

University Courses & Curricula Committee 2016-2017

October 19th, 2016
Talley Student Union
4140
12:45pm-2:45pm

Call to Order 12:45pm

- Welcome and Instructions, Chair Andy Nowel
- Remarks from Associate Vice Provost, Dr. Barbara Kirby
- Approval of UCCC October 5th, 2016 Minutes
- Course and Curricular Business

Old Business

Action	Type	Notes
MB 360 Scientific Inquiry in Microbiology: At the Bench	Revisions	Previously Tabled at the Sept. 7 2016 meeting

New Business

Consent Agenda		
Action	Type	Notes
ST 307 Introduction to Statistical Programming - SAS	Revision	Changing prerequisites/ corequisites
BIO 233 Human-Animal Interactions	Revision	Changing prefix to ZO
BIO 250 Animal Anatomy and Physiology	Revision	Changing prefix to ZO
BIO 317 Primate Ecology and Evolution	Revision	Changing prefix to ZO
BIO 333 Captive Animal Biology	Revision	Changing prefix to ZO
BIO 350 Animal Phylogeny and Diversity	Revision	Changing prefix to ZO
BIO 402 Invertebrate Biology	Revision	Changing prefix to ZO
BIO 410 Introduction to Animal Behavior	Revision	Changing prefix to ZO
BIO 486 Capstone Course in Zoology	Revision	Changing prefix to ZO
BIO 456 Epigenetics, Development, and Disease	Revision	Changing prefix to GN
BIO 295 Special Topics in Biology	Revision	Changing prefix to BSC and title to "Special Topics in Biological Sciences"
BIO 495 Special Topics in Biology	Revision	Changing prefix to BSC and title to "Special Topics in Biological Sciences"
GN 492 External Learning Experience	Drop	Dropping due to duplication in dept.
GN 493 Special Problems in Genetics	Drop	Dropping due to duplication in dept.
GN 495 Special Topics in Genetics	Drop	Dropping due to duplication in dept.
MB 493 Special Problems in Microbiology	Drop	Dropping due to duplication in dept.
MB 495 Special Topics in Microbiology	Drop	Dropping due to duplication in dept.
TOX 495 Special Topics in Toxicology	Drop	Dropping due to duplication in dept.
ZO 492 External Learning Experience	Drop	Dropping due to duplication in dept.
ZO 493 Special Problems/ Research Exploration	Drop	Dropping due to duplication in dept.
TOX 499 Undergraduate Research in Toxicology	Drop	Dropping due to duplication in dept.
USC 292 Service Learning Program Leader Development II	Revision	Adding S/U option and changing title and prefix.
USC 291 Service Learning Program Leader Development I	Revision	Changing prefix and title
MUS 202 Introduction to Music Literature II	Revision	Change to description adding one line about transportation.

College of Humanities and Social Sciences			
Presenter	Reviewers	Action	Type
Driscoll	Klesath, Beller, Tarcy	ANT 252 Cultural Anthropology	Slight changes to the Student Learning Outcomes and Description.
Despain	Reider, Peretti, Podurgal	ANT 253 Unearthing the Past: Introduction to World Archaeology	Slight changes to the Student Learning Outcomes and Description.
Driscoll	Hergeth, Fath, Orphanides	PS 303 Race in US Politics	Slight changes to the Student Learning Outcomes and Description.
Despain	Ferguson, Beller, Fath	PS 306 Gender and Politics in the United States	Changes to Student Learning Outcomes, Description, and offering. Crosslisted WGS

College of Agriculture and Life Sciences			
Presenter	Reviewers	Action	Type
Tarcy	Hergeth, Banks, Driscoll	Agribusiness Management Curriculum (4 year)	Revising requirements and electives.
Trivedi	Lindsay, Hessling, Ferguson	Certificate in Swine Science	New Certificate Program

College of Engineering			
Presenter	Reviewers	Action	Type
Ferguson	Podurgal, Banks, Driscoll	CSC 455(555) Social Computing	New Course Dual Level

College of Science			
Presenter	Reviewers	Action	Type
Klesath	Lindsay, Peretti, Despain	GN 451 Genome Science	Revisions to Requisites, Description, and Student Learning Outcomes
Banks	Tarcy, Rieder, Podurgal	GN 496 Genetics Research Experience	New Course
Banks	Trivedi, Beller, Hessling	GN 497 Genetics Teaching Experience	New Course
Klesath	Hergeth, Fath, Hessling	CH 100 Chemistry and Society	Revisions to term offering, component type, description, and Student Learning Outcomes
Klesath	Ophaniedes, Trivedi, Ferguson	MEA 215 Introduction to Atmospheric Sciences	New Course

University College			
Presenter	Reviewers	Action	Type
Beller	Lindsay, Banks, Klesath	HON 312 Outbreak	New Honors Course

Discussion: Subcommittee will meet after the UCCC meeting adjures.

Notes:

- All linked course actions are viewable in CIM.
- To view actions, please click on the hyperlink. You may need to use your Unity ID to log in.
- If you experience issues logging in, please go to <https://next-catalog.ncsu.edu/courseadmin/> and type the course prefix and number into the search bar.

University Courses and Curricula Committee

October 5th, 2016
Talley Student Union 4140
Call to Order: 12:45 pm

Members Present: Chair Andy Nowel, Alton Banks, Amanda Beller, Scott Despain, Catherine Driscoll, Scott Ferguson, Helmut Hergeth, Peter Hessling, Marta Klesath, Edwin Lindsay, David Tarp, Shweta Trivedi (remotely), Mian Wu, Elizabeth Fath, Andreas Orphanides, Kathleen Rieder, Greg Young

Members Absent: Steven Peretti, Richard Podurgal, Michael Robinson, Daniel Harper

Ex-Officio Members Present: Li Marcus, Lexi Hergeth, Charles Clift, Rebecca Swanson, and Kevin Burge

Guests:

WELCOME AND INTRODUCTIONS

- **Remarks from Chair**— Chair Andy Nowel introduced members to begin the meeting.
- **Approval of the Minutes from September 21st 2016** – Approved Unanimously
 - Discussion: Member Alton Banks moved to approve. The past minutes were presented and approved without further discussion.

NEW BUSINESS

- **Consent Agenda**—Approved Unanimously
Discussion: Member Beth Fath moved to approve. The consent agenda was presented and approved with a brief discussion on the number of weeks.
- **ECE 424 (524) Radio System Design**- Approved Pending
Discussion: Member Scott Ferguson presented. Member noticed that on the schedule in the syllabus there are only 14 weeks of content. Member asked if the distinction between the graduate and undergraduate level is clearly stated. Pending adjustment to the weekly schedule in the syllabus.
- **ECE 464 (564) ASIC and FPGA Design with Verilog** – Approved Unanimously
Discussion: Member Scott Ferguson presented the course. No further Discussion.
- **ST 435 (535) Statistical Methods for Quality Productivity Improvement** –Approved Pending
Discussion: Member Alton Banks presented. Member asked about the grading methods, no distinction between the midterm and final exam in CIM but reflected in the syllabus. Pending the adjustment to CIM to reflect the distinction that is in the syllabus. No further discussion.

Discussion: Reminder that the subcommittee will meet after the UCCC Oct. 19th meeting and a brief review of the subcommittee's charge.

Meeting adjourned at 12:56 pm

Respectfully submitted by Lexi Hergeth

MEMORANDUM

September 20, 2016

TO: CALS Undergraduate Course and Curriculum Committee
FROM: Charles Safley, Department Head, ARE
RE: Changes to the Agribusiness Management Curriculum (Four Year)
ABM 2013 Summer I Term

The following changes to the Agribusiness Management Curriculum (ABM) have been approved by the full faculty of the Agricultural & Resource Economics Department, to increase availability of 400-level electives as requested by ABM Majors. Prior to 2014 ARE offered only one 400-level elective (ARE 444) aside from internships (492, 493) or study abroad (495), but four new 400-level electives were added in 2016 (ARE 415, 420, 448, and 455). These changes provide flexibility for ABM students to fit the new courses into the curriculum while achieving on-time graduation. A new 300-level class (ARE 323) that was approved in 2015 is also being added. The changes are shown in red for removals and green for additions on the attached Current and Proposed curriculums and 8-semester displays, detailed as follows:

- Under Departmental Requirements, credit hours in this section are increased from 37 to 43
- ARE 323 – Agribusiness Finance, is added to the finance requirement block
- The former block related to HR and international courses is deleted, removing ARE 332, ARE 345, EC 302, EC 348, and EC 431 from the required electives (some of these courses are no longer offered and the remaining courses may now be taken as ARE Electives as indicated below)
- The ARE Elective requirement for 3 credit hours is removed
- ARE 400-Level Electives for 6 credit hours is added, available with new 400-level courses above (492 and 493 internship credits are excluded as noted on the bottom of the curriculum in green)
- ARE Electives for 6 credit hours is added, providing flexibility for 300- or 400-level electives

- Under Restricted Electives, credit hours are reduced from 21 to 18, by reducing Departmental Electives from 12 to 9, shifting 3 credit hours to Departmental Requirements as detailed above

- Under Free Electives, credit hours are reduced from 12 to 9, shifting 3 credit hours to Departmental Electives as detailed above

Proposed Effective Date: 2017 Spring Term

No consultations with other departments or colleges are required for these changes.

Signature Page attached

SIGNATURE PAGE

CURRICULAR ACTION FOR ABM Spring 2017 Term

Recommended by:

 9/26/14

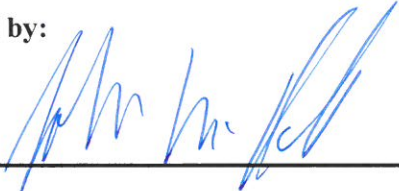
Head, ARE Department Date

Recommended by:

 9/28/16

Chair, CALS Curriculum Committee Date

Endorsed by:

 9/28/16

CALS Dean Date

Approved by:

Chair, University Courses & Curriculum Committee Date

Chair, Council on Undergraduate Education Date

Dean, Division of Academic and Student Affairs (DASA) Date

PROPOSED FALL 2016

B.S. DEGREE IN AGRICULTURAL BUSINESS MANAGEMENT (ABM)

DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS

<u>Orientation (1 credit)</u>	<u>Credits</u>	<u>Departmental Requirements (37-43 Credits)</u>	<u>Credits</u>
ALS 103 Introductory Topics in ALS (freshmen) <u>or</u> ALS 303 Professional Dev. & Career Opp. In ALS	1	ARE 201 Intro to Ag & Resource Economics ¹ <u>or</u> EC 201 Principles of Microeconomics	3
<u>Communications & Tech-Fluency (9 credits)</u>		EC 202 Principles of Macroeconomics	3
COM 110 Public Speaking	3	ACC 200 Intro to Managerial Accounting <u>or</u> ACC 210 Concepts Financial Reporting	3
COM 112, 211, 226, <u>or</u> ENG 332	3		
AEE 226 Computer Applications & Info Tech. <u>or</u> CSC 200 Introduction to Computers & Uses	3	ARE 303 Farm Business Management <u>or</u> ARE 304 Agribusiness Management	3
<u>Mathematical Sciences (9 credits)</u>			
Math 121, 131, <u>or</u> 141 (<i>calculus</i>)	3	ARE 306 Agricultural Law <u>or</u> ARE 309 Environmental Law & Economic Policy	3
Math 114 (<i>finite math</i>) <u>or</u> MA 231 or 241 (<i>calculus</i>)	3		
ST 311 <u>or</u> BUS (ST) 350 (<i>statistics</i>)	3		
<u>Natural Sciences (11 Credits)</u>		ARE 311 Agricultural Markets <u>or</u> ARE 312 Agribusiness Marketing	3
BIO 105 Biology in Modern World <u>and</u> BIO 106 Biology in Modern World Lab. <u>or</u> BIO 181 Introductory Biology I <u>or</u> PB 200 Plant Life	4		
Chemistry (CH 100, 101/102, 201/202, 220, 221/222) <u>or</u> Physics (PY 131, 205, 208, 211, 212) <u>or</u> Marine-Earth-Atmospheric Sciences (MEA 100, 101/110, 130/135, 140, 150, 200) <i>Note: The courses totaling 7 credits or more can be in any combination, i.e., do not have to be from the same category.</i>	7	ARE 321 Agricultural Financial Mgmt. <u>or</u> ARE 323 Agribusiness Finance <u>or</u> BUS 320 Financial Management	3
<u>General Education Program (GEP) (18 credits)</u>		ARE (EC) 301 Intermediate Economics	3
English 101 Academic Writing & Research ¹	4	ARE 332 Human Resource Mgmt. for Agribusiness <u>or</u> ARE 345 Global Agribusiness Management <u>or</u> EC 302 International Macroeconomics <u>or</u> EC 348 Intro to International Economics <u>or</u> EC 431 Labor Economics	3
Humanities Electives (<i>two courses from different disciplines</i>)	6		
Social Sciences Elective ²	3		
Additional Breadth Elective (<i>from Humanities/Social Sciences/Visual and Performing Arts.</i>) ²	3		
Interdisciplinary Perspectives ²	2	ARE Elective	3
US Diversity GEP (<i>co-requisite</i>) ²	--	ARE 400 Level Electives*	6
Global Knowledge GEP (<i>co-requisite</i>) ²	--	ARE Electives*	6
Foreign Language Proficiency (<i>High School Proficiency or FL at 102 level or 200 level</i>)	--	<u>Restricted Electives (2+ 18 Credits)</u>	
<u>Health & Exercise GEP requirement (2 Credits)</u>		Technical Electives (<i>see degree audit for course electives or see Footnote 7 on reverse side</i>)	9
HES at the 100-Level (wellness)	1	Departmental Electives (ARE, ACC, BUS, EC) <u>or</u> Technical Electives (<i>see Footnote 8 on reverse side</i>)	12-9
HES at the 200-Level (activity)	1		
<u>Free Electives (9 credits)</u>		Minimum Hours Required for Graduation 120	
Any course not excluded on the "exceptions" list (<i>see degree audit for course listing</i>).	12-9		

¹ARE 201 and ENG 101 require a grade of C- or better to fulfill the requirement.

²Courses which meet this particular GEP Requirement are listed in the student's degree audit for the major.

* Includes all ARE coursework except ARE 492 & 493

AGRICULTURAL BUSINESS MANAGEMENT (Example Course Sequence)			
FRESHMAN YEAR			
Fall Semester	Credits	Spring Semester	Credits
ALS 103 Intro Topics in ALS	1	EC 202 Principles of Macroeconomics	3
ARE 201 Intro to Ag & Res Economics ¹ OR EC 201 Principles of Microeconomics ¹	3	COM 110 Public Speaking	3
Biology requirement ²	4	CSC 200 Intro to Computers & Uses OR AEE 226 Computer App & Info Tech	3
ENG 101 Academic Writing & Research ¹	4	Mathematics requirement ³	3
Humanities GEP requirement	3	Social Science GEP requirement	3
	15	<i>Total:</i>	15
SOPHOMORE YEAR			
Fall Semester	Credits	Spring Semester	Credits
ACC 200 Intro to Managerial Accounting OR ACC 210 Concepts Financial Reporting	3	ARE 303 Farm Business Management OR ARE 304 Agribusiness Management	3
Mathematics requirement ³	3	ARE 306 Agricultural Law OR ARE 309 Environmental Law & Econ Policy	3
Science requirement ⁴	4	Science requirement ⁴	3
Humanities GEP requirement	3	Inter-Disciplinary Perspectives GEP requirement	2
Health & Exercise Studies GEP requirement	1	Additional Breadth GEP requirement	3
	<i>Total:</i>	Health & Exercise Studies GEP requirement	1
	14	<i>Total:</i>	15
JUNIOR YEAR			
Fall Semester	Credits	Spring Semester	Credits
ARE(EC) 301 Intermediate Microeconomics	3	ARE 311 Agricultural Markets OR ARE 312 Agribusiness Marketing	3
BUS(ST) 350 Econ & Bus Statistics OR ST 311 Introduction to Statistics	3	ARE 336 Resource & Environmental Econ	3
Communication requirement ⁵	3	Free elective ⁹	3
ARE 400 level elective ¹⁰	3	Technical elective ⁶	3
Free elective ⁹	3	Departmental ⁷ or Technical elective ⁶	3
	<i>Total:</i>	ARE 490 Career Seminar in ARE	1
	15	<i>Total:</i>	16
SENIOR YEAR			
Fall Semester	Credits	Spring Semester	Credits
ARE 321 Agricultural Financial Mgmt OR ARE 323 Agribusiness Finance OR BUS 320 Financial Management	3	ARE elective ¹⁰ Technical elective ⁶	3
ARE 433 US Agricultural Policy	3	Departmental ⁷ or Technical elective ⁶	3
Technical elective ⁶	3	ARE 400 level elective ¹⁰	3
Departmental ⁷ or Technical elective ⁶	3	Free elective ⁹	3
ARE elective ¹⁰	3		
	<i>Total:</i>		<i>Total:</i>
	15		15

Minimum Credit Hours Required for Graduation: 120

Footnotes:

1. A grade of "C-" or higher is required.
2. Select a biology or plant biology course from BIO 105 and 106, or BIO 181, or PB 200.
3. Students must complete two math courses. Select one calculus course from MA 121, 131, or 141. Select a second math course from MA 114, 231, or 241.
4. Students must complete two courses from among a list of chemistry, physics and marine-earth-atmospheric sciences, for a minimum of 7 total credit hours. Select from CH 100, 101/102, 201/201, 220, 221/222, PY 131, 205, 208, 211, 212, MEA 100, 101/110, 130/135, 140, 150, 200.
5. Select a communication or writing course from COM 112, 211, 226, or ENG 332.
6. For a technical elective, select a course from among the following set of course listings with prefixes of: AEE, ANS, BAE, BEC, BIO, CH, CS, ENT, ES, ET, FOR, FS, FW, GN, HS, MB, MEA, NR, NTR, PB, PO, PY, SSC, TOX, VMP. (*Before registering for these courses students should check to make sure they have met the necessary prerequisites and that credit restrictions do not apply--- e.g. credit is not allowed for both BIO 105 and BIO 181*).
7. For a departmental elective, select a course from the following set of course listings with prefixes of: ARE, ACC, BUS, EC, MIE or MA 105. (*Before registering for these courses students should check to make sure they have met the necessary prerequisites and that credit restrictions do not apply--- e.g. credit is not allowed for both ARE 201 and either EC 201 or EC 205*).
8. Select a course with an ARE prefix (except ARE 201) not used to satisfy another requirement.
9. For free electives, select courses with enough credits to meet the minimum graduation requirement of 120 total credits
10. For the ARE electives at the 400 level and below, ARE 492 and ARE 493 do not count in this requirement.

CURRENT APPROVED SUMMER 1 2013

B.S. DEGREE IN AGRICULTURAL BUSINESS MANAGEMENT (ABM)

DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS

2136 Code

<u>Orientation (1 credit)</u>	<u>Credits</u>	<u>Departmental Requirements (43 Credits)</u>	<u>Credits</u>
ALS 103 Introductory Topics in ALS (freshmen) <u>or</u> ALS 303 Professional Dev. & Career Opp. In ALS	1	ARE 201 Intro to Ag & Resource Economics ¹ <u>or</u> EC 201 Principles of Microeconomics	3
<u>Communications & Tech-Fluency (9 credits)</u>		EC 202 Principles of Macroeconomics	3
COM 110 Public Speaking	3		
COM 112, 211, 226, <u>or</u> ENG 332	3	ACC 200 Intro to Managerial Accounting <u>or</u> ACC 210 Concepts Financial Reporting	3
AEE 226 Computer Applications & Info Tech. <u>or</u> CSC 200 Introduction to Computers & Uses	3	ARE 303 Farm Business Management <u>or</u> ARE 304 Agribusiness Management	3
<u>Mathematical Sciences (9 credits)</u>			
Math 121, 131, <u>or</u> 141 (<i>calculus</i>)	3	ARE 306 Agricultural Law <u>or</u>	
Math 114 (<i>finite math</i>) <u>or</u> MA 231 or 241 (<i>calculus</i>)	3	ARE 309 Environmental Law & Economic Policy	3
ST 311 <u>or</u> BUS (ST) 350 (<i>statistics</i>)	3		
<u>Natural Sciences (11 Credits)</u>		ARE 311 Agricultural Markets <u>or</u> ARE 312 Agribusiness Marketing	3
BIO 105 Biology in Modern World <u>and</u> BIO 106 Biology in Modern World Lab. <u>or</u> BIO 181 Introductory Biology I <u>or</u> PB 200 Plant Life	4	ARE 321 Agricultural Financial Mgmt. <u>or</u> BUS 320 Financial Management	3
Chemistry (CH 100, 101/102, 201/202, 220, 221/222) <u>or</u> Physics (PY 131, 205, 208, 211, 212) <u>or</u> Marine-Earth-Atmospheric Sciences (MEA 100, 101/110, 130/135, 140, 150, 200) <i>Note: The courses totaling 7 credits or more can be in any combination, i.e., do not have to be from the same category.</i>	7	EC (ARE) 301 Intermediate Economics	3
<u>General Education Program (GEP) (18 credits)</u>		ARE 332 Human Resource Mgmt. for Agribusiness <u>or</u> ARE 345 Global Agribusiness Management <u>or</u> EC 302 Intermediate Macroeconomics <u>or</u> EC 348 Intro to International Economics <u>or</u> EC 431 Labor Economics	3
English 101 Academic Writing & Research ¹	4	ARE 336 Intro to Resource & Env. Economics	3
Humanities Electives (<i>two courses from different disciplines</i>)	6	ARE 433 U.S. Agricultural Policy	3
Social Sciences Elective ²	3	ARE 490 Career Seminar in ARE	1
Additional Breadth Elective (<i>from Humanities/Social Sciences/Visual and Performing Arts.</i>) ²	3	ARE Elective	3
Interdisciplinary Perspectives ²	2	<u>Restricted Electives (21 Credits)</u>	
US Diversity GEP (<i>co-requisite</i>) ²	--	Technical Electives (<i>see degree audit for course electives or see Footnote 7 on reverse side</i>)	9
Global Knowledge GEP (<i>co-requisite</i>) ²	--		
Foreign Language Proficiency (<i>High School Proficiency or FL at 102 level or 200 level</i>)	--	Departmental Electives (ARE, ACC, BUS, EC) <u>or</u> Technical Electives (<i>see Footnote 8 on reverse side</i>)	12
<u>Health & Exercise GEP requirement (2 Credits)</u>			
HES at the 100-Level (wellness)	1	Minimum Hours Required for Graduation	120
HES at the 200-Level (activity)	1		
<u>Free Electives (12 credits)</u>			
Any course not excluded on the "exceptions" list (<i>see degree audit for course listing</i>).	12		

¹ ARE 201 and ENG 101 require a grade of C- or better to fulfill the requirement.

² Courses which meet this particular GEP Requirement are listed in the student's degree audit for the major

AGRICULTURAL BUSINESS MANAGEMENT (Example Course Sequence) ABM 2136

FRESHMAN YEAR			
Fall Semester	Credits	Spring Semester	Credits
ALS 103 Intro Topics in ALS	1	EC 202 Principles of Macroeconomics	3
ARE 201 Intro to Ag & Res Economics ¹ OR EC 201 Principles of Microeconomics ¹	3	COM 110 Public Speaking	3
Biology requirement ²	4	CSC 200 Intro to Computers & Uses OR AEE 226 Computer App & Info Tech	3
ENG 101 Academic Writing & Research	4	Mathematics requirement ³	3
Humanities GEP requirement ^C	3	Social Science GEP requirement ^D	3
	15	<i>Total:</i>	15
SOPHOMORE YEAR			
Fall Semester	Credits	Spring Semester	Credits
ACC 200 Intro to Managerial Accounting OR ACC 210 Concepts Financial Reporting	3	ARE 303 Farm Business Management OR ARE 304 Agribusiness Management	3
Mathematics requirement ³	3	ARE 306 Agricultural Law OR ARE 309 Environmental Law & Econ Policy	3
Science requirement ⁴	4	Science requirement ⁴	3
Humanities GEP requirement ^C	3	Inter-Disciplinary Perspectives GEP requirement ^G	2-3
Health & Exercise Studies GEP requirement ^E	1	Additional Breadth GEP requirement ^F	3
		Health & Exercise Studies GEP requirement ^E	1
	<i>Total:</i> 14		<i>Total:</i> 15-16
JUNIOR YEAR			
Fall Semester	Credits	Spring Semester	Credits
ARE(EC) 301 Intermediate Microeconomics	3	ARE 311 Agricultural Markets OR ARE 312 Agribusiness Marketing	3
BUS(ST) 350 Econ & Bus Statistics OR ST 311 Introduction to Statistics	3	ARE 336 Resource & Environmental Econ	3
Communication requirement ⁵	3	Free elective ¹⁰	3
ARE/EC elective ⁶	3	Technical elective ⁷	3
Free elective ¹⁰	3	Departmental ⁸ or Technical elective ⁷	3
ARE 490 Career Seminar in ARE	1		
	<i>Total:</i> 16		<i>Total:</i> 15
SENIOR YEAR			
Fall Semester	Credits	Spring Semester	Credits
ARE 321 Agricultural Financial Mgmt OR BUS 320 Financial Management	3	ARE elective ¹⁰	3
ARE 433 US Agricultural Policy	3	Technical elective ⁷	3
Technical elective ⁷	3	Departmental ⁸ or Technical elective ⁷	3
Departmental ⁸ or Technical elective ⁷	3	Departmental ⁸ or Technical elective ⁷	3
Free elective ¹⁰	3	Free elective ¹⁰	2-3
	<i>Total:</i> 15		<i>Total:</i> 14-15
Minimum Credit Hours Required for Graduation*: 120			

Major/Program Footnotes:

1. A grade of "C-" or higher is required.
2. Select a biology or plant biology course from BIO 105 and 106, or BIO 181, or PB 200.
3. Students must complete two math courses. Select one calculus course from MA 121, 131, or 141. Select a second math course from MA 114, 231, or 241.
4. Students must complete two courses from among a list of chemistry, physics and marine-earth-atmospheric sciences, for a minimum of 7 total credit hours. Select from CH 100, 101/102, 201/201, 220, 221/222, PY 131, 205, 208, 211, 212, MEA 100, 101/110, 130/135, 140, 150, 200.
5. Select a communication or writing course from COM 112, 211, 226, or ENG 332.
6. Select a ARE/EC elective course from ARE 332; ARE 345; EC 302; EC 348; EC 431
7. For a technical elective, select a course from among the following set of course listings with prefixes of : AEE, ANS, BAE, BEC, BIO, CH, CS, ENT, ES, ET, FOR, FS, FW, GN, HS, MB, MEA, NR, NTR, PB, PO, PY, SSC, TOX, VMP. (Before registering for these courses students should check to make sure they have met the necessary prerequisites and that credit restrictions do not apply--- e.g. credit is not allowed for both BIO 105 and BIO 181).
8. For a departmental elective, select a course from the following set of course listings with prefixes of: ARE, ACC, BUS, EC, MIE or MA 105. (Before registering for these courses students should check to make sure they have met the necessary prerequisites and that credit restrictions do not apply--- e.g. credit is not allowed for both ARE 201 and either EC 201 or EC 205).
9. Select a course with an ARE prefix (except ARE 201) not used to satisfy another requirement.
10. For free electives, select courses with enough credits to meet the minimum graduation requirement of 120 total credit hours.

**N. C. STATE UNIVERSITY
UNIVERSITY UNDERGRADUATE CERTIFICATE PROGRAM FORM**

COLLEGE/DEPARTMENT/PROGRAM NAME:

Animal Science

CERTIFICATE TITLE:

Undergraduate Certificate in Swine Science

TYPE OF PROPOSAL:

New: __

Revision: __

CIP DISCIPLINE#:

PROPOSED OR CURRENT PROGRAM CODE:

CERTIFICATE TYPE: On-campus Distance On-campus & Distance

PROPOSED EFFECTIVE DATE: 8/30/2016

APPROVED EFFECTIVE DATE:

ATTACHMENTS TO BE INCLUDED:

- 1. Statement of Justification for Program
- 2. Statement of Program Objectives
- 3. Proposed Revision(s) with Reasons
- 4. List of Program Requirements (use attached Format B)
- 5. Catalog Description of Proposed Certificate
- 6. Number of Certificate recipients in the past Five Years
- 7. Projected Enrollment
- 8. Admission Requirements
- 9. Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments
- 10. Signature Page (see attached)
- 11. Routing Form (see attached)

Undergraduate Certificate in Swine Science

Statement of Justification:

Several important factors have merged to make the offering of a distance education undergraduate certificate in swine science a reality at North Carolina State University. First is the importance of the swine industry to the economy of North Carolina and the industry's continual need for individuals with knowledge relative to the swine industry, and swine production and business practices. Second is the opportunity to expand the offering of programs here at NC State for post-secondary students with an interest in swine production. And third, technological advances have created a medium to educate beyond campus boundaries, with faculty from other universities participating in the instruction of courses in the program where NC State does not have expertise.

The swine industry in North Carolina is the second largest agricultural commodity in the state contributing significantly to the state's economy, and North Carolina is second in pork production among the states in the United States. The industry is characterized as modern and sophisticated, requiring educated employees in roles from management on farms, to mid-management positions at offices and industry centers, to an array of support specialist who understand the industry, including educators, sales representatives, economists, and meat specialists, to list a few. North Carolina is an agricultural state and animal production is a large part of North Carolina's agriculture. Pork production is a critical commodity and it will be part of the fabric of North Carolina agriculture for a long time to come.

The Departments of Animal Science, Prestage Department of Poultry Science, and the Department of Agricultural and Resource Economics offer distance education courses in support of their individual academic mission, providing students with an array of subjects in support of degree programs within the respective departments. In contrast, the departments do not offer a general program of study for students desiring an in-depth knowledge of the swine industry and general pork production practices. The distance education Undergraduate Certificate in Swine Science will provide the opportunity for students to undertake a comprehensive program by studying specific subjects of health and disease, management of the various dimensions of pork production, feedmilling, and business and economics aspects centered only on the swine commodity. A program of this nature is new and innovative for North Carolina State University.

The program is made possible through a collaboration of institutions, bringing faculty with unique expertise to teach within their subject area. The collaboration is the Agricultural Interactive Distance Education Alliance (AG*IDEA), of which NC State University is a member. The distance education Undergraduate Certificate in Swine Science is made possible through instruction of faculty here at NC State and faculty from collaborating institutions such as Iowa State University, the University of Missouri, and the University of Nebraska. The faculty teaching courses in this program are leaders in an area of expertise related to swine production and management, and their instruction of courses within their discipline and expertise creates a learning opportunity for students in North Carolina that they would not have otherwise. Instruction in the certificate is provided via distance education. Students in the NCSU Animal Science major can take ANS 403 (Swine Management) in place of ANS 260 (Basic Swine Science) to meet the requirements for the certificate.

An additional bonus of the program is that students who complete the courses in the certificate are eligible to apply for a Swine Science Online Certificate that is administered by the U.S. Pork Center of Excellence. Students with this certificate are recognized for their knowledge within the United States pork industry for having mastered a body of information and as being prepared to enter the pork production industry.

Undergraduate Certificate in Swine Science

Statement of Objectives:

The objectives of this certificate are to:

- Address the critical need for knowledgeable personnel in the pork industry, nationally and within North Carolina by academically training students to enter the pork industry or to enhance the skills of those already employed in the pork industry.
- Provide instruction in all phases of pork production, including areas that extend beyond the expertise of faculty at North Carolina State University.
- Prepare individuals to apply for and receive an official certificate of completion of educational training awarded by the United State Pork Center of Excellence. This documentation of credentials is viewed favorably by professionals in the pork industry making personnel and managerial decisions.

More specifically, upon completion of this certificate, students will:

- Have a comprehensive knowledge of pork production and describe where pork production fits within the animal agriculture industries in the United States and North Carolina.
- Describe production practices for all phases of production of swine, including the impacts of nutrition, physiology, and genetics on these practices.
- Understand diseases that affect swine and develop programs to eliminate or mitigate their impact.
- Identify key factors impacting the profitability of the pork industry, understand key records that need to be maintained in a production setting, and describe the markets available for swine and pork products.
- Understand the issues of pork production and effectively communicate with various constituencies regarding pork, pork production, and animal agriculture.

Undergraduate Certificate in Swine Science

Description of Certificate for Posting or Publication:

The Undergraduate Certificate in Swine Science program is the study of pork production and is available to post-secondary students interested in the pork industry. NCSU Animal Science majors can only complete the certificate by counting the courses to their Free Elective requirements as these courses will not count toward any Animal Science major requirements. The certificate is available via distance education. Students completing the certificate will have knowledge of all aspects of pork production, the pork industry, and factors that impact swine production and management. In addition, the U.S. Pork Center of Excellence located in Des Moines, Iowa will issue a certification of completion which is recognized in the pork industry as proficiency of swine practices.

Number of Certificate Recipients in the Past Five Years

1

Projected Enrollment

4 annually, resulting in a total enrollment of approximately 16

Admission Requirements

There are no admission requirements for the certificate, although there is a need for an interest in the production and management of swine.

Program Coordinator

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Statement on Other Departments Likely to be Affected and Summary of Consultations with those Departments

There are no other departments at NC State that teach undergraduate swine production and management courses.

North Carolina State University

This request to establish or discontinue a University Undergraduate Certificate Program or Change the Title for an Existing Certificate Program has been reviewed and approved by the appropriate campus committees and authorities.

Undergraduate Certificate in Swine Science
Title of Certificate

Endorsed By:

Mr Todd In Sept 12, 2016
Head, Department/Program Date

Recommended By:

[Signature] 9/15/16
Chair, College Curriculum Committee Date

Endorsed By:

[Signature] 9/15/2016
College Dean Date

Recommended By:

Vice Provost, DELTA (if DE degree/certificate) Date

Recommended By:

Chair, University Courses & Curricula Committee Date

Approved By:

Dean of Undergraduate Academic Programs Date

Recommended By:

Dean's Council Date

Approved By:

Provost Date

Approved By:

Chancellor Date



To: Mike Mullen, Vice Chancellor and Dean for Academic and Student Affairs
From: Jane Lubischer, Assistant Department Head for Undergraduate Programs, Department of Biological Sciences
Subject: Minor Action to update our course prefixes and two course titles
Date: 31 August 2016
Proposed effective date: 6 December 2016

Proposed changes and justification

The proposed changes are all driven by the creation of a new department with multiple course prefixes. Instead of determining course prefixes by the previous department in which each course was taught, we are now determining course prefixes by the content of the course and the degree program primarily served by that course. For example, any course that is a core requirement only in Zoology and any course that has as its focus the study of animals, will now use the ZO prefix. At the same time, we are moving toward using the BSC prefix for offerings that clearly span all of our curricula, which allows us to drop duplicate offerings (e.g., in Special Topics).

We are not proposing any changes to course numbers with this action and only two changes to course titles (to reflect our new departmental name). To our knowledge, none of these courses are requirements in curricula outside of our department.

CURRENT course prefix and number	PROPOSED NEW course prefix and (same) number	PROPOSED NEW COURSE TITLE
BIO 233	ZO 233	
BIO 250	ZO 250	
BIO 317	ZO 317	
BIO 333	ZO 333	
BIO 350	ZO 350	
BIO 402	ZO 402	
BIO 410	ZO 410	
BIO 486	ZO 486	
BIO 456	GN 456	
BIO 295	BSC 295	Special Topics in Biology Biological Sciences
BIO 495	BSC 495	Special Topics in Biology Biological Sciences
BIO 498	BSC 498	
BIO 499	BSC 499	

Courses to be dropped at this time due to duplication within our department	
GN 492 External Learning Experience	
GN 493 Special Problems in Genetics	
GN 495 Special Topics in Genetics	
MB 493 Special Problems in Microbiology	
MB 495 Special Topics in Microbiology	
TOX 495 Special Topics in Toxicology	
ZO 495 Special Topics in Zoology	
ZO 492 External Learning Experience	
ZO 493 Special Problems/Research Exploration	
TOX 499 Undergraduate Research in Toxicology	

SIGNATURES (AS REQUIRED):



Head, Department of Biological Sciences 9/7/16 Date



Chair, College Courses & Curric. Committee 9/28/16 Date



Dean, College of Sciences 9/28/2016 Date

Chair, Univ Courses & Curric. Committee Date

Dean, Academic and Student Affairs Date

EFFECTIVE DATE: _____