

# Department of Animal and Dairy Sciences

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## Major Advisor: Instructor Jessica Graves

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Animal and Dairy Sciences is a multidisciplinary science that focuses on livestock and companion animal growth, health and safety, as well as food and fiber production. Professionals in the diverse fields of animal and dairy sciences strive to provide healthy and wholesome food as well as quality fiber products to support the growing population. Students in Animal and Dairy Sciences will learn about the newest technologies and experience progressive management strategies that will prepare them to be leaders in agriculture.

Joining Animal and Dairy Sciences will give students hands-on education and experience needed to be successful in areas such as breeding, feeding and nutrition, growth and development, reproductive and lactation physiology, biotechnology, marketing, management, and evaluation as it relates to livestock species. The curriculum is designed to provide students with academic and experiential learning while also allowing them flexibility to tailor their program by taking courses that best prepare and support their professional goals. Students of the Animal and Dairy Sciences will be challenged to think critically and exercise knowledge of discipline content through scientific writing and presentation. Students pursuing veterinary medicine or graduate studies will find the academic setting of the Animal and Dairy Sciences is an ideal fit.

### Concentrations:

Science/Veterinary Science

Business and Industry

Production Management

## BS in Animal and Dairy Sciences (ADS)

### Degree Requirements

#### English Composition

EN 1103	English Composition I	3
or EN 1163	Accelerated Composition I	
EN 1113	English Composition II	3
or EN 1173	Accelerated Composition II	

#### Mathematics

MA 1323	Trigonometry	3
MA 2113	Introduction to Statistics	3

#### Science

See Concentration Requirements

#### Humanities

Choose from General Education courses 6

#### Fine Arts

Choose from General Education courses 3

#### Social Sciences

AEC 2713	Introduction to Food and Resource Economics	3
or EC 2113	Principles of Macroeconomics	
Choose from General Education courses		3

#### Major Core

ADS 1111	Orientation in Animal Science	1
ADS 1113	Animal Science	3
ADS 1121	Animal Science Laboratory	1
ADS 2111	Animal Science Career Planning	1
ADS 3314	Introduction to Meat Science	4
ADS 4114	Animal Nutrition	4
ADS 4123	Animal Breeding	3
ADS 4213	Feeds and Feeding	3
ADS 4613	Physiology of Reproduction	3
ADS 4611	Practices in Physiology of Reproduction	1
ADS 4221	Capstone in Animal and Dairy Science	1

ADS 4420 or ADS 4440 or ADS 4520	Animal and Dairy Science Internship Research Experience Practicum Livestock Extension Experience	1-3
PO /GNS /BIO 3103	Genetics I	3
VS 3014	Anatomy and Physiology	4
Plant and Soil Science Elective	Consult advisor	3

## Choose one of the following concentrations:

### Science/Veterinary Science Concentration

<b>Chemistry Sequence</b>		8
CH 1213 & CH 1211	Chemistry I and Investigations in Chemistry I *	
CH 1223 & CH 1221	Chemistry II and Investigations in Chemistry II *	
<b>Organic Chemistry &amp; Lab</b>		4
CH 2503 & CH 2501 or CH 4513 & CH 4511	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory Organic Chemistry I and Organic Chemistry Laboratory I	
BIO 1134	Biology I *	4
BIO 1144	Biology II	4
BIO 3304	General Microbiology	4
BCH 4013 or BCH 4603	Principles of Biochemistry General Biochemistry	3
CO 1003 or CO 1013	Fundamentals of Public Speaking Introduction to Communication	3
Evaluation Elective <sup>1</sup>		2-3
Production Electives <sup>1</sup>		6-8
Science Electives <sup>1</sup>		12
Free Electives		6-9
<b>Total Hours</b>		124

\* Satisfies General Education Requirements.

<sup>1</sup> See advisor for approved electives.

### Business and Industry Concentration

#### Chemistry Sequence

Choose one of the following:

CH 1043 & CH 1053 & CH 1051	Survey of Chemistry I and Survey of Chemistry II and Experimental Chemistry *	7
CH 1213 & CH 1211 & CH 1223 & CH 1211	Chemistry I and Investigations in Chemistry I and Chemistry II and Investigations in Chemistry I *	8
<b>Organic Chemistry</b>		
CH 2503 & CH 2501 or CH 4513 & CH 4511	Elementary Organic Chemistry and Elementary Organic Chemistry Laboratory Organic Chemistry I and Organic Chemistry Laboratory I	4
BIO 1134	Biology I *	4

or BIO 1144	Biology II	
Evaluation Electives <sup>1</sup>		4-5
Production Electives <sup>1</sup>		6-8
Business Electives <sup>1</sup>		12
General Agriculture Electives <sup>1</sup>		12
Free Electives		6-10
<b>Total Hours</b>		<b>124</b>

\* Satisfies General Education Requirements.

<sup>1</sup> See advisor for list of approved electives.

## Production Management Concentration

Chemistry Sequence 7-8

Choose one of the following:

CH 1043 Survey of Chemistry I  
& CH 1053 and Survey of Chemistry II  
& CH 1051 and Experimental Chemistry \*

CH 1213 Chemistry I  
& CH 1211 and Investigations in Chemistry I  
& CH 1223 and Chemistry II  
& CH 1221 and Investigations in Chemistry II \*

### Organic Chemistry

CH 2503 Elementary Organic Chemistry 4  
& CH 2501 and Elementary Organic Chemistry Laboratory

or CH 4513 Organic Chemistry I  
& CH 4511 and Organic Chemistry Laboratory I

BIO 1134 Biology I \* 4

or BIO 1144 Biology II

Evaluation Electives <sup>1</sup> 4-5

Production Electives <sup>1</sup> 12-16

Business Electives <sup>1</sup> 6

General Agriculture Electives <sup>1</sup> 12

Free Electives 4-10

**Total Hours** 124

\* Satisfies General Education Requirements.

<sup>1</sup> See advisor for list of approved electives.

## Course requirements for Pre-Veterinary students (3 + 1 program) to obtain a B.S. degree in Animal and Dairy Sciences

Because

1. the entrance requirements for the College of Veterinary Medicine satisfy a portion of the course requirements for the Animal and Dairy Sciences curriculum
2. a number of students are enrolled in Animal and Dairy Sciences while satisfying their pre-veterinary requirements and
3. an Animal and Dairy Sciences degree will be especially helpful to a practicing veterinarian,

the following requirements for those electing to apply for a Bachelor of Science degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed.

General Education Requirements	27
Dept Core	38
Science/Veterinary Medicine Concentration (excl. Free Electives)	50-53

To qualify for the Bachelor of Science degree in ADS, a student in the 3+1 program must successfully complete the 3 years of above listed undergraduate course work (115-118 hours) and the first year of the Veterinary Medicine curriculum.

## ADS Minor Requirements

The addition of the minor program will serve to complement other Bachelor of Science studies at Mississippi State University including by not limited to programs such as:

- Biological Sciences
- Food Science, Nutrition and Health Promotion
- Human Sciences
- Agricultural Economics
- Biochemistry
- Microbiology
- Poultry Science
- Agricultural Information Sciences
- Plant and Soil Sciences
- Wildlife and Fisheries

A minor in Animal and Dairy Sciences would provide an opportunity for students to enhance their undergraduate training and build a platform that will set themselves above their peers upon graduation as they seek permanent employment in their respective industry.

## Requirements

ADS 1113 & ADS 1121	Animal Science and Animal Science Laboratory	4
<b>Production Courses</b>		<b>6-7</b>
ADS 2223	Companion Animal	
ADS 3223	Horse Management	
ADS 3314	Introduction to Meat Science	
ADS 4113	Swine Science	
ADS 4223	Goat and Sheep Production	
ADS 4323	Beef Cattle Science	
ADS 4813	Dairy Farm Management	
<b>Evaluation Course</b>		<b>2-3</b>
ADS 2102	Equine Conformation and Performance Evaluation	
ADS 2122	Advanced Equine Evaluation	
ADS 3142	Meats Judging I	
ADS 3213	Livestock Growth, Development and Evaluation	
ADS 3812	Dairy Cattle Appraisal	
ADS 4212	Livestock Evaluation	
ADS 4232	Advanced Livestock Evaluation	
ADS 4123 or ADS 4114	Animal Breeding Animal Nutrition	3
ADS 4613 or ADS 4623	Physiology of Reproduction Physiology of Lactation	3
<b>Minimum Hours Required</b>		<b>18</b>