APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the *Guide and Format for Curriculum Proposals* published by the UCCC. Both cover sheet and proposal should be submitted to UCCC Mail Stop 9702 (281 Garner Hall), Phone: 325-9410.

College: College of Ag and Life Sciences **Department:** Animal and Dairy Sciences

Contact Person: Erica Carroll **Mail Stop:** 9815 **E-mail:** edc226@msstate.edu

Nature of Change: Modification **Date Initiated:** 11/08/2024

Current Degree (BS, MS, etc.): BS

Current Major: Animal and Dairy Sciences

Current Concentration(s): Pre-vet/Sciences, Production M

Current Campus(es): ☑ Starkville ☐ Meridian ☑ Distance ☐ Gulf Coast*

*Gulf Coast campus for Bagley College of Engineering only

New Degree (BS, MS, etc.): _____

Effective Date:

Semester	Year
Fall	2026

**Any new program or modification desiring a starting semester other than fall must include a justification

Proposed Major: _____

Proposed Concentration(s): Food Science

Proposed Campus(es)

☑ Starkville
☐ Meridian
☑ Distance
☐ Gulf Coast*

*Gulf Coast campus for Bagley College of Engineering only

Summary of Proposed Changes:

Addition of ADS 3214 Growth and Development to the ADS Major Core. Please see attached sheets for each concentration to see adjustments. Total hours for graduation does not change. Required hours for ADS core are now 40 hours instead of 60.
Addition of a Food Science Concentration.

Approved: **Date:**

Christel J Brotherton — 4/23/2025

Department Head

Director of Academic Quality

Krishnan — Digitally signed by Natraj Krishnan Date: 2025.04.24 09:09:30 -05'00' — 4/24/2025

Chair, College or School Curriculum Committee

Darrell Sparks — Digitally signed by Darrell Sparks Date: 2025.04.24 09:17:04 -05'00' — 4/24/25

Dean of College or School

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

FOR OIRE USE ONLY

- ☐ Substantive Change to SACSCOC
- ☐ Notification to SACSCOC
- ☐ No significant departure

OIRE Representative Initials _____

DEGREE MODIFICATION OUTLINE FORM

Use the chart below to make modifications to an existing undergraduate degree outline. If any General Education (Core) course is acceptable in the category, please indicate by saying "any Gen Ed course". There is no need to type in the whole list. All deleted courses and information should be shown in *italics* and all new courses and information in **bold**. Include the course prefix, number, and title in both columns. Expand this table as needed.

CURRENT Degree Description	PROPOSED Degree Description
Degree: Bachelor of Science Major: Animal and Dairy Science	Degree: Bachelor of Science Major: Animal and Dairy Science
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.	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.

CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
English:		English:	
EN 1103 English Comp. I OR EN 1104 Expanded English Comp I	3	EN 1103 English Comp. I OR EN 1104 Expanded English Comp I	3
EN 1113 English Comp. II OR EN 1173 Accelerated Comp. II	3	EN 1113 English Comp. II OR EN 1173 Accelerated Comp. II	3
Fine Arts (General Education):		Fine Arts (General Education):	
Any Gen Ed course	3	Any Gen Ed course	3
Natural Sciences (2 labs required from Gen Ed):		Natural Sciences (2 labs required from Gen Ed):	
BIO 1134 Biology I	4	BIO 1134 Biology I	4

AND See Concentration specifics		AND See Concentration specifics	
Extra Sciences:			
Math (General Education): MA1323 Trigonometry OR 1713 Calculus ST 2113 Statistics	 3 3	Math (General Education): MA1323 Trigonometry OR 1713 Calculus ST 2113 Statistics	 3 3
Humanities (General Education): Any Gen Ed course	 6	Humanities (General Education): Any Gen Ed course **Except Food Science Concentration**	 6
Social/Behavioral Sciences (Gen Ed): Pick one Gen Ed course Economics (pick one) AEC 2713 Intro to Food & Resource Econ EC 2113 Prin of Macroeconomics EC 2123 Prin of Microeconomics	 3 3	Social/Behavioral Sciences (Gen Ed): Pick one Gen Ed course Economics (pick one) AEC 2713 Intro to Food & Resource Econ EC 2113 Prin of Macroeconomics EC 2123 Prin of Microeconomics	 3 3
Total General Education Hours	31	Total General Education Hours	31
Major Core Courses ADS 1111 Orientation to ADS ADS 1113 Animal Science ADS 1121 Animal Science Lab ADS 2111 ADS Career Planning ADS 3013 Anatomy and Physiology ADS 3031 Anatomy & Physiology Lab PO 3103 Genetics I ADS 3313 Intro to Meat Science ADS 3311 Meat Processing Laboratory ADS 4114 Animal Nutrition ADS 4124 Animal Breeding ADS 4213 Feeds and Feeding ADS 4613 Physiology of Repro ADS 4611 Prac in Phy & Repro ADS 4221 Capstone in Animal Sci Experiential Learning (3 credits required): ADS 4420 ADS Internship OR ADS 4440 Research Exp. Practicum OR ADS 4520 Extension Exp. Practicum	 1 3 1 1 3 1 3 3 1 4 4 3 3 1 1 3	Major Core Courses ADS 1111 Orientation to ADS ADS 1113 Animal Science ADS 1121 Animal Science Lab ADS 2111 ADS Career Planning ADS 3013 Anatomy and Physiology ADS 3031 Anatomy & Physiology Lab PO 3103 Genetics I **ADS 3214 Growth and Development** ADS 3313 Intro to Meat Science ADS 3311 Meat Processing Laboratory ADS 4114 Animal Nutrition ADS 4124 Animal Breeding ADS 4213 Feeds and Feeding ADS 4613 Physiology of Repro ADS 4611 Prac in Phy & Repro ADS 4221 Capstone in Animal Sci Experiential Learning (3 credits required): ADS 4420 ADS Internship OR ADS 4440 Research Exp. Practicum OR ADS 4520 Extension Exp. Practicum	 1 3 1 1 3 1 3 4 3 1 4 4 3 3 1 1 3
Total Major Hours	*36*	Total Hours	**40**
Concentration Courses See Concentration specifics		Concentration Courses See Concentration specifics	
CONCENTRATION DESCRIPTION:		CONCENTRATION DESCRIPTION:	

Pre-Vet/Science		Pre-Vet/Science **Provides strong science background and equips students for professional or graduate school.**	
Concentration Courses:		Concentration Courses:	
CH 1213 Chemistry I	3	CH 1213 Chemistry I	3
CH 1211 Invest in Chemistry I	1	CH 1211 Invest in Chemistry I	1
CH 1223 Chemistry II	3	CH 1223 Chemistry II	3
CH 1221 Invest in Chemistry II	1	CH 1221 Invest in Chemistry II	1
CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4	CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4
BIO 1134 Biology II	4	BIO 1134 Biology II	4
BIO 3304 General Microbiology	4	BIO 3304 General Microbiology	4
BCH 4013 Principles of Biochemistry OR BCH 4603 General Biochemistry	3	BCH 4013 Principles of Biochemistry OR BCH 4603 General Biochemistry	3
CO 1003 Fundamentals of Public Speaking OR CO 1013 Intro to Communication	3	CO 1003 Fundamentals of Public Speaking OR CO 1013 Intro to Communication	3
Evaluation Electives (pick one) ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	2	Evaluation Electives (pick one) ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	2
Production Electives (pick two) ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab *ADS 3214 Growth and Development* PO 4334 Broiler Production	8	Production Electives (pick two) ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab PO 4334 Broiler Production	8
Science Electives (12 credit hours) ABE 3413 Bioinstrumentation I ABE 4263 Soil & Water Mgt ABE 4423 Bioinstrum II ADS 4112 Equine Reproduction ADS 4333 Equine Exercise Phy ADS 4543 Applied Animal Biotechnology ADS 4553 Current Literature in ADS ADS 4623 Physiol Of Lactation ADS 4633 Livestock Immun. and Disease BCH 4113 Essentials Mol Genetics BCH 4414 Protein Methods BCH 4603 Gen Biochem I	12	Science Electives (12 credit hours) ABE 3413 Bioinstrumentation I ABE 4263 Soil & Water Mgt ABE 4423 Bioinstrum II ADS 4112 Equine Reproduction ADS 4333 Equine Exercise Phy ADS 4543 Applied Animal Biotechnology ADS 4553 Current Literature in ADS ADS 4623 Physiol Of Lactation ADS 4633 Livestock Immun. and Disease BCH 4113 Essentials Mol Genetics BCH 4414 Protein Methods BCH 4603 Gen Biochem I BCH 4613 Gen Biochem II	12

BCH 4613 Gen Biochem II BCH 4713 Molecular Biology BIO 2103 Cell Biology BIO 3104 Ecology BIO 3113 Marine Biology BIO 3213 Bio Reps Amphibians BIO 3223 Biology of Fishes BIO 3233 Biology of Birds BIO 3303 Parasitology BIO 3504 Comparative Anatomy BIO 3524 Biol Of Vertebrates BIO 4113 Evolution BIO 4114 Cellular Physiology BIO 4233 Living w Global Change BIO 4324 Micro & Ecology in Soil BIO 4404 Environmental Micro BIO 4405 Pathogenic Micro BIO 4413 Immunology *BIO 4414 Micro Of Foods* BIO 4433 Prin Of Virology BIO 4443 Bacterial Genetics BIO 4503 Vertebrate Histology BIO 4514 Animal Physiology CH 4521 Org Chem Lab II CH 4523 Organic Chemistry II CVM 4513 Environ Toxicology CVM 4523 Basic Neuroscience EPP 4113 Principles of Plant Path EPP 4154 General Entomology FNH 2112 Food Products Evaluation FNH 4114 Analysis of Food Product FNH 4143 Dairy Foods Proc FNH 4164 Qual Assur Food Prod FNH 4173 Food Packaging FNH 4241 Applied Food Chemistry FNH 4243 Food Comp & Reaction FNH 4313 Adv Science of Muscle Foods FNH 4333 Food Law FNH 4514 Poultry Processing FNH 4553 Curr Issues Food Sci FNH 4583 Food Preservation Tech FNH 4593 New Food Product Devel PH 1113 Gen Physics I PH 1123 Gen Physics II PH 1133 Gen Physics III PH 2213 Physics I PH 2223 Physics II PO 4033 Diseases of Poultry PO 4324 Avian Reproduction PO 4844 Avian Anatomy & Physiology PSS 4503 Plant Breeding Free electives: Any course in addition to required courses	*9*	BCH 4713 Molecular Biology BIO 2103 Cell Biology BIO 3104 Ecology BIO 3113 Marine Biology BIO 3213 Bio Reps Amphibians BIO 3223 Biology of Fishes BIO 3233 Biology of Birds BIO 3303 Parasitology BIO 3504 Comparative Anatomy BIO 3524 Biol Of Vertebrates BIO 4113 Evolution BIO 4114 Cellular Physiology BIO 4233 Living w Global Change BIO 4324 Micro & Ecology in Soil BIO 4404 Environmental Micro BIO 4405 Pathogenic Micro BIO 4413 Immunology BIO 4414 Micro Of Foods BIO 4433 Prin Of Virology BIO 4443 Bacterial Genetics BIO 4503 Vertebrate Histology BIO 4514 Animal Physiology CH 4521 Org Chem Lab II CH 4523 Organic Chemistry II CVM 4513 Environ Toxicology CVM 4523 Basic Neuroscience EPP 4113 Principles of Plant Path EPP 4154 General Entomology FNH 2112 Food Products Evaluation FNH 4114 Analysis of Food Product FNH 4143 Dairy Foods Proc FNH 4164 Qual Assur Food Prod FNH 4173 Food Packaging FNH 4241 Applied Food Chemistry FNH 4243 Food Comp & Reaction FNH 4313 Adv Science of Muscle Foods FNH 4333 Food Law **FNH 4414 Micro Of Foods** FNH 4514 Poultry Processing FNH 4553 Curr Issues Food Sci FNH 4583 Food Preservation Tech FNH 4593 New Food Product Devel PH 1113 Gen Physics I PH 1123 Gen Physics II PH 1133 Gen Physics III PH 2213 Physics I PH 2223 Physics II PO 4033 Diseases of Poultry PO 4324 Avian Reproduction PO 4844 Avian Anatomy & Physiology PSS 4503 Plant Breeding Free electives: Any course in addition to required courses	**5**
Concentration Hours	57	Concentration Hours	**53**

Total Pre-Vet/Science Concentration Hours	124	Total Pre-Vet/Science Concentration Hours	124
CONCENTRATION DESCRIPTION: Business and Industry		CONCENTRATION DESCRIPTION: Business and Industry **Designed for students who wish to pursue an agricultural business career.**	
Concentration Courses:		Concentration Courses:	
Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry	7 OR 8	Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry	7 OR 8
OR		OR	
CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II		CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II	
CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4	CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4
CO 1003 Fundamentals of Public Speaking OR CO 1013 Intro to Communication	3	CO 1003 Fundamentals of Public Speaking OR CO 1013 Intro to Communication	3
Evaluation Electives (pick two): ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	4	Evaluation Electives (pick two): ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	4
Production Electives (pick two): ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab *ADS 3214 Growth and Development* PO 4334 Broiler Production	8	Production Electives (pick two): ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab PO 4334 Broiler Production	8
Business Electives (pick four): ACC 2013 Prin of Financial Acct. AEC 2713 Intro to Food and Resource Econ. AEC 3113 Intro to Quant Econ AEC 3133 Introductory Agribus Mgt. AEC 3213 International Trade in Ag AEC 3233 Intro to Env Econ & Policy	12	Business Electives (pick four): ACC 2013 Prin of Financial Acct. AEC 2713 Intro to Food and Resource Econ. AEC 3113 Intro to Quant Econ AEC 3133 Introductory Agribus Mgt. AEC 3213 International Trade in Ag AEC 3233 Intro to Env Econ & Policy AEC 3413 Intro to Food Marketing	12

AEC 3413 Intro to Food Marketing AEC 3513 Food and Fiber Production AEC 4113 Agribusiness Firm Mgt AEC 4123 Fin & Comm Futures Mktg AEC 4133 Food Markets & Prices AEC 4233 Environmental Economics AEC 4343 Adv Farm Management AEC 4413 Public Problems of Ag EC 2113 Prin of Macroecon EC 2123 Prin of Microecon EC 4323 International Economics MGT 3113 Principals of Management MGT 3213 Org Communications MGT 3513 Intro Human Res Mgt. MGT 4113 Advanced Management MGT 4213 Org Communications II MGT 4413 Intro Operations Res. *General Agriculture Electives (12 Credits)* Any course taught in CALS Free electives: Any course in addition to required courses	 *12* 6 OR 7	AEC 3513 Food and Fiber Production AEC 4113 Agribusiness Firm Mgt AEC 4123 Fin & Comm Futures Mktg AEC 4133 Food Markets & Prices AEC 4233 Environmental Economics AEC 4343 Adv Farm Management AEC 4413 Public Problems of Ag EC 2113 Prin of Macroecon EC 2123 Prin of Microecon EC 4323 International Economics MGT 3113 Principals of Management MGT 3213 Org Communications MGT 3513 Intro Human Res Mgt. MGT 4113 Advanced Management MGT 4213 Org Communications II MGT 4413 Intro Operations Res. **General Agriculture Electives (8 Credits)** Any course taught in CALS Free electives: Any course in addition to required courses	 **8** 6 OR 7
Concentration Hours	*57*	Concentration Hours	**53**
Total Business and Industry Concentration Hours	124	Total Business and Industry Concentration Hours	124
CONCENTRATION DESCRIPTION: Production Management		CONCENTRATION DESCRIPTION: Production Management **Promotes practical application of skills relevant to animal production.**	
Concentration Courses: Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry OR CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab PSS 4103 Forage Pasture Evaluation Electives (pick two): ADS 2102 Equine Conf/Perf Ev	 7 OR 8 4 3 4	Concentration Courses: Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry OR CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab PSS 4103 Forage Pasture Evaluation Electives (pick two): ADS 2102 Equine Conf/Perf Ev	 7 OR 8 4 3 4

ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation		ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	
Production Electives (pick four): ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab *ADS 3214 Growth and Development* PO 4334 Broiler Production	16	Production Electives (pick four): ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab PO 4334 Broiler Production	16
Business Electives (pick two): ACC 2013 Prin of Financial Acct. AEC 2713 Intro to Food and Resource Econ. AEC 3113 Intro to Quant Econ AEC 3133 Introductory Agribus Mgt. AEC 3213 International Trade in Ag AEC 3233 Intro to Env Econ & Policy AEC 3413 Intro to Food Marketing AEC 3513 Food and Fiber Production AEC 4113 Agribusiness Firm Mgt AEC 4123 Fin & Comm Futures Mktg AEC 4133 Food Markets & Prices AEC 4233 Environmental Economics AEC 4343 Adv Farm Management AEC 4413 Public Problems of Ag EC 2113 Prin of Macroecon EC 2123 Prin of Microecon EC 4323 International Economics MGT 3113 Principals of Management MGT 3213 Org Communications MGT 3513 Intro Human Res Mgt. MGT 4113 Advanced Management MGT 4213 Org Communications II MGT 4413 Intro Operations Res.	6	Business Electives (pick two): ACC 2013 Prin of Financial Acct. AEC 2713 Intro to Food and Resource Econ. AEC 3113 Intro to Quant Econ AEC 3133 Introductory Agribus Mgt. AEC 3213 International Trade in Ag AEC 3233 Intro to Env Econ & Policy AEC 3413 Intro to Food Marketing AEC 3513 Food and Fiber Production AEC 4113 Agribusiness Firm Mgt AEC 4123 Fin & Comm Futures Mktg AEC 4133 Food Markets & Prices AEC 4233 Environmental Economics AEC 4343 Adv Farm Management AEC 4413 Public Problems of Ag EC 2113 Prin of Macroecon EC 2123 Prin of Microecon EC 4323 International Economics MGT 3113 Principals of Management MGT 3213 Org Communications MGT 3513 Intro Human Res Mgt. MGT 4113 Advanced Management MGT 4213 Org Communications II MGT 4413 Intro Operations Res.	6
General Agriculture Electives (12 Credits) Any course taught in CALS	*12*	**General Agriculture Electives (12 Credits)** Any course taught in CALS	**8**
Free electives: Any course in addition to required courses	4 OR 5	Free electives: Any course in addition to required courses	4 OR 5
Concentration Hours	*57*	Concentration Hours	**53**
Total Production Management Concentration Hours	124	Total Production Management Concentration Hours	124
CONCENTRATION DESCRIPTION: Pre-Veterinary Med Tech		CONCENTRATION DESCRIPTION: Pre-Veterinary Med Tech	

		Provides a basis with appropriate pre-requisites for students who wish to apply for entry into the College of Veterinary Medicine's Veterinary Medical Technology degree.	
Concentration Courses:		Concentration Courses:	
Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry	7 OR 8	Chemistry Group I: CH 1043 Survey of Chemistry I CH 1053 Survey of Chemistry II CH 1051 Experimental Chemistry	7 OR 8
OR		OR	
CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II		CH Group II: CH 1213 Chemistry I CH 1211 Invest in Chemistry I CH 1223 Chemistry II CH 1221 Invest in Chemistry II	
CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4	CH 2503/2501 Elem Organic CH and Lab OR CH 4513/4511 Organic CH I and Lab	4
BIO 1134 Biology II	4	BIO 1134 Biology II	4
BIO 3304 General Microbiology	4	BIO 3304 General Microbiology	4
CO 1003 Fundamentals of Public Speaking	3	CO 1003 Fundamentals of Public Speaking	3
VS 1012 Intro to Vet Med Career	2	VS 1012 Intro to Vet Med Career	2
VS 3101 Vet Tech Med Career	1	VS 3101 Vet Tech Med Career	1
Evaluation Electives (pick one) ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	2	Evaluation Electives (pick one) ADS 2102 Equine Conf/Perf Ev ADS 2122 Adv Equine Eval ADS 2202 Companion Animal Evaluation ADS 3142 Meats Judging I ADS 3812 Dairy Cattle Appraisal ADS 3212 Livestock Eval ADS 4232 Adv Livestock Eval FNH 2112 Food Products Evaluation	2
Production Electives (pick two) ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab *ADS 3214 Growth and Development* PO 4334 Broiler Production	8	Production Electives (pick two) ADS4513/4511 Companion Ani. Mgt and Lab ADS 4233/4231 Horse Mngmt and Lab ADS 4113/4111 Swine Science and Lab ADS 4223/4211 Goat and Sheep Prod and lab ADS 4323/4321 Beef Cattle Sci and Lab ADS 4813/4811 Dairy Farm Mngmt and Lab *ADS 3214 Growth and Development* PO 4334 Broiler Production	8
Ag/Science Electives Any course taught in CALS or 3000-4000 level 'hard sciences'	*12*	**Ag/Science Electives** Any course taught in CALS or 3000-4000 level 'hard sciences'	**8**
Free electives: Any course in addition to required courses	9 OR 10	Free electives: Any course in addition to required courses	9 OR 10

Concentration Hours	*57*	Concentration Hours	**53**
Total Production Management Concentration Hours	124	Total Production Management Concentration Hours	124
CONCENTRATION DESCRIPTION: Food Science		CONCENTRATION DESCRIPTION: Food Science **Provides students with the basis for food processing, preservation, food safety, and the environmental impact of food production.**	
		Concentration Courses: **Chemistry Group I:** **CH 1043 Survey of Chemistry I** **CH 1053 Survey of Chemistry II** **CH 1051 Experimental Chemistry** **OR** **CH Group II:** **CH 1213 Chemistry I** **CH 1211 Invest in Chemistry I** **CH 1223 Chemistry II** **CH 1221 Invest in Chemistry II** **Additional General Education:** **FLS 1113 Spanish I** **FLS 1123 Spanish II** ***Only different for this concentration, other concentrations are any Gen Ed** **BIO 1144 Biology II** **BIO 3304 General Microbiology** **BCH 4013 Principles of Biochemistry** **OR BCH 4603 General Biochemistry** **Evaluation Elective:** **ADS 3142 Meats Judging 1** **FNH 4164 Quality Assurance Food Prod** **Production Electives (Pick two):** **ADS4513/4511 Companion Ani. Mgt and Lab** **ADS 4233/4231 Horse Mngmt and Lab** **ADS 4113/4111 Swine Science and Lab** **ADS 4223/4211 Goat and Sheep Prod and Lab** **ADS 4323/4321 Beef Cattle Sci and Lab** **ADS 4813/4811 Dairy Farm Mngmt and Lab** **PO 4334 Broiler Production** **Food Science Electives:** **ADS 4243 Food Comp & Reaction** **ADS 4314 Adv. Science of Muscle Foods** **FNH 4114 Analysis of Food Product** **FNH 4164 Quality Assurance of Food Products**	**7 OR 8** **3*** **3*** **4** **4** **3** **2** **2** **8** **22 OR 23**

		FNH 4241 Applied Food Chemistry **FNH 4333 Food Law** **FNH 4414 Micro of Food** **FNH 4583 Food Preservation Tech** **FNH 4593 New Food Product Devel**	
		Concentration Hours	**53**
		Total Production Management Concentration Hours	**124**

JUSTIFICATION

The Department of Animal and Dairy Sciences is working to update the curriculum in two different ways.

1) The ADS faculty finds it necessary to incorporate ADS 3214 Growth and Development into the ADS core due to the relevant content of the course. This course contains pertinent information to all concentrations within the ADS department such as muscle and adipose development as it relates to the quality of animals whether they are produced for food or performance. This is also a foundational course for student's production elective courses as well as a complimentary course to meat science.
2) To incorporate a comprehensive curriculum with degree seeking opportunities in Food Science, as many of our students are interested in a career in the food industry and we provide the meat and milk for human consumption through our work in raising livestock. Recently, there was a structural reorganization, resulting in the separation of disciplines in some departments in the College of Agriculture and Life Sciences. As part of this transition, the Biochemistry division has merged with Nutrition and Health Promotion to form the newly established Department of Biochemistry, Nutrition and Health Promotion in July 2024. This merger has allowed for an opportunity for ADS to also be involved in a curriculum that combines our area of expertise with those in BNHP to integrate expertise from both fields and interdisciplinary learning to expand career opportunities for students. The demand for expertise in food science is rapidly growing due to increasing global concerns about nutrition, sustainability, food safety, and the environmental impact of food production. Historically, ADS has provided a foundation in rearing livestock for food and fiber for humans and animals alike. We provide coursework to prepare students to work in the meat science and dairy industries and have an opportunity to introduce these students to other foundational courses to support this career path with food engineering, nutrition, and biotechnology. Students graduating from the food science concentration will be equipped with the knowledge and skills required for food product development, improve food safety, and contribute to the formulation of health-conscious, sustainable food solutions. The addition of this concentration will also position graduates for roles in academia, industry, regulatory agencies, and public health sectors, where expertise in both animal production and food science is essential. The addition of this concentration aligns with many universities across the nation. There are a few universities with specific Meat Science concentrations in Animal Sciences, however, those programs are slowly moving away from that option. As a food scientist, starting salaries with a B.S. degree in meat companies are typically $60,000 -65,000, whereas production animal science is around $38,000-42,000. Our students will be better equipped to excel in job application pools with a concentration in Food Science housed in Animal and Dairy Science as they combine their production knowledge with a food science approach.

OUTLINE OF CHANGES

1. Adding ADS 3214 across all concentrations as a Major Core course. To do this 4 hours were added to the Major Core and the following deleted from the concentrations:

    a. Pre-Vet/Science – move from 9 credit hours of Free Electives to 5 credit hours of Free Electives
    b. Business and Industry - move from 12 credit hours of General Ag Electives to 8 credit hours of General Ag Electives
    c. Production Management - move from 12 credit hours of General Ag Electives to 8 credit hours of General Ag Electives
    d. Pre-Vet Med-Tech - move from 12 credit hours of Ag/Science Electives to 8 credit hours of Ag/Science Electives
2. Change BIO 4414 Microbiology of Foods to FNH 4414 Microbiology of Foods in the Pre-Vet/Science "Science Electives" menu
3. Add concentration descriptions to each concentration
4. Add Food Scicnce Concentration

STUDENT LEARNING OUTCOMES

No significant changes in the learning outcomes were introduced in the major core, except for introducing ADS 3214 Growth and Development. Student learning outcomes for this course include:

1. Understand the fundamental concepts of Animal Growth and Development

2. Apply the regulation of muscle, bone, and adipose tissue growth and expansion

3. Understand the influence of endocrine, paracrine, and autocrine factors on growth and development of these tissues

4. Apply student's knowledge of anatomy, physiology, biochemistry and nutrition into practical aspects of animal growth and the manipulation thereof.

SUPPORT LETTERS

Attached

EFFECTIVE DATE

August 16, 2025

MISSISSIPPI STATE UNIVERSITY.

DEPARTMENT OF
ANIMAL AND DAIRY SCIENCES
P.O. Box 9815
Mississippi State, MS 39762
P. 662.325.2802
F. 662.325.8873

November 8, 2024

Please accept this letter of support for modifications of the major core for the Animal and Dairy Science curriculum. The faculty have met and discussed the importance of the addition of ADS 3214 Growth and Development to each student in the ADS department. These changes will have no impact on other departments.

These curriculum changes are supported by the faculty of the Department of Animal and Dairy Sciences. Signatures are from ADS the curriculum committee.

Carroll, Erica	Erica Carroll Erica Carroll (Nov 8, 2024 09:38 CST)
Haas, Ellen	Ellen Haas Ellen Haas (Nov 8, 2024 10:16 CST)
Lemley, Caleb	Caleb Lemley Caleb Lemley (Nov 8, 2024 10:25 CST)
Molly Nicodemus	Molly Nicodemus Molly Nicodemus (Nov 8, 2024 10:33 CST)
Brian Rude	Brian J. Rude Brian J. Rude (Nov 8, 2024 10:01 CST)
Trent Smith	Trent Smith Trent Smith (Nov 8, 2024 12:55 CST)

G&D LOS

Final Audit Report 2024-11-08

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By:	Erica Carroll (edc226@msstate.edu)
Status:	Signed
Transaction ID:	CBJCHBCAABAAr7wAMRhYiaf7BOMEEoBFYVyG-mM-PsZZ

"G&D LOS" History

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