENV ENERGY & SOCIETY
to:	to:

..	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:**

.. 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)	..			X 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:** 9/28/2011
Form Last Updated by: RJKSN, Robert Kosinski **Date Form Last Updated:** 9/28/2011
Form Number: 4431

Approval

	9/28/11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/29/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date

<i>2nd Whitman</i>	<i>10/13/11</i>	<i>[Signature]</i>	
College Dean	Date	President	Date
			<i>12/1/11</i>
Director, Calhoun Honors College	Date		

000014



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

X Change a Course - Abbrev & Number: BIOSC- 210
 Corresponding Lab Course: --
 Corresponding Honors course: --
 .. **Add Honors course:** --
 Corresponding Graduate course: --
 .. **Add Graduate course:** --
Course Title: INTRO TO TOXICOLOGY

Brief Statement of Change:
 Because of the requirements of "Banner," BIOSC is changing its rubric to BIOL. A BIOL 210 already exists, but there is no BIOL 211. We wish to change BIOSC 210 to BIOSC 211 so that there will be no duplicate numbers when all BIOSC courses become BIOL courses.

Last Term taught: .. **Change Abbrev to:**
 Effective Term: 01/2012 .. **Change Number to: 211**
 .. **Change Catalog Title:** .. **Change Transcript Title:**
 from: from: INTRO TO TOXICOLOGY
 to: to:

.. 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):**
 .. **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	..	.. 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	..
.. N/B-Lecture/Lab(w/fee)	..	X STS	..	X 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:** 9/28/2011
Form Last Updated by: RJKSN, Robert Kosinski **Date Form Last Updated:** 9/28/2011
Form Number: 4434

Approval

	9/28/11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/29/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
			2/20/11
Chair, College Curriculum Committee	Date	Provost	Date

<i>Zeel Whitwell</i>	<i>10/13/11</i>	<i>[Signature]</i>	000015
College Dean	Date	President	Date
			<i>12/21/11</i>
Director, Calhoun Honors College	Date		

000016



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

X Change a Course - Abbrev & Number: AG M- 206

Corresponding Lab Course: AG M-L-206

Corresponding Honors course: --

.. Add Honors course: --

Corresponding Graduate course: --

.. Add Graduate course: --

Course Title: MACHINERY MGT

Brief Statement of Change:

Updating prerequisites to match the current curriculum (they have not been updated since the curriculum revision that affected them).

Last Term taught: 1101

.. Change Abbrev to:

Effective Term: 08/2012

.. Change Number to:

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

from: from: MACHINERY MGT

to:

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	..	.. 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:

X Change Prerequisite(s):

from: Req: MTHSC 105, PHYS 207 or consent of instructor.

to: Req or Coreq: MTHSC 102 and PHYS 207 or consent of instructor.

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KIRK2, Kendall Kirk Date Form Created: 9/6/2011

Form Last Updated by: , Date Form Last Updated: 10/10/2011

Form Number: 4279

Approval

	10-12-2011		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10-12-11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		
Chair, College Curriculum Committee	Date	Provost	Date
	10/13/11		12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		

000017



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

X Change a Course - Abbrev & Number: AG M- 301

Corresponding Lab Course: --

Corresponding Honors course: --

.. Add Honors course: --

Corresponding Graduate course: --

.. Add Graduate course: --

Course Title: SOIL WATER CONSERV

Brief Statement of Change:

This course covers a great deal of engineering design and engineering technology calculations. MthSc 102 is being added as a prerequisite so that students will be better prepared for the math already used in the course.

Last Term taught: 1008

.. Change Abbrev to:

Effective Term: 08/2012

.. Change Number to:

.. Change Catalog Title:

.. Change Transcript Title:

from:

from: SOIL WATER CONSERV

to:

to:

.. From: Fixed Credit: 3 (3,0) 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:
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:

X Change Prerequisite(s):

from:

to: Preq: MTHSC 102 or equivalent or consent of instructor.

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KIRK2, Kendall Kirk Date Form Created: 9/6/2011

Form Last Updated by: , Date Form Last Updated: 10/14/2011

Form Number: 4281

Approval

	10/14/11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/14/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/14/11		
Chair, College Curriculum Committee	Date	Provost	Date
	10/18/11		12/29/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		

AGRICULTURAL EDUCATION

000018

Bachelor of Science

Agricultural Education provides broad preparation in agricultural sciences and professional education, including communications and human relations skills. In addition to required courses, students may select a minor (see page 62).

The Bachelor's degree prepares students for professional education positions in the mainstream of agriculture, including teaching, cooperative extension service, and government agricultural agencies. The Agricultural Education degree also prepares students for other educational work, such as agricultural missionary, public relations, and training officers in agricultural industry.

In consultation with the departmental advisor, students choose one of the following emphasis areas: Communications, Leadership, or Teaching.

<p>Freshman Year First Semester 1 - AG ED 102 Agric. Education Freshman Seminar 3 - AG ED 200 Agricultural Applications of Educational Technology¹ or 3 – Arts and Humanities (Non-Lit.) and STS Requirements 3 - AVS 150 Introduction to Animal Science 1 - AVS 151 Introduction to Animal Science Lab. 3 - BIOL 103 General Biology I 1 - BIOL 105 General Biology Lab. I 3-HORT 101 Horticulture 3 - Mathematics Requirement² 18</p>	<p>Second Semester 1 - AG ED 100 Orientation and Field Experience 3 - AG M 205 Principles of Fabrication 3 – BIOL 104 General Biology II 1- BIOL 106 General Biology Lab II 3 - ENGL 103 Accelerated Composition 6 - Social Science Requirement³ 17</p>
<p>Sophomore Year First Semester 3 - AG ED 201 Intro. to Agricultural Education 3 - AG ED 204 Applied Agriculture Calculations 3 - B T 220 Biosystems Technology I 4 - CH 101 General Chemistry 3 - HORT 212 Introduction to Turfgrass Culture 1 - HORT 213 Turfgrass Culture Lab. 17</p>	<p>Second Semester 3- EDSP 370 Introduction to Special Education 4 - CH 102 General Chemistry 1 - COMM 101 Communication Academic and Professional Development I ⁴ 3- PHYS 207 General Physics I 3 – EXST 301 Introductory Statistics 3 - Technical Requirement⁵ 17 17</p>

1. Students in the Communications and Leadership Emphasis Areas must take AG ED 200. Students in the Teaching Emphasis Area must take a course to satisfy both the Arts and Humanities (Non-Literature) and STS Requirements. See General Education Requirements.
2. MTHSC 101, 102, 106, 108, 203, or 207
3. See General Education Requirements. Three of these credit hours must also satisfy the Cross-Cultural Awareness Requirement. Note: ANTH 201, GEOG 103 or HIST 173 is recommended to satisfy the Social Science Requirement.
4. Required of students in Communications Emphasis Area only.
5. See advisor.

COMMUNICATIONS EMPHASIS AREA

<p>Junior Year First Semester 3 - AG ED 303 Mech. Technology for Agric. Ed. 3 - AG M 221 Surveying 4 - COMM 201 Intro. to Communication Studies 4 - CSENV 202 Soils 3 - Arts and Humanities (Non-Lit.) and STS Requirements¹ 17</p>	<p>Second Semester 3 - ED F 302 Educational Psychology 3 - HORT 305 Plant Propagation 1 - HORT 306 Plant Propagation Techniques Lab. 3 - ENR 302 Natural Resources Measurements 3 - Advanced Writing Requirement² 3 - Departmental Communication Requirement³ 3 - Oral Communication Requirement⁴ 19</p>
<p>Senior Year First Semester 3 - ENGL 231 Introduction to Journalism 3 - HORT 303 Landscape Plants 6 - Departmental Communication Requirement³ 3 - Arts and Humanities (Literature) Requirement¹ 3 - Technical Requirement³ 18</p>	<p>Second Semester 12 - AG ED 407 Internship in Extension and Leadership Education⁵ 12</p>

135 Total Semester Hours

1. See General Education Requirements.
2. ENGL 304 or 314 is recommended.
3. See advisor.

4. See General Education Requirements. COMM 150 or 250 is recommended.
5. Internship must meet departmental requirements for Communications Emphasis Area. See advisor.

000019

LEADERSHIP EMPHASIS AREA

<p>Junior Year First Semester 3 - AG ED 303 Mech. Technology for Agric. Ed. 3 - AG M 221 Surveying 4 - CSENV 202 Soils 3 - HORT 303 Landscape Plants 3 - Arts and Humanities (Non-Lit.) and STS Requirements¹ 3 - Advanced Writing Requirement² 19</p>	<p>Second Semester 3 - ED F 302 Educational Psychology 3 - HORT 305 Plant Propagation 1 - HORT 306 Plant Propagation Techniques Lab. 3 - ENR 302 Natural Resources Measurements 3 - Oral Communication Requirement³ 3 - Technical Requirement⁴ 16</p>
<p>Senior Year First Semester 3 - AG ED 403 Principles of Adult/Ext. Educ. 3 - AG ED 415 Leadership of Volunteers 3 - AG ED 416 Ethics and Issues in Agriculture and the Food and Fiber System 3 - MGT 201 Principles of Management 3 - Arts and Humanities (Literature) Requirement¹ 3 - Technical Requirement⁴ 18</p>	<p>Second Semester 12 - AG ED 407 Internship in Extension and Leadership Education 12</p>

~~134~~ Total Semester Hours
134

1. See General Education Requirements.
2. ENGL 304 or 314 is recommended.
3. See General Education Requirements. COMM 150 or 250 is recommended.
4. See advisor.

TEACHING EMPHASIS AREA

<p>Junior Year First Semester 3 - AG ED 303 Mech. Technology for Ag. Ed. 3 - AG M 221 Surveying 4 - CSENV 202 Soils 3 - HORT 303 Landscape Plants 3 - Advanced Writing Requirement¹ 16</p>	<p>Second Semester 3 - AG ED 416 Ethics and Issues in Agriculture and the Food and Fiber System 3 - ED F 302 Educational Psychology 3 - HORT 305 Plant Propagation 1 - HORT 306 Plant Propagation Techniques Lab. 3 - ENR 302 Natural Resources Measurements 3 - Oral Communication Requirement² 16</p>
<p>Senior Year First Semester 1 - AG ED 400 Supervised Field Experience II 3 - AG ED 401 Instructional Methods in Ag. Ed. 3 - AG ED 403 Principles of Adult/Ext. Education 3 - AG ED 423 Curriculum 3 - Arts and Humanities (Literature) Requirement³ 3 - Technical Requirement⁴ 16</p>	<p>Second Semester 12 - AG ED 406 Directed Teaching 2 - AG ED 425 Teaching Agricultural Mechanics 14</p>

~~131~~ Total Semester Hours
131

1. ENGL 304 or 314 is recommended.
2. See General Education Requirements. COMM 150 or 250 is recommended.
3. See General Education Requirements.
4. See advisor.

000020



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

X Change a Course - Abbrev & Number: AG M- 402

Corresponding Lab Course: AG M-L-402

Corresponding Honors course: --

.. Add Honors course: --

Corresponding Graduate course: AG M- -602

.. Add Graduate course: --

Course Title: LAND DRAIN AND IRRIG

Brief Statement of Change:

Addition of prerequisite to better prepare students for course material.

Last Term taught: 1101

.. Change Abbrev to:

Effective Term: 01/2012

.. Change Number to:

.. Change Catalog Title:

.. Change Transcript Title:

from:

from: LAND DRAIN AND IRRIG

to:

to:

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	..	.. 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:

X Change Prerequisite(s):

from:

to: Preq or Coreq: AGM 301 or consent of instructor.

Learning Objectives:

Topical Outline:

Evaluation:

Form Originator: KIRK2, Kendall Kirk Date Form Created: 9/6/2011

Form Last Updated by: , Date Form Last Updated: 10/10/2011

Form Number: 4282

Approval

<i>Jan R. Gray</i>	10-12-2011	<i>Carice W. Mubase</i>	11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
<i>Patricia A. Dayton</i>	10.12.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
<i>Robert J. Kocinski</i>	10/13/11	<i>Chris R. Nelson</i>	
Chair, College Curriculum Committee	Date	Provost	Date
<i>Paul Whitcomb</i>	10/13/11	<i>James O. Holt</i>	12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		



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

Change a Course - Abbrev & Number: AG M- 405
 Corresponding Lab Course: AG M-L-405
 Corresponding Honors course: --
 .. **Add Honors course:** --
 Corresponding Graduate course: AG M- -605
 .. **Add Graduate course:** --
Course Title: ENV CONT IN ANIM STR

Brief Statement of Change:
 Update course prerequisites

Last Term taught: 1108 Effective Term: 01/2012	.. Change Abbrev to: .. Change Number to:
.. Change Catalog Title: from: to:	.. Change Transcript Title: from: ENV CONT IN ANIM STR to:

.. Change of Credit:	From: Fixed Credit: 3 (2,3) 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	.. B-Lab (w/fee)	.. Pass/Fail Only	.. X Graded	.. English Composition	.. Oral Communication
.. D-Seminar	.. E-Independent Study	.. Variable Title	.. Creative Inquiry	.. Mathematics	.. Natural Science w/Lab
.. F-Tutorial (w/fee)	.. G-Studio	.. Repeatable	.. maximum credits	.. Math or Science	.. A&H (Literature)
.. H-Field course	.. I-Study Abroad	from:	to:	.. A&H (Non-Literature)	.. Social Science
.. L-Lab (no/fee)	X N/B-Lecture/Lab(w/fee)			.. CCA	.. STS
.. N/L-Lecture/Lab(no fee)					

.. **Change Catalog Description:**
 from:
 to:
X Change Prerequisite(s):
 from: AGM 303, PHYS 200, PHYS 207, or AVS 301
 to: AGM 303, or AVS 301, or consent of instructor
Learning Objectives:
Topical Outline:
Evaluation:

Form Originator: JCHSTN, John Chastain **Date Form Created:** 9/14/2011
Form Last Updated by: , **Date Form Last Updated:** 10/12/2011
Form Number: 4309

Approval

	10-12-2011		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/12/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		
Chair, College Curriculum Committee	Date	Provost	Date
	10/13/11		12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		



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

X Change a Course - Abbrev & Number: AG M- 405
 Corresponding Lab Course: AG M-L-405
 Corresponding Honors course: --
.. Add Honors course: --
 Corresponding Graduate course: AG M- -605
.. Add Graduate course: --
Course Title: ENV CONT IN ANIM STR

Brief Statement of Change:
 We are updating the course prerequisites. The two populations of students in the course are AG M students and AVS students. AG M students will have the appropriate background after taking AG M 303, and since PHYS 200 or 207 are prerequisites for AG M 303, there is no need to mention them as prerequisites for AG M 405. AVS students have a different background, but they are ready for the course if they have taken AVS 301. Students who are not from AG M or AVS will rely on consent of the instructor.

Last Term taught: 1108 **.. Change Abbrev to:**
 Effective Term: 01/2012 **.. Change Number to:**
.. Change Catalog Title: **.. Change Transcript Title:**
 from: from: ENV CONT IN ANIM STR
 to: to:

.. Change of Credit: From: Fixed Credit: 3 (2,3) 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):
.. 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:
X Change Prerequisite(s):
from: AGM 303, PHYS 200, PHYS 207, or AVS 301
to: AGM 303, or AVS 301, or consent of instructor
Learning Objectives:
Topical Outline:
Evaluation:

Form Originator: JCHSTN, John Chastain **Date Form Created:** 9/14/2011
Form Last Updated by: , **Date Form Last Updated:** 11/11/2011
Form Number: 4309

Approval

Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
Department Chair	Date	Chair, Graduate Curriculum Committee	Date

000022



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

X Change a Course - Abbrev & Number: AG M- 371

Corresponding Lab Course: --
Corresponding Honors course: --

.. Add Honors course: --
Corresponding Graduate course: --

.. Add Graduate course: --
Course Title: AG MECH PRACTICUM

Brief Statement of Change:

The previous course description stated that the course could be repeated for up to six credits and that it was restricted to sophomores. We are proposing to eliminate these restrictions.

Last Term taught: 1106 .. Change Abbrev to:
Effective Term: 08/2012 .. Change Number to:

.. Change Catalog Title: .. Change Transcript Title:
from: from: AG MECH PRACTICUM
to: to:

From: Fixed Credit: (,) To: Fixed Credit: (,)
Change of Credit Variable Credit: 1-3 (-), (-) 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	X Change Course Modifier	Change General Education Designation
from:	to:	from: to:
.. A-Lecture Only	.. X Pass/Fail Only X	.. English Composition ..
.. B-Lab (w/fee)	.. .. Graded ..	.. Oral Communication ..
.. D-Seminar	.. .. Variable Title ..	.. Mathematics ..
.. E-Independent Study	.. .. Creative Inquiry ..	.. Natural Science w/Lab ..
.. F-Tutorial (w/fee)	.. X Repeatable X	.. Math or Science ..
.. G-Studio	.. maximum credits	.. A&H (Literature) ..
X H-Field course	from:	.. A&H (Non-Literature) ..
.. I-Study Abroad	to:12	.. 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: Preplanned internship with an approved employer Involved in agricultural technical or business endeavors. A minimum 130 hours of supervised responsibility are required per credit hour. A work journal, written/oral reports, company consent and evaluation must be on file. May be repeated for a maximum of six credits. To be taken Pass/Fail only.

to: Preplanned internship with an approved employer involved in agricultural technical or business endeavors. 130 hours of supervised responsibility are required per credit hour. A work journal, written/oral reports, company consent and evaluation must be on file. May be repeated for a maximum of twelve credits. To be taken Pass/Fail only.

X Change Prerequisite(s):

from: Preq: Sophomore standing and consent of department.

to: Preq: Consent of department.

Learning Objectives: 1) Gain "technical or business related" work relevant to the agricultural industry.
2) Learn to handle "significant responsibility" commensurate with the specific employment.

Topical Outline: This is an internship course that will vary in scheduling according to the specific employment. As such, a specified topical outline is not appropriate. As outlined in the syllabus, each student is required to maintain a journal throughout his or her internship experience, publish a poster highlighting the experience, and deliver a presentation to a group of students (usually via AGM 101).

A general example of an internship follows:

- Declaration of student's intent to intern.
- Declaration of employer's intent to provide internship.
- Introduction to intern's responsibilities and duties.
- On-site performance of intern responsibilities and duties.
- Reflection on responsibilities and duties.
- Employer evaluation of intern performance
- Assignments to address any shortcomings indicated by employer
- Development of poster for public display.
- Poster publishing.
- Development of presentation for oral delivery.
- Presentation delivery.


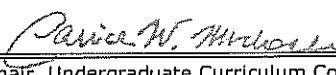
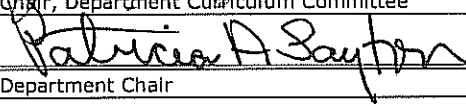
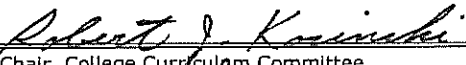
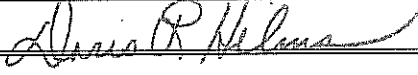
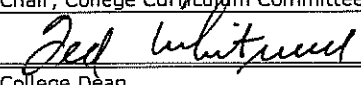

Evaluation: Employer Evaluation..... 40%
Oral Presentation..... 30%
Poster 30%

Fail 0 - 75
Pass 75 - 100

000023

Form Originator: KIRK2, Kendall Kirk Date Form Created: 9/6/2011
 Form Last Updated by: , Date Form Last Updated: 10/10/2011
 Form Number: 4277

Approval

	10-12-2011		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10.12.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		
Chair, College Curriculum Committee	Date	Provost	Date
	10/13/11		12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		

000024



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

X Change a Course - Abbrev & Number: AG M- 101

Corresponding Lab Course: --

Corresponding Honors course: --

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

Corresponding Graduate course: --

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

Course Title: INTRO AG MECH & BUS

Brief Statement of Change:

Revising the course description to address new developments in the course relative to career preparation and exposure.

Last Term taught: 1008

.. **Change Abbrev to:**

Effective Term: 01/2012

.. **Change Number to:**

.. **Change Catalog Title:**

.. **Change Transcript Title:**

from:

from: INTRO AG MECH & BUS

to:

to:

.. From: Fixed Credit: 1 (0,3) 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:	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: Introduces the Agricultural Mechanization and Business program. Gives an overview of the curriculum and explains the opportunities for extracurricular activities. Covers long-term interaction between the department and alumni.

to: Introduces the Agricultural Mechanization and Business program. Gives an overview of the curriculum, introduces students to relevant extracurricular activities, exposes students to employment opportunities through alumni and interns, and helps students to prepare for careers relevant to the major.

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

from:

to:

Learning Objectives: 1. Develop an understanding of the career possibilities for AGM graduates.

2. Improve student's effectiveness in professional communications.

3. Establish peer to peer and student to alumni networking opportunities.

Topical Outline: Week 1: Introduction

Week 2: AGM Club Officers

Week 3: Career Services

Week 4: Study Abroad

Week 5: Mock Interviews

Week 6: Mock Interviews

Week 7: Career Search Tools

Week 8: Alumni Speaker: Machinery

Week 9: Alumni Speaker: Extension

Week 10: Alumni Speaker: Ag Processing

Week 11: Alumni Speaker: Graduate School

Week 12: Alumni Speaker: Production Ag

Week 13: Intern Speaker

Week 14: Intern Speaker

Week 15: Intern Speaker

Evaluation: *Attendance/HW 70%

Mock Application 15%

Mock Interview 15%

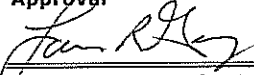

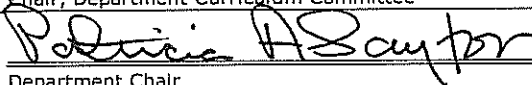
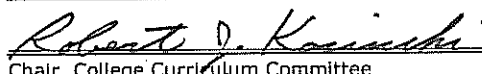
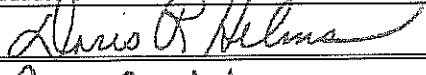
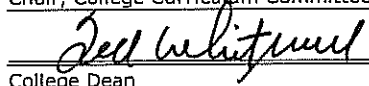
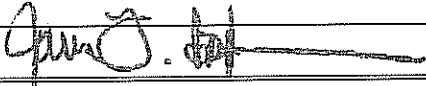
*Generally a homework assignment will include a requirement to provide a brief word of thanks for the guest speaker, specifically stating something learned through his or her presentation. For some guest speakers such as student interns, this will not be required. On dates that this is required, it will account for 25% of the attendance/homework grade.

000025

- A 90 - 100
- B 80 - 90
- C 70 - 80
- D 60 - 70
- F 0 - 60

Form Originator: KIRK2, Kendall Kirk **Date Form Created:** 9/6/2011
Form Last Updated by: , **Date Form Last Updated:** 10/10/2011
Form Number: 4280

Approval

	10-12-2011		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10.12.11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		
Chair, College Curriculum Committee	Date	Provost	Date
	11/13/11		12/20/11
College Dean	Date	President	Date
			12/21/11
Director, Calhoun Honors College	Date		

000026



Curriculum and Course Change System - Print New Course Form

Course Abbreviation & Number:
X New Undergraduate Course: AG M- 419
.. New Honors Course: --
.. New Graduate Course: -

Effective Term: 01/2012
Catalog Title: Agribusiness Innovation and Entrepreneurship
Transcript Title: Ag Entrepreneurship

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): ~~EE 419~~ *Not approved -*

Catalog Description: Emphasis on assessing students' abilities as agribusiness entrepreneurs, evaluating the feasibility of a business idea, creating strategies for organizing and marketing the agricultural business, exploring pricing for products or services, developing capital needs and sound financial statements, and researching, developing, and writing a comprehensive plan for the business.

Prerequisite(s): Introductory Agribusiness Management course.

Projected Enrollment:
Year 1 - 10 Year 2 - 15 Year 3 - 20 Year 4 - 25

Required course for students in: No.

Statement of need and justification based on assessment results of student learning outcomes: Agricultural industry representatives and employers have expressed their needs on students' abilities as agribusiness entrepreneurs to evaluate the feasibility of a business idea. Course will serve this purpose. Students will begin the course with an exploration of the skills and characteristics needed to run an agricultural business - to be an agri-preneur. They will evaluate their business concept for financial, product, and market feasibility before developing the actual business plan.

Textbook(s): Planning the Entrepreneurial Venture, by Kauffman Foundation for Entrepreneurship

Learning Objectives: Through the development of their business plans for agricultural enterprises (e.g. dairy, swine, crops, fruits, food processing, etc.) students will demonstrate their ability to: (1) determine the feasibility of a business concept as compared to a business model; (2) conduct research on their chosen product/service and its relation to the industry, competition, and other market considerations; (3) project the financial situation of their business concept including needed start-up funds, pricing strategies, and sources of financing using break-even analysis, basic cash accounting systems, and financial ratios; and (4) research, develop, and write a business plan, incorporating all the elements needed for a start-up venture.


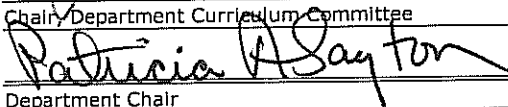

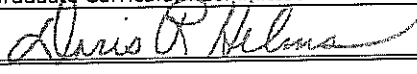
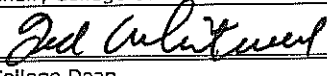
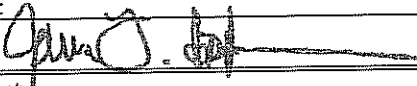
- Topical Outline:**
- 1 Course Overview
 - 2 Becoming an Entrepreneur (Chapter 1)
 - 3 Recognizing Opportunities (Chapter 2)
 - 4 Defining a Business Concept (Chapter 3)
 - 5 Testing Feasibility (Chapter 4)
 - 6 Business Plan Template Review (Kauffman Excel Files)
 - 7 Management and Organization Planning (Chapter 5)
 - 8 Product/Service Planning (Chapter 6)
 - 9 Market Planning: Industry and Competition (Chapter 7)
 - 10 Market Planning: Industry and Competition (Chapter 7)
 - 11 Market Planning: Market Analysis (Chapter 8)
 - 12 Market Planning: Penetration (Chapter 9)
 - 13 Market Planning: Pricing (Chapter 10)
 - 14 Market Planning: Pricing (Chapter 10)
 - 15 Full Business Plan Template Review (Kauffman Excel Files)
 - 16 Financial Planning: Start-Up Costs and Sales (Chapter 11)
 - 17 Financial Planning: Inventory and Operating Expenses (Chapter 12)
 - 18 Financial Planning: Cash Outlays and Sources (Chapter 13)
 - 19 GUEST SPEAKER
 - 20 Financial Planning: Financial Statements (Chapter 14)
 - 21 GUEST SPEAKER
 - 22 Financial Planning: Financial Statements (Chapter 14)
 - 23 GUEST SPEAKER
 - 24 Finalizing the Business Plan (Chapter 15)
 - 25 GUEST SPEAKER
 - 26 Finalizing the Business Plan (Chapter 15)
 - 27 GUEST SPEAKER
 - 28 STUDENT PRESENTATIONS

Evaluation: There will be at most 15 assignments during the semester which will compose the overall business plan. Business Plan assignments will be graded as Acceptable (70% correct) / Unacceptable. Students will have one chance to review and improve the assignment to the expected level. Course grading: for a D, complete seven assignments with a grade of Acceptable; for a C complete ten assignments with a grade of Acceptable; for a B complete thirteen assignments with a grade of Acceptable; and for an A complete all the assignments, which correspond to the entire business plan, with a grade of Acceptable. Assignments will not be accepted after the due date. 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%.

000027

Form Originator: WFERREI, Wilder Ferreira **Date Form Created:** 9/12/2011
Form Last Updated by: WFERREI, Wilder Ferreira **Date Form Last Updated:** 9/12/2011
Form Number: 4297

Approval

	9-30-11		
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	9/30/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/13/11		
Chair, College Curriculum Committee	Date	Provost	Date
	10/13/11		12/20/11
College Dean	Date	President	Date
			2/21/11
Director, Calhoun Honors College	Date		

Approvals related to cross-listing require the following signatures:

[Child Course] Chair, Department Curriculum Committee	Date	[Child Course] Chair, College Curriculum Committee	Date
[Child Course] Department Chair	Date	[Child Course] College Dean	Date

Kendall Kirk

From: Kendall Kirk
Sent: Wednesday, October 12, 2011 3:15 PM
To: John Chastain; yhan@clermson.edu; Wnferreira@aol.com; Calvin Sawyer; Kendall Kirk
Cc: Robert Kosinski <rjksn@clermson.edu> (rjksn@clermson.edu)
Subject: AGM Courses and Final Exams

AGM-419

AGM Curriculum Committee:

Earlier this week there was a motion and a second for AGM to "allow courses with larger than one credit hour to go without a final exam." The votes have been cast and our AGM faculty has unanimously passed the motion. Please let me know if you have any questions.

-Kendall

Kendall R. Kirk, Ph.D.
Assistant Professor
Agricultural Mechanization & Business
School of Agricultural, Forest, and Environmental Sciences
235 McAdams Hall
Clemson University
Clemson, SC 29634-0310

Re: AGM 419 - No Final Exam



Curriculum and Course Change System - Print Major Form

Change Major Name: Agricultural Education

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: Explanation of proposed changes to AG ED Curriculum

- 1) Add HORT 101 to fresh man first semester.
- 2) Fix specification for All Emphasis areas stating Arts and Humanities (Non - Lit) and STS Requirements.
- 3) Replace "APEC 202" with 3 hours of social science requirement.
- 4) Change "CH 105" and "CH 106" to "CH 101" and "CH102" because students need this due to their technical course requirements such as "CSENV 202" and "HORT 306".
- 5) Move Arts and Humanities (Literature) Requirement to Senior First Semester and replace with "EXST 301".
- 6) "AG ED 355" becomes "EDSP 370" which is an SC Department of Education and NCATE requirement.
- 7) "BIOL 201" becomes "PHYS 207" because physics content is needed for the CSENV and AGM courses.
- 8) Footnote "HIST 193" changed to "HIST 173". This was a typo in previous year.
- 9) All emphasis areas "FOR 305" or "WFB 412" become "ENR 302" as suggested by Dr. Pat Layton.
- 10) Teaching emphasis technical requirement becomes "AG ED 416".
- 11) Fix all footnotes accordingly with the changes and proper order.

Form Originator: CCAMPB3, Christina Leard Date Form Created: 10/14/2011

Form Last Updated by: CCAMPB3, Christina Leard Date Form Last Updated: 10/14/2011

Form Number: 4514

Approval

	10/14/11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/14/11		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/14/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
	10/18/11		12/21/11
College Dean	Date	President	Date



Curriculum and Course Change System - General Education Checklist

000030

Major Name: Biochemistry

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
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

*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:

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: Both academic and professional ethics are distributed throughout our program. The academic component is strong throughout, and the professional component receives more emphasis as the students advance. In the introductory course BIOCH 103 (Careers in Biochemistry and Genetics), the students spend a class period discussing typical ethical problems that occur in biochemistry and the next week must complete a portfolio document exploring an ethical issue. In BIOL 110/111 (Principles of Biology I and II) students work in collaborative laboratory groups, and get a strong orientation to the definition of plagiarism and the value of academic honesty. In BIOCH 301 (Molecular Biochemistry) and BIOCH 431 (Physical Approach to Biochemistry), this emphasis on academic honesty continues, and students examine some professional ethical problems from the history of the science, such as the role of Rosalind Franklin in the discovery of the structure of DNA. In BIOCH 432 (Biochemistry of Metabolism) and BIOCH 436 (Molecular Biology), the students discuss the ethics of using the powerful tools they are learning in medicine, agriculture, and related areas. PHIL 326 (Philosophy and Values) allows students to discuss the ethical and social obligations of scientists and the role of values (including social and political values) in science. In BIOCH 493 (Senior Seminar) students begin to practice ethics in the professional arena by presenting two published research articles and writing a summary of each of those published papers while following all the scientific conventions on attribution. In this course, we include extensive discussions on plagiarism, authorship, and scientific professional ethics in the context of laboratory research and published research articles. Our assessment of this competency takes place in BIOCH 493. This course was chosen for our assessment as it is a required senior-level course for all of our majors and students are expected to apply what they have learned from all of their previous biochemistry courses. The rubric used for grading PowerPoint presentations and written summaries includes sections related to proper attribution of ideas, figures, etc. in the PowerPoint presentations and proper citation and avoidance of plagiarism in the written summaries. This rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are given individual feedback on each of these assignments and are allowed to submit revisions to correct such errors and to further ingrain the importance of these professional ethics. If, after the first presentation and written summary, greater than 75% of the students are not meeting the rubric standard, a class session will be spent to discuss areas in which students are having issues and to further emphasize the importance of ethical judgment in science. If any student continues to have issues, these will be dealt with individually. At the end of the BIOCH 493 course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the ethical judgment competency will be revised.

Communication Integration Plan - Address competencies, implementation, and assessment: Students take ENGL 103 (Accelerated Composition) and either COMM 150 (Introduction to Human Communication) or COMM 250 (Public Speaking) during their freshman year. Competencies in both oral and written communication are further developed in most of the upper-level laboratory courses. In GEN 303 (Molecular and General Genetics Laboratory), CH 228 (Organic Chemistry Lab), BIOCH 433 (General Biochemistry Laboratory I), and BIOCH 434 (General Biochemistry Laboratory II), students participate in group discussions and write lab reports. Communication is particularly stressed in BIOCH 493 (Senior Seminar). In this course, students are required to two oral presentations and submit two written summaries based on published research articles. Students are instructed on scientific writing and oral presentations, including creation of effective PowerPoint presentations.

Our assessment of this competency takes place in BIOCH 493, as this required course is considered to be a finishing course in which students are expected to apply the tools they have learned from their previous courses to show they can communicate as a professional scientist. The student presentations are graded with respect to the general knowledge/presentation of the article, effective use of slides, proper attribution, and overall poise/speaking skills. Written summaries are graded with respect to flow (Introduction, results, and discussion), proper attribution, sentence/paragraph construction, and proofreading. The grading rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are provided with individual feedback on their first written summary and oral presentation in a meeting with the instructor and are expected to use this feedback to improve their performance in the second half of the course. After the first set of presentations and written summaries are completed by each student, general issues will be discussed in class to benefit all of the students in their preparation for the second set of assignments. The scope and length of this discussion will be based on how well or poorly students did, and the problems they are having. If 75% or more of the students do not perform satisfactorily, the instructor will provide a workshop for those students to give them more focused instruction. Students will again meet with the instructor after the second presentation to receive feedback that includes which aspects the student improved upon and which aspects still need work. If any student continues to have issues, these will be dealt with individually. At the end of the BIOCH 493

000051


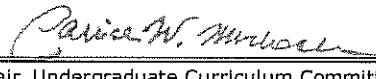
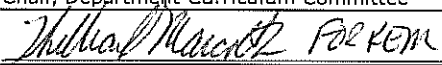
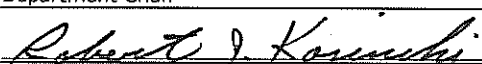
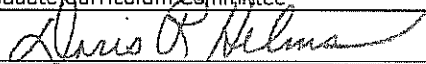
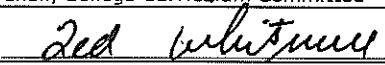
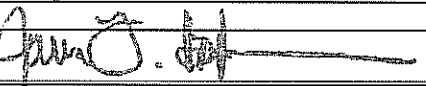
course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the communication competency will be revised.

Critical Thinking Integration Plan - Address competencies, implementation, and assessment: Reasoning, critical thinking, and problem solving are at the core of the scientific enterprise and are primary areas of emphasis throughout our curriculum. Students are introduced to general critical thinking in BIOCH 103 (Careers in Biochemistry and Genetics), in which they must evaluate ethical problems and societal issues that occur in biochemistry. The rest of our courses stress technical reasoning. Students in BIOL 110/111 (Principles of Biology I and II) must answer approximately 1,500 "study guide" questions, a third of which involve these skills. Typically they must interpret experimental data, predict the results of a novel experiment, graph relationships, etc. These skills are expanded in BIOCH 301 (Molecular Biochemistry), in which students must draw conclusions from experimental results. All exams in BIOCH 301 contain problems of this type. In GEN 302 (Molecular and General Genetics), students spend about a third of the semester solving complex mating problems using the laws of probability. Then, as they explore molecular mechanisms, they must solve problems in chemistry, mathematics, physics, and biochemistry. BIOCH 431 (Physical Approach to Biochemistry) questions students constantly in an effort to improve their analytical skill, and requires a large project in which they must analyze several experiments in order to produce a restriction map. Students in BIOCH 432 (Biochemistry of Metabolism) and BIOCH 436 (Molecular Biology) study classic experiments and discuss how previous investigators sorted through competing hypotheses, collected data, analyzed it, and devised even more powerful, predictive hypotheses. GEN 440 (Bioinformatics) familiarizes students with nucleic acid and protein databases and bioinformatics tools available for utilization of these large datasets, and requires group and individual projects that pose relevant questions to be answered through querying the databases and computational analysis of the output. Finally, in BIOCH 493 (Senior Seminar) students use their knowledge of biochemistry to critically analyze data from published research articles and synthesize it into a unified presentation that includes background information on the research area and results. BIOCH 493 presentations are given before the class and the faculty instructor. Students are expected to participate in class discussions after the presentations, in which future research avenues, other approaches to the research, etc. are examined.

Assessment occurs in BIOCH 493 as the presentation of research papers requires critical analysis of published research data and synthesis of concepts from the previous courses in the curriculum. Presentations are graded for this competency with respect to the student's overall understanding of the article presented, how the student detailed the most critical results from the article, and the student's integration of the article into a larger discussion of the relevance of the research and future avenues. The four-point grading rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are provided with individual feedback on their first oral presentation in a meeting with the instructor and are expected to use this feedback to improve their performance in the second half of the course. If 75% or more of the students do not perform satisfactorily in this area, the instructor will provide a workshop for those students to give them more focused instruction. Students will be provided with feedback on their second presentation as well to indicate which areas showed improvement and which areas still need work. If any student continues to have issues, these will be dealt with individually. At the end of the BIOCH 493 course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the critical thinking competency will be revised.

Form Originator: HLIANG, Haiying Liang **Date Form Created:** 10/3/2011
Form Last Updated by: HLIANG, Haiying Liang **Date Form Last Updated:** 10/14/2011 **Form Number:** 4444

Approval

	10/14/2011		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	10/14/2011		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/14/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
	10/18/11		12/21/11
College Dean	Date	President	Date

000032



Curriculum and Course Change System - General Education Checklist

Major Name: Genetics

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
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

*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:

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: Both academic and professional ethics are distributed throughout our program. The academic component is strong throughout, and the professional component receives more emphasis as the students advance. In the introductory GEN 103 (Careers in Biochemistry and Genetics), the students spend a class period discussing typical ethical problems that occur in genetics and the next week must complete a portfolio document exploring an ethical issue. In BIOL 110/111 (Principles of Biology I and II) students work in collaborative laboratory groups, and get a strong orientation to the definition of plagiarism and the value of academic honesty. GEN 302 (Molecular and General Genetics) continues this emphasis on academic honesty, and students also examine the ethical implication of issues such as determining a patient's predisposition to disease, privacy rights, sex selection, eugenics, and cloning. In GEN 410 (Fundamentals of Genetics I) and GEN 411 (Fundamentals of Genetics I Laboratory), the students discuss materials and data ownership such as the use of Materials Transfer Agreements (MTAs) and research safety protocols (IBC protocols), human subjects and human genetic data sharing rules (IRB requirements), ethical and research protocols for genetically modified crops using specific examples, and the ethical use of statistical evidence in genetics for probability theories applied in courtrooms, gene therapies, and drug efficacy trials. Additionally, technical concerns such as experimental design and the importance of fostering open and honest communication with others in the laboratory and research community through sharing accurate and updated experimental documentation are also discussed. In GEN 493 (Senior Seminar) students begin to practice ethics in the professional arena by presenting two published research articles and writing a summary of each of those published papers while following all the scientific conventions on attribution. In this course, we include extensive discussions on plagiarism, authorship, and scientific professional ethics in the context of laboratory research and published research articles.

Our assessment of this competency takes place in GEN 493. This course was chosen for our assessment as it is a required senior-level course for all of our majors and students are expected to apply what they have learned from all of their previous genetics courses. The rubric used for grading PowerPoint presentations and written summaries includes sections related to proper attribution of ideas, figures, etc. in the PowerPoint presentations and proper citation and avoidance of plagiarism in the written summaries. This rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are given individual feedback on each of these assignments and are allowed to submit revisions to correct such errors and to further ingrain the importance of these professional ethics. If, after the first presentation and written summary, greater than 75% of the students are not meeting the rubric standard, a class session will be spent to discuss areas in which students are having issues and to further emphasize the importance of ethical judgment in science. If any student continues to have issues, these will be dealt with individually. At the end of the GEN 493 course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the ethical judgment competency will be revised.

Communication Integration Plan - Address competencies, implementation, and assessment: Students take ENGL 103 (Accelerated Composition) and either COMM 150 (Introduction to Human Communication) or COMM 250 (Public Speaking) during their freshman year. Competencies in both oral and written communication are further developed in most of the upper-level laboratory courses. In BIOCH 302 (Molecular Biochemistry Laboratory), CH 228 (Organic Chemistry Laboratory), GEN 411 (Fundamentals of Genetics I Laboratory), and GEN 421 (Fundamentals of Genetics II Laboratory), students participate in group discussions and write lab reports. In GEN 410 (Fundamentals of Genetics I), students participate in group discussions and a semester project. Communication is particularly stressed in GEN 493 (Senior Seminar). In this course, students are required two oral presentations and two written summaries based on published research articles. Students are instructed on scientific writing and oral presentations, including creation of effective PowerPoint presentations.


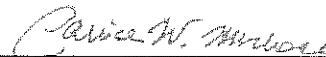
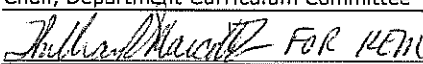
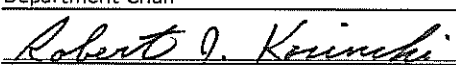
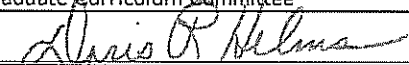
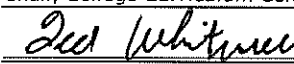

Our assessment of this competency takes place in GEN 493, as this required course is considered to be a finishing course in which students are expected to apply the tools they have learned from their previous courses to show they can communicate as a professional scientist. The student presentations are graded with respect to the general knowledge/presentation of the article, effective use of slides, proper attribution, and overall poise/speaking skills. Written summaries are graded with respect to flow (introduction, results, and discussion), proper attribution, sentence/paragraph construction, and proofreading. The grading rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are provided with individual feedback on their first written summary and oral presentation in a meeting with the instructor and are expected to use this feedback to improve their performance in the second half of

the course. After the first set of presentations and written summaries are completed by each student, general issues will be discussed in class to benefit all of the students in their preparation for the second set of assignments. The scope and length of this discussion will be based on how well or poorly students did, and the problems they are having. If 75% or more of the students do not perform satisfactorily, the instructor will provide a workshop for those students to give them more focused instruction. Students will again meet with the instructor after the second presentation to receive feedback that includes which aspects the student improved upon and which aspects still need work. If any student continues to have issues, these will be dealt with individually. At the end of the GEN 493 course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the communication competency will be revised.

Critical Thinking Integration Plan - Address competencies, implementation, and assessment: Reasoning, critical thinking, and problem solving are at the core of the scientific enterprise and are primary areas of emphasis throughout our curriculum. Students are introduced to general critical thinking in GEN 103 (Careers in Biochemistry and Genetics), in which they must evaluate ethical problems and societal issues that occur in genetics. However, the rest of our courses stress technical reasoning. Students in BIOL 110/111 (Principles of Biology I and II) must answer approximately 1,500 "study guide" questions, a third of which involve these skills. Typically they must interpret experimental data, predict the results of a novel experiment, graph relationships, etc. These skills are expanded in GEN 302 (Molecular and General Genetics), in which students spend about a third of the semester solving complex mating problems using the laws of probability. Then, as they explore molecular mechanisms, they must solve problems in chemistry, mathematics, physics, and biochemistry. In BIOCH 301 (Molecular Biochemistry), students must draw conclusions from experimental results. All exams in BIOCH 301 contain problems of this type. Every laboratory in GEN 303 (Molecular and General Genetics Laboratory) involves reasoning and problem solving. GEN 410 (Fundamentals of Genetics I), GEN 411 (Fundamentals of Genetics I Laboratory), GEN 420 (Fundamentals of Genetics II), and GEN 421 (Fundamentals of Genetics II Laboratory) continue this emphasis on problem solving and also the emphasis on bringing together knowledge from the student's entire mathematics and science background. GEN 440 (Bioinformatics) familiarizes students with nucleic acid and protein databases and the bioinformatics tools available for utilization of these large data sets, and requires group and individual projects that pose relevant questions to be answered through querying the databases and computational analysis of the output. Finally, in GEN 493 (Senior Seminar) students use their genetics knowledge to critically analyze data from published research articles and synthesize it into a unified presentation that includes background information on the research area and results. GEN 493 presentations are given before the class and the faculty instructor. In addition, students are expected to participate in class discussions after the presentations, in which future research avenues, other approaches to the research, etc. are examined. Assessment occurs in GEN 493, as the presentation of research papers requires critical analysis of published research data and synthesis of concepts from the previous courses in the curriculum. Presentations are graded for this competency with respect to the student's overall understanding of the article presented, how the student detailed the most critical results from the article, and the student's integration of the article into a larger discussion of the relevance of the research and future avenues. The four-point grading rubric will be included in the syllabus and discussed in class to ensure students understand the expectations. Students are provided with individual feedback on their first oral presentation in a meeting with the instructor and are expected to use this feedback to improve their performance in the second half of the course. If 75% or more of the students do not perform satisfactorily, the instructor will provide a workshop for those students to give them more focused instruction. Students will be provided with feedback on their second presentation as well to indicate which areas showed improvement and which areas still need work. If any student continues to have issues, these will be dealt with individually. At the end of the GEN 493 course, if more than 25% of the students do not score Good or Excellent on the rubric, the curriculum and syllabi of the courses used to implement the critical thinking competency will be revised.

Form Originator: HLIANG, Haiying Liang **Date Form Created:** 10/3/2011
Form Last Updated by: HLIANG, Haiying Liang **Date Form Last Updated:** 10/14/2011 **Form Number:** 4443

Approval

	10/14/11		11/4/2011
Chair, Department Curriculum Committee	Date	Chair, Undergraduate Curriculum Committee	Date
	14 Oct 2011		
Department Chair	Date	Chair, Graduate Curriculum Committee	Date
	10/14/11		12/20/11
Chair, College Curriculum Committee	Date	Provost	Date
	10/18/11		12/21/11
College Dean	Date	President	Date