

**ATTACHMENT 1E-1
LETTER OF NOTIFICATION 3**

NEW OPTION, CONCENTRATION, EMPHASIS

(Maximum 18 semester credit hours of theory courses and 6 credit hours of practicum courses)

1. Institution submitting request: University of Arkansas, Fayetteville
2. Contact person/title: Dr. Sharon Gaber, Provost
3. Phone number/email address: 479-575-2151 / provost@uark.edu
4. Proposed effective date: Fall, 2014
5. Title of existing degree program: Animal Science BS
6. (Indicate if the degree listed above is approved for distance delivery) No
7. CIP Code: 01.0901
8. Degree Code: 3380
9. Proposed name of new option/concentration/emphasis:
 - 9.a) Major in Animal Science (ANSC) General Animal Science Concentration
 - 9.b) Major in Animal Science (ANSC) Pre-Professional/Science Concentration
 - 9.c) Major in Animal Science (ANSC) Equine Concentration
10. Reason for proposed action: The changes proposed have been brought forward and approved by the faculty of the Department of Animal Science. These changes will allow students flexibility in meeting educational and career goals and will present a clearer path for students to follow through the degree program based on personal and career goals. The availability of the three concentrations will also improve and simplify student advising.
11. Provide the following:
 - a) Curriculum outline - List of courses in new option/concentration/emphasis -- Underline required courses
 1. The General Animal Science Concentration is a science based degree program designed for students desiring a broader general background in animal science and offers students the greatest degree of flexibility in adapting their degree program to a wide variety of career paths. It offers a larger list of elective classes and opportunity the minors in other disciplines.

Requirements for a Major in Animal Science (ANSC) General Animal Science Concentration
State minimum core and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)

Communications (6-12 hours)

___ Choose from **English Core** courses (6 hours)

___ Communication Intensive Elective (6 hours from approved list.)

History or Government (3 hours)

- Choose from **U.S. History or Government Core** courses
- Mathematics (3 hours)
- Choose from **MATH Core** courses
- Sciences (16 hours)
 - BIOL 1543/1541L** Principles of Biology and lab
 - BIOL 2013/2011L** General Microbiology and lab
 - CHEM 1073/1071L** Fundamentals of Chemistry and lab or
 - CHEM 1123/1121L** University Chemistry II and lab
 - CHEM 2613/2611L** Organic Physiological Chemistry and lab or
 - CHEM 3603/3601L** Organic Chemistry I and lab
- Fine Arts and Humanities (6 hours)
- Choose from **Fine Arts, Humanities Core** courses
- Social Sciences (9 hours)
- Choose from **Social Sciences Core** courses

ANSC Requirements (24 hours)

- ANSC 1001L Introductory Animal Sciences Laboratory
- ANSC 1032 Introductory Animal Sciences
- ANSC 1041 Introduction to Companion Animal Industry or
- ANSC 1051 Introduction to the Livestock Industry
- ANSC 2252L Introduction to Livestock and Meat Evaluation
- ANSC 2781 Career Preparation and Development
- ANSC 3133 Animal Breeding and Genetics
- ANSC 3143 Principles of Animal Nutrition
- ANSC 3433 Fundamentals of Reproductive Physiology
- ANSC 4142 Advanced Animal Handling Techniques

Choose 6 hours from the following:

- ANSC 4252 Cow-Calf Management
- ANSC 4262 Swine Production
- ANSC 4272 Sheep Production
- ANSC 4283 Horse Production
- ANSC 4452 Milk Production
- ANSC 4482 Companion Animal Management
- ANSC 4652 Stocker-Feedlot Cattle Management

Animal Science Electives (Choose 13 hours):

- ANSC 3003 Applied Animal Parasitology
- ANSC 3013 Parasitisms of Domesticated Non-Herbivores
- ANSC 3032 Animal Physiology I
- ANSC 3042 Animal Physiology II
- ANSC 3123 Principles of Genetics
- ANSC 3152/3151L Applied Animal Nutrition and lab
- ANSC 3333 Diseases of Livestock
- ANSC 3072 Equine Selection and Evaluation
- ANSC 4072 Advanced Equine Selection and Evaluation
- ANSC 4173 The Thoroughbred Horse Industry
- ANSC 3491L Artificial Insemination in Cattle
- ANSC 3613 Meat Science
- ANSC 4303 Comparative Veterinary Anatomy

Discipline-related Electives (Choose 16 hours)

__ ANSC 2003 __ ANSC 2213 __ ANSC 2304
__ ANSC 3282 __ ANSC 3291 __ ANSC 3723
__ ANSC 3822 __ ANSC 400V __ ANSC 401V
__ ANSC 410V __ ANSC 4291 __ AGEC 1103 __ AFLS 400VH (1- 6 hrs)
__ AGEC 2103 __ AGEC 2303 __ AGME 2903
__ BIOL 1601L __ BIOL 1603 __ BIOL 2531L
__ BIOL 2533 __ CSES 1203 __ CSES 2013
__ CHEM 1101L __ CHEM 1103 __ CHEM 1121L
__ CHEM 1123 __ CHEM 2261L __ CHEM 2263
__ FDSC 2503 __ PHYS 2011L __ PHYS 2013
__ PHYS 2031L __ PHYS 2033 __ POSC 2353
__ POSC 3554 __ WCOB 1012 __ WCOB 1023 __ Math 1213 or higher

Or any upper division course in AEED, AGEC, AGME, AGST, BIOL, CHEM, CSES, FDSC, POSC, or WCOB.

General Electives (18-24 hours)

120 Total Hours

2. The Pre-Professional/Science Concentration is designed primarily for students who intend to compete for admission to professional schools, advanced post-graduate degree programs, or other career paths that require a strong background and understanding of basic and applied sciences.

Requirements for a Major in Animal Science (ANSC) Pre-Professional/Science Concentration

State minimum core and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in bold.)

Communications (12 hours)

__ Choose from **English Core** courses (6 hours)

__ **COMM 1313**

__ **Communication Intensive Elective (3 hours from approved list.)**

History or Government (3 hours)

__ Choose from **U.S. History or Government Core** courses

Mathematics (3 hours)

__ **MATH 1213**

Sciences (8 hours)

__ **BIOL 1543/1541L** Principles of Biology and lab

__ **CHEM 1123/1121L** University Chemistry II and lab

Fine Arts and Humanities (6 hours)

__ Choose from **Fine Arts, Humanities Core** courses

Social Sciences (9 hours)

__ Choose from **Social Sciences Core** courses

ANSC Requirements (22 hours)

__ **ANSC 1001L** Introductory Animal Sciences Laboratory

__ **ANSC 1032** Introductory Animal Sciences

__ **ANSC 1041** Introduction to Companion Animal Industry or

__ **ANSC 1051** Introduction to the Livestock Industry

__ **ANSC 2252L** Introduction to Livestock and Meat Evaluation

- ANSC 2781 Career Preparation and Development
- ANSC 3123 Principles of Genetics
- ANSC 3143 Principles of Animal Nutrition
- ANSC 3433 Fundamentals of Reproductive Physiology
- ANSC 4142 Advanced Animal Handling Techniques

Choose 4 hours from the following:

- ANSC 4252 Cow-Calf Management
- ANSC 4262 Swine Production
- ANSC 4272 Sheep Production
- ANSC 4283 Horse Production
- ANSC 4452 Milk Production
- ANSC 4482 Companion Animal Management
- ANSC 4652 Stocker-Feedlot Cattle Management

Animal Science Electives (Choose 6 hours):

- ANSC 3003 Applied Animal Parasitology
- ANSC 3013 Parasitisms of Domesticated Non-Herbivores

- ANSC 3133 Animal Breeding and Genetics
- ANSC 3152/3151L Applied Animal Nutrition and lab
- ANSC 3333 Diseases of Livestock
- ANSC 3072 Equine Selection and Evaluation
- ANSC 4072 Advanced Equine Selection and Evaluation
- ANSC 4173 The Thoroughbred Horse Industry
- ANSC 3491L Artificial Insemination in Cattle
- ANSC 3613 Meat Science
- ANSC 4303 Comparative Veterinary Anatomy

Pre-Professional/Science Concentration (35 hrs)

- ANSC 3032 Animal Physiology I
- ANSC 3042 Animal Physiology II
- BIOL 1603/1601L Zoology and Lab
- BIOL 2013/2011L General Microbiology and lab
- CHEM 1103/1011L Univ Chem I and Lab
- PHYS 2013/2011L College Physics I and Lab
- PHYS 2033/2031L College Physics II and Lab
- CHEM 3603/3601L Organic Chemistry I and Lab
- CHEM 3613/3611L Organic Chemistry II and Lab
- CHEM 3813 Biochemistry

Discipline-related Electives (Choose 10 hours)

Suggested Pre-Professional/Science Electives:

- BIOL 2533 Cell Biology
- MATH 2554 Calculus I
- STAT 2023 Biostatistics or STAT 2303 Principles of Statistics

Other discipline related electives:

- ANSC 2003 ANSC 2213 ANSC 2304
- ANSC 3282 ANSC 3291 ANSC 3723
- ANSC 3822 ANSC 400V ANSC 401V
- ANSC 410V ANSC 4291 AGECE 1103 AFLS 400VH (1 – 6 hrs)

AGEC 2103 AGEC 2303 AGME 2903 BIOL 2531L
 BIOL 2533 CSES 1203 CSES 2013
 CHEM 1101L CHEM 1121L
 CHEM 1123 CHEM 2261L CHEM 2263
 FDSC 2503 POSC 2353
 POSC 3554 WCOB 1012 WCOB 1023
Or any upper division course in AEED, AGEC, AGME, AGST, BIOL,
CHEM, CSES, FDSC, POSC, or WCOB.

General Electives (6 hours)

120 Total Hours

3. The Equine Concentration is designed for students who desire a sound science based background in Animal Science, but desire a more intense study of equine management and equine science aimed toward a career focus in the equine area.

Requirements for a Major in Animal Science (ANSC) Equine Concentration
State minimum core and discipline specific general education requirements:
(Course work that meets state minimum core requirements is in bold.)

Communications (6-12 hours)

Choose from **English Core** courses (6 hours)
 Communication Intensive Elective (6 hours from approved list.)

History or Government (3 hours)

Choose from **U.S. History or Government Core** courses

Mathematics (3 hours)

Choose from **MATH Core** courses

Sciences (16 hours)

BIOL 1543/1541L Principles of Biology and lab
 BIOL 2013/2011L General Microbiology and lab
 CHEM 1073/1071L Fundamentals of Chemistry and lab or
 CHEM 1123/1121L University Chemistry II and lab
 CHEM 2613/2611L Organic Physiological Chemistry and lab or
 CHEM 3603/3601L Organic Chemistry I and lab

Fine Arts and Humanities (6 hours)

Choose from **Fine Arts, Humanities Core** courses

Social Sciences (9 hours)

Choose from **Social Sciences Core** courses

ANSC Requirements (22 hours)

ANSC 1001L Introductory Animal Sciences Laboratory
 ANSC 1032 Introductory Animal Sciences
 ANSC 1041 Introduction to Companion Animal Industry or
 ANSC 1051 Introduction to the Livestock Industry
 ANSC 2252L Introduction to Livestock and Meat Evaluation
 ANSC 2781 Career Preparation and Development
 ANSC 3133 Animal Breeding and Genetics
 ANSC 3143 Principles of Animal Nutrition
 ANSC 3433 Fundamentals of Reproductive Physiology

__ ANSC 4142 Advanced Animal Handling Techniques

Choose 4 hours from the following:

- __ ANSC 4252 Cow-Calf Management
- __ ANSC 4262 Swine Production
- __ ANSC 4272 Sheep Production
- __ ANSC 4452 Milk Production
- __ ANSC 4482 Companion Animal Management
- __ ANSC 4652 Stocker-Feedlot Cattle Management

Animal Science Electives (Choose 13 hours):

- __ ANSC 3003 Applied Animal Parasitology
- __ ANSC 3013 Parasitisms of Domesticated Non-Herbivores
- __ ANSC 3032 Animal Physiology I
- __ ANSC 3042 Animal Physiology II
- __ ANSC 3123 Principles of Genetics
- __ ANSC 3152/3151L Applied Animal Nutrition and lab
- __ ANSC 3333 Diseases of Livestock
- __ ANSC 3491L Artificial Insemination in Cattle
- __ ANSC 4072 Advanced Equine Selection and Evaluation
- __ ANSC 3613 Meat Science
- __ ANSC 4303 Comparative Veterinary Anatomy

Equine Concentration: (14 hrs)

- __ ANSC 2003 Intro to the Equine Industry
- __ ANSC 3723 Horse & Livestock Merchandising
- __ ANSC 3072 Equine Selection and Evaluation
- __ ANSC 4173 The Thoroughbred Horse Industry
- __ ANSC 4283 Horse Production

Discipline-related Electives (Choose 13 hours)

- __ ANSC 2213 __ ANSC 2304
- __ ANSC 3282 __ ANSC 3291
- __ ANSC 3822 __ ANSC 400V __ ANSC 401V
- __ ANSC 410V __ ANSC 4291 __ AGEC 1103 __ AFLS 400VH (1 – 6 hrs
- __ AGEC 2103 __ AGEC 2303 __ AGME 2903
- __ BIOL 1601L __ BIOL 1603 __ BIOL 2531L
- __ BIOL 2533 __ CSES 1203 __ CSES 2013
- __ CHEM 1101L __ CHEM 1103 __ CHEM 1121L
- __ CHEM 1123 __ CHEM 2261L __ CHEM 2263 __ MATH 1213 or higher
- __ FDSC 2503 __ PHYS 2011L __ PHYS 2013
- __ PHYS 2031L __ PHYS 2033 __ POSC 2353
- __ POSC 3554 __ WCOB 1012 __ WCOB 1023

Or any upper division course in AEED, AGEC, AGME, AGST, BIOL, CHEM, CSES, FDSC, POSC, or WCOB.

General Electives (9-15 hours)

120 Total Hours

b) Total semester credit hours required for option/concentration/emphasis (Option range: 9 – 24

semester credit hours)

All three concentrations conform to the 120 hour Total degree requirement.

1. General Animal Science Concentration (22 hours)
2. Pre-Professional/Science Concentration (35 hours)
3. Equine Concentration (14 hours)

- c) New courses and new course descriptions (no new courses required)
d) Goals and objectives of program option(s)

To provide a sound science based degree program core in Animal Science with options to allow students with varying personal and career goals to undertake a focused degree program track that increases knowledge and expertise in a specific concentrated area appropriate to their educational and career goals.

- e) Expected student learning outcomes

1. General Animal Science Concentration

Students in this option will be well equipped in the core disciplines of Animal Science (nutrition, physiology, breeding and genetics), but will have maximum flexibility to tailor the courses and gain knowledge through the degree program to fit career path needs in all sectors of the more traditional animal management and animal food production areas of animal.

2. Pre-Professional/Science Concentration

Students in this option will be well equipped in the core disciplines of Animal Science (nutrition, physiology, breeding and genetics), but this option will allow students to gain additional knowledge in basic sciences and animal experiences that will greatly enhance their competitive position for admission to veterinary or other professional schools or admission to successful graduate degree programs. Knowledge gained through this concentration will also put students in a position to achieve a high degree of career success once they gain entry into these programs.

3. Equine Concentration

Students in this option will be well equipped in the core disciplines of Animal Science (nutrition, physiology, breeding and genetics), but will gain additional knowledge, training, and hands on experience in the area of equine science which will equip them for successful equine management, attainment of personal goals, and achievement of success in career paths focused in the equine area.

- f) Documentation that program option meets employer needs.

Graduates of the Department of Animal Science have had excellent career success and the success percentage of our students that apply to veterinary, other professional schools and graduate schools has been outstanding relative to other institutions in and out of Arkansas. The goal of the proposed options is to further enhance the career and professional success of our graduates through an enhanced offering that allows a more focused and intense degree program in targeted areas when still maintaining the core strength of the degree program.

- g) Student demand (projected enrollment) for program option.

The Animal Science degree program has had an increasing enrollment in the last 15 – 20 years and is currently one of the largest academic departments in Bumpers College. About 70% of the ANSC students entering the program pursue a degree tract (through elective classes) in pursuit of admission to veterinary or other professional degree programs. A very high percentage of these students also express a keen interest in increasing their knowledge of and hands on experience with the equine species. The remaining students are interested in more traditional career paths in animal management and production systems. The three proposed concentrations will allow students to obtain a degree which is appropriate to their career, professional and personal goals.

- h) Name of institutions offering similar program or program option and the institution(s) used as a model to develop the proposed program option

North Carolina State University; University of Tennessee, Knoxville; Mississippi State University; University of Illinois, Urbana-Champaign, Purdue University

12. Institutional curriculum committee review/approval date:

13. Will the new option be offered via distance delivery? *No* Indicate mode of distance delivery: *Classroom instruction and student internships*

14. Explain in detail the distance delivery methods/procedures to be used: *NA*

15. Specify the amount of additional costs required for program implementation , the source of funds, and how funds will be used.

There will be no additional cost above those currently incurred in teaching these courses for the general student or ANSC student populations.

16. Provide additional program information if requested by ADHE staff.

President/Chancellor Approval Date:

Board of Trustees Notification Date:

Chief Academic Officer

Date: