

# Poultry Science (POSC)

David J. Caldwell

Director, Center of Excellence for Poultry Science

Head, Department of Poultry Science

0114 Poultry Science Center

479-575-4952

Department of Poultry Science Website (<https://poultry-science.uark.edu/>)

The Department of Poultry Science offers a major in poultry science leading to a Bachelor of Science in Agriculture. Students pursuing a major in Poultry Science would select one of two areas of concentration for their degree program: a Pre-Professional Science Concentration or a Poultry Science Industry Concentration. The department also offers coursework for a minor and a certificate of excellence program.

A major in poultry science is designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility in the expanding fields of production, processing, marketing, and distribution of meat, eggs, and related poultry products. The curriculum also prepares students for career opportunities in specialized areas of nutrition, breeding, genetics, physiology, management, food science, immunology, and disease.

Elective hours allow students to select a minor and thus personalize their degree.

Elective hours can also be used to emphasize areas of business, production, processing or science. Pre-veterinary medicine, pre-medical, or pre-pharmacy requirements may be fulfilled while meeting degree requirements.

Curricula are designed to permit the student to obtain the necessary foundation to pursue graduate study for the master's and doctoral degrees. Advanced degrees are offered but not limited to the areas of nutrition, genetics, physiology, product technology, and poultry health.

## Requirements for B.S.A. with Poultry Science Industry Concentration

### Requirements for a Major in Poultry Science

State minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) and discipline specific general education requirements: (Course work that meets state minimum core requirements is in bold.)

#### University Requirements (1 hour)

UNIV 1001	University Perspectives	1
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#### Communications (12 hours)

<b>Select 6 hours English from state minimum core</b>	<b>6</b>
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<b>Communication Intensive Elective - 6hrs (see degree audit for approved course list)</b>	<b>6</b>
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<b>U.S. History or Government</b>	<b>3</b>
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**Select 3 hours from U.S. History or Government State Minimum Core**

#### Mathematics and Statistics (6 hours)

MATH 1203	College Algebra (ACTS Equivalency = MATH 1103) (or higher)	3
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Select one of the following:	3
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AGEC 2403	Quantitative Tools for Agribusiness	
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STAT 2303	Principles of Statistics (ACTS Equivalency = MATH 2103)	
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#### Physical and Biological Sciences (16 hours)

<b>BIOL 1543 &amp; BIOL 1541L</b>	<b>Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	<b>4</b>
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BIOL 2013 & BIOL 2011L	General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab)	4
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or POSC 2413 Domestic Animal Microbiology & POSC 2411L and Domestic Animal Microbiology Laboratory

<b>CHEM 1073 &amp; CHEM 1071L</b>	<b>Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)</b>	<b>4</b>
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or CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM & CHEM 1121L 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

CHEM 2613 & CHEM 2611L	Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)	4
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or CHEM 3603 Organic Chemistry I & CHEM 3601L and Organic Chemistry I Laboratory

#### Fine Arts and Humanities (6 hours) 6

Select 3 hours Fine Arts from state minimum core

Select 3 hours Humanities from state minimum core

#### Social Sciences (9 hours)

AGEC 1103	Principles of Agricultural Microeconomics	3
or ECON 2023	Principles of Microeconomics (ACTS Equivalency = ECON 2203)	

Select 6 hours Social Sciences from State Minimum Core	6
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#### Poultry Science Core (35 hours)

POSC 1003	Introduction to Poultry Science	3
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POSC 2343	Poultry Production	3
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POSC 2353	Poultry Breeder Management	3
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POSC 3033	Animal Physiology	3
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POSC 3123	Principles of Genetics	3
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or BIOL 2323 General Genetics

POSC 3223	Poultry Diseases	3
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POSC 3554	Avian Anatomy	4
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POSC 4314	Egg and Meat Technology	4
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POSC 4343	Poultry Nutrition	3
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Select 3 hours from the following:	3
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POSC 4801	Seminar: Research Topics	
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POSC 4811	Seminar: Professionalism	
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POSC 4821	Seminar: Problem Solving	
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POSC 4831	Seminar: Processing Regulations	
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Select 3 hours from the following:	3
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AFLS 400VH	Honors Thesis	
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POSC 401V	Internship in Poultry Science	
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POSC 402V	Research Experience	
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<b>General Electives (12 hours)</b>	<b>12</b>
Students should discuss recommended electives with academic/faculty adviser	
<b>20 hours from concentration requirements (PSID, PSPP)</b>	<b>20</b>
<b>Total Hours</b>	<b>120</b>

## Requirements for a Major in Poultry Science with a Poultry Science Industry Concentration

### PSID Concentration

AGEC 2303	Introduction to Agribusiness	3
FDSC 4122	Food Microbiology	2
POSC 4233	Value Added Muscle Foods	3
POSC 4213	Integrated Poultry Management Systems	3
Select a minimum of 9 hours from the following:		9
AGEC 3503	Agricultural Law I	
AGEC 3523	Environmental and Natural Resources Law	
POSC 4123	Legal Issues in Animal Agriculture	
POSC 4163	Companion Animal Nutrition	
POSC 4333	Poultry Breeding	
POSC 4923	Brain and Behavior	
Upper Level AGEC Course (3 hrs)		
<b>Total Hours</b>		<b>20</b>

## Poultry Science B.S.A. with Poultry Science Industry Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should go to the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program.

First Year	Units	
	Fall	Spring
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
Satisfies General Education Outcome 3.4:		
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
POSC 1003 Introduction to Poultry Science	3	
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1, 2</sup>	3	
UNIV 1001 University Perspectives	1	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
POSC 2353 Poultry Breeder Management		3
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)		3

Communication Intensive Elective (Recommend COMM 1313 Public Speaking) (Satisfies General Education Outcomes 1.2 and 5.1)		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) <sup>3</sup>		3
Year Total:	14	15

Second Year	Units	
	Fall	Spring
POSC 2343 Poultry Production	3	
Satisfies General Education Outcome 3.4:		
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) or CHEM 1123 and CHEM 1121L	4	
Satisfies General Education Outcome 3.3:		
AGEC 1103 Principles of Agricultural Microeconomics or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
POSC 3554 Avian Anatomy	4	
STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103) or AGEC 2403 Quantitative Tools for Agribusiness		3
POSC 2413 Domestic Animal Microbiology & POSC 2411L Domestic Animal Microbiology Laboratory or BIOL 2013 and BIOL 2011L		4
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1, 2</sup>		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>4</sup>		3
Communication Intensive Elective (Recommend ACOM 3143 Communicating Agriculture to the Public)		3
Year Total:	17	16

Third Year	Units	
	Fall	Spring
AGEC 2303 Introduction to Agribusiness	3	
CHEM 2613 Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) & CHEM 2611L Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab) or CHEM 3603 and CHEM 3601L	4	
FDSC 4122 Food Microbiology	2	
PSID Concentration Elective	3	
General Elective	3	

POSC 4811 Seminar: Professionalism or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics	1	
POSC 3033 Animal Physiology	3	
POSC 3223 Poultry Diseases	3	
PSID Concentration Elective	3	
General Elective	3	
AFLS 400VH Honors Thesis or POSC 401V Internship in Poultry Science or POSC 402V Research Experience	3	
<b>Year Total:</b>	<b>16</b>	<b>15</b>

Fourth Year	Units	
	Fall	Spring
POSC 4314 Egg and Meat Technology	4	
POSC 4811 Seminar: Professionalism or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics	1	
General Elective	3	
PSID Concentration Elective	3	
POSC 3123 Principles of Genetics or BIOL 2323 General Genetics	3	
POSC 4343 Poultry Nutrition	3	
POSC 4233 Value Added Muscle Foods	3	
POSC 4213 Integrated Poultry Management Systems (Satisfies General Education Outcome 6.1)	3	
POSC 4801 Seminar: Research Topics or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4811 Seminar: Professionalism	1	
General Elective (2-3 hours)	3	
<b>Year Total:</b>	<b>14</b>	<b>13</b>

**Total Units in Sequence: 120**

- <sup>1</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.
- <sup>2</sup> The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123 or Intermediate-level world language (usually 2003-level).

- <sup>3</sup> The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGECE 1103, AGECE 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.
- <sup>4</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.  
Note, courses cannot be counted twice in degree requirements.

### Requirements for B.S.A. in Poultry Science with Pre-Professional Science Concentration Requirements for a Major in Poultry Science

State minimum core (<http://catalog.uark.edu/undergraduatecatalog/gened/stateminimum/>) and discipline specific general education requirements: (Course work that meets state minimum core requirements is in bold.)

<b>University Requirements (1 hour)</b>		
UNIV 1001	University Perspectives	1
<b>Communications (12 hours)</b>		
<b>Select 6 hours English from state minimum core</b>		<b>6</b>
<b>Communication Intensive Elective - 6 hrs (see degree audit for approved course list)</b>		<b>6</b>
<b>U.S. History or Government 3</b>		
<b>Select 3 hours from U.S. History or Government State Minimum Core</b>		
<b>Mathematics and Statistics (6 hours)</b>		
MATH 1203	College Algebra (ACTS Equivalency = MATH 1103) (or higher)	3
Select one of the following: 3		
AGECE 2403	Quantitative Tools for Agribusiness	
STAT 2303	Principles of Statistics (ACTS Equivalency = MATH 2103)	
<b>Physical and Biological Sciences (16 hours)</b>		
<b>BIOL 1543 &amp; BIOL 1541L</b>	<b>Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) and Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)</b>	<b>4</b>
BIOL 2013 & BIOL 2011L	General Microbiology (ACTS Equivalency = BIOL 2004 Lecture) and General Microbiology Laboratory (ACTS Equivalency = BIOL 2004 Lab) or POSC 2413 Domestic Animal Microbiology & POSC 2411L and Domestic Animal Microbiology Laboratory	4
<b>CHEM 1073 &amp; CHEM 1071L</b>	<b>Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) and Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab)</b>	<b>4</b>

<b>or CHEM 1123 University Chemistry II (ACTS Equivalency = CHEM &amp; CHEM 1121L 1424 Lecture) and University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)</b>		
CHEM 2613 & CHEM 2611L	Organic Physiological Chemistry (ACTS Equivalency = CHEM 1224 Lecture) and Organic Physiological Chemistry Laboratory (ACTS Equivalency = CHEM 1224 Lab)	4
or CHEM 3603 Organic Chemistry I & CHEM 3601 Land Organic Chemistry I Laboratory		
<b>Fine Arts and Humanities (6 hours)</b>		<b>6</b>
Select 3 hours Fine Arts from state minimum core		
Select 3 hours Humanities from state minimum core		
<b>Social Sciences (9 hours)</b>		
AGEC 1103	Principles of Agricultural Microeconomics	3
or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)		
Select 6 hours Social Sciences from State Minimum Core		6
<b>Poultry Science Core (35 hours)</b>		
POSC 1003	Introduction to Poultry Science	3
POSC 2343	Poultry Production	3
POSC 2353	Poultry Breeder Management	3
POSC 3033	Animal Physiology	3
POSC 3123	Principles of Genetics	3
or BIOL 2323 General Genetics		
POSC 3223	Poultry Diseases	3
POSC 3554	Avian Anatomy	4
POSC 4314	Egg and Meat Technology	4
POSC 4343	Poultry Nutrition	3
Select 3 hours from the following:		3
POSC 4801	Seminar: Research Topics	
POSC 4811	Seminar: Professionalism	
POSC 4821	Seminar: Problem Solving	
POSC 4831	Seminar: Processing Regulations	
Select 3 hours from the following:		3
AFLS 400VH	Honors Thesis	
POSC 401V	Internship in Poultry Science	
POSC 402V	Research Experience	
<b>General Electives (12 hours)</b>		<b>12</b>
Students should discuss recommended electives with academic/faculty adviser		
<b>20 hours from concentration requirements (PSID, PSPP)</b>		<b>20</b>
<b>Total Hours</b>		<b>120</b>

## Requirements for a Major in Poultry Science with a Poultry Science Pre-Professional Science Concentration

### PSPP Concentration

BIOL 2533	Cell Biology	3
CHEM 3813	Elements of Biochemistry	3
Select a minimum of 14 hours from the following:		14
ANSC 3143	Principles of Animal Nutrition	
BIOL 4333	Biotechnology in Agriculture	

CHEM 3613 & CHEM 3611L	Organic Chemistry II and Organic Chemistry II Laboratory	
PHIL 3103	Ethics and the Professions	
PHYS 2013 & PHYS 2011L	College Physics I (ACTS Equivalency = PHYS 2014 Lecture) and College Physics I Laboratory (ACTS Equivalency = PHYS 2014 Lab)	
PHYS 2033 & PHYS 2031L	College Physics II (ACTS Equivalency = PHYS 2024 Lecture) and College Physics II Laboratory (ACTS Equivalency = PHYS 2024 Lab)	
POSC 3513	Current Approaches in Agricultural Laboratory Research	
or POSC 3513L 3 hours Current Approaches in Agricultural Laboratory Research		
POSC 4163	Companion Animal Nutrition	
POSC 4923	Brain and Behavior	
Upper Level CHEM or BIOL		
<b>Total Hours</b>		<b>20</b>

## Poultry Science B.S.A. with Poultry Science Pre-Professional Science Concentration Eight-Semester Degree Program

Students wishing to follow the degree plan should go to the Eight-Semester Degree Policy (<http://catalog.uark.edu/undergraduatecatalog/academicregulations/eightsemesterdegreecompletionpolicy/>) for university requirements of the program.

	Units	
	Fall	Spring
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
Satisfies General Education Outcome 3.4:		
BIOL 1543 Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & BIOL 1541L Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)	4	
POSC 1003 Introduction to Poultry Science	3	
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1, 2</sup>	3	
UNIV 1001 University Perspectives	1	
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.1)		3
POSC 2353 Poultry Breeder Management		3
MATH 1203 College Algebra (ACTS Equivalency = MATH 1103) (Satisfies General Education Outcome 2.1)		3
Communication Intensive Elective (3 hrs) (Recommend COMM 1313 Public Speaking) (Satisfies General Education Outcomes 1.2 and 5.1)		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcome 3.3) <sup>3</sup>		3
<b>Year Total:</b>	<b>14</b>	<b>15</b>

Second Year	Units	
	Fall	Spring
POSC 2343 Poultry Production	3	
General Elective (Recommend CHEM 1103/1101L University Chemistry I)	4	
Satisfies General Education Outcome 3.3:		
AGEC 1103 Principles of Agricultural Microeconomics or ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)	3	
U.S. History or Government State Minimum Core Elective (Satisfies General Education Outcome 4.2)	3	
POSC 3554 Avian Anatomy	4	
STAT 2303 Principles of Statistics (ACTS Equivalency = MATH 2103) or AGECE 2403 Quantitative Tools for Agribusiness		3
POSC 2413 Domestic Animal Microbiology & POSC 2411L Domestic Animal Microbiology Laboratory or BIOL 2013 and BIOL 2011L		4
Satisfies General Education Outcome 3.4:		
CHEM 1073 Fundamentals of Chemistry (ACTS Equivalency = CHEM 1214 Lecture) & CHEM 1071L Fundamentals of Chemistry Laboratory (ACTS Equivalency = CHEM 1214 Lab) or CHEM 1123 and CHEM 1121L		4
Fine Arts/Humanities State Minimum Core Elective (Satisfies General Education Outcome 3.1 or 3.2) <sup>1, 2</sup>		3
Communication Intensive Elective (Recommend ACOM 3143 Communicating Agriculture to the Public)		3
Year Total:	17	17

Third Year	Units	
	Fall	Spring
BIOL 2533 Cell Biology	3	
CHEM 3603 Organic Chemistry I & CHEM 3601L Organic Chemistry I Laboratory or CHEM 2613 and CHEM 2611L	4	
PSPP Concentration Elective (Recommend PHYS 2013/2011L College Physics I w/lab)	4	
General Elective	3	
POSC 4811 Seminar: Professionalism or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics	1	
POSC 3033 Animal Physiology		3
POSC 3223 Poultry Diseases		3
PSPP Concentration Elective (Recommend CHEM 3613/3611L Organic Chemistry II)		4
PSPP Concentration Elective (Recommend PHYS 2033/2031L College Physics II)		4

POSC 402V Satisfies General Education Outcome

6.1:

AFLS 400VH Honors Thesis <sup>4</sup> or POSC 401V Internship in Poultry Science or POSC 402V Research Experience		3
Year Total:	15	17

Fourth Year	Units	
	Fall	Spring
POSC 4314 Egg and Meat Technology	4	
POSC 4811 Seminar: Professionalism or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics	1	
CHEM 3813 Elements of Biochemistry	3	
PSPP Concentration Elective	2	
POSC 3123 Principles of Genetics or BIOL 2323 General Genetics	3	
General Elective	2	
POSC 4801 Seminar: Research Topics or POSC 4831 Seminar: Processing Regulations or POSC 4821 Seminar: Problem Solving or POSC 4801 Seminar: Research Topics		1
POSC 4343 Poultry Nutrition		3
Social Sciences State Minimum Core Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>5</sup>		3
General Electives <sup>4</sup>		3
Year Total:	15	10

**Total Units in Sequence: 120**

<sup>1</sup> The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: ARCH 1003, ARHS 1003, COMM 1003, DANC 1003, LARC 1003, MLIT 1003, MLIT 1003H, MLIT 1013, MLIT 1013H, MLIT 1333, THTR 1003, THTR 1013, or THTR 1013H.

<sup>2</sup> The Humanities Elective courses which satisfy General Education Outcome 3.2 include: AAST 2023, ANTH 1033, ARCH 1013, CLST 1003, CLST 1003H, CLST 1013, COMM 1233, DANC 1003, ENGL 1213, GNST 2003, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HUMN 1124H, HUMN 2213, LALS 2013, MRST 2013, MUSY 2003, MUSY 2003H, PHIL 2003, PHIL 2003C, PHIL 2003H, PHIL 2103, PHIL 2103C, PHIL 2303, THTR 1003, THTR 1013, THTR 1013H, WLIT 1113, WLIT 1123 or Intermediate-level world language (usually 2003-level).

<sup>3</sup> The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: AGECE 1103, AGECE 2103, ANTH 1023, COMM 1023, ECON 2013, ECON 2023, ECON 2143, EDST 2003, HDFS 1403, HDFS 2413, HDFS 2603, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2003, HIST 2013, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2003, PLSC 2013, PLSC 2203, PLSC 2813, PLSC 2813H, PSYC 2003, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

<sup>4</sup> For students completing AFLS 400VH or POSC 401V, you must select POSC 4213 as one of your general electives to satisfy General Education Outcome 6.1.

<sup>5</sup> The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023,

HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.

Note, courses cannot be counted twice in degree requirements.

## Minor in Poultry Science (POSC-M)

A student planning to minor in poultry science should declare the minor with their major dean's office and consult a departmental adviser to discuss requirements. The minor consists of 16 hours to include the following:

### Core Requirements (10 hours)

POSC 1003	Introduction to Poultry Science	3
POSC 2343	Poultry Production	3
Choose 4 hours from the following:		4

POSC 3554 Avian Anatomy

POSC 4314 Egg and Meat Technology

### Controlled POSC Electives (6 hours) 6

Choose a minimum of 6 hours from the following:

POSC 2353 Poultry Breeder Management

POSC 3033 Animal Physiology

POSC 3223 Poultry Diseases

POSC 3554 Avian Anatomy

POSC 3123 Principles of Genetics

POSC 4333 Poultry Breeding

POSC 4314 Egg and Meat Technology

POSC 4343 Poultry Nutrition

POSC 3013 Exotic Companion Birds

POSC 3513 Current Approaches in Agricultural Laboratory Research

POSC 4213 Integrated Poultry Management Systems

POSC 4233 Value Added Muscle Foods

POSC 4923 Brain and Behavior

POSC Elective (3 hours)

**Total Hours 16**

### Requirements for Undergraduate Certificate of Excellence in Poultry Science

Students entering the Certificate of Excellence Program must 1) meet the admission requirements for the University of Arkansas and 2) have completed 90 hours of coursework with a 2.0 or higher from a regionally accredited institution of higher education.

Students who have completed a Bachelor of Science degree may also consider this program. Typical careers include production/processing/allied positions in the poultry industry, graduate studies are also an option.

### Curriculum Outline:

POSC 3033	Animal Physiology	3
POSC 3223	Poultry Diseases	3
POSC 3554	Avian Anatomy	4
POSC 4213	Integrated Poultry Management Systems	3
POSC 4314	Egg and Meat Technology	4
POSC 4343	Poultry Nutrition	3

POSC 4801	Seminar: Research Topics	1
or POSC 4821	Seminar: Problem Solving	
POSC 4811	Seminar: Professionalism	1
or POSC 4831	Seminar: Processing Regulations	
POSC 401V	Internship in Poultry Science	3
POSC 410V	Special Topics in Poultry Science	3

## Faculty

**Alrubaye, Adnan A.**, Ph.D., M.Ed. (University of Arkansas), M.Sc. (University of Baghdad), Assistant Professor, 2016, 2021.

**Bottje, Walter G.**, Ph.D. (University of Illinois-Urbana-Champaign), M.S. (Southern Illinois University), B.S. (Eastern Illinois University), Professor, 1985, 1993.

**Caldwell, David J.**, Ph.D., M.S., and B.S. (Texas A&M University), Professor, 2019.

**Clark, Fred D.**, Ph.D., D.V.M., M.S., B.S. (Texas A&M University), Extension Professor, 1994, 2007.

**Coon, Craig N.**, Ph.D., M.S., B.S. (Texas A&M University), Professor, 1997.

**Donoghue, Annie**, Ph.D. (F. Edward Herbert School of Medicine), M.S. (Texas A&M University), B.S. (San Diego State University), Research Professor, 2000.

**Dridi, Sami**, Ph.D., M.S. (National Polytechnic Institute of Lorraine, France), B.S. (Superior Institute of Mateur, Tunisia), Professor, 2013, 2018.

**Erf, Gisela F.**, Ph.D. (Cornell University), M.S., B.S. (University of Guelph, Canada), Professor, Avian Immunology Professorship, 1994, 2004.

**Hanning, Casey Owens**, Ph.D., M.S., B.S. (Texas A&M University), Professor, 2000, 2017.

**Hargis, Billy M.**, Ph.D., D.V.M. (University of Minnesota-Twin Cities), M.S. (University of Georgia), B.S. (University of Minnesota), Distinguished Professor, Sustainable Poultry Health Chair, 2000, 2017.

**Kidd, Michael T.**, Ph.D. (North Carolina State University), M.S., B.S.A. (University of Arkansas), Professor, 2010.

**Kong, Byungwhi**, Ph.D., M.S. (University of Minnesota-Twin Cities), B.S. (Korea University), Associate Professor, 2006, 2012.

**Kuenzel, Wayne J.**, Ph.D. (University of Georgia), M.S., B.S. (Bucknell University), Professor, 2000.

**Kwon, Young Min**, Ph.D. (Texas A&M University), M.S., B.S. (Seoul National University), Associate Professor, 2002, 2008.

**Marcy, John A.**, Ph.D., M.S. (Iowa State), B.S. (University of Tennessee), Extension Professor, 1993, 2006.

**Orlowski, Sara K.**, Ph.D., M.S. (University of Arkansas), B.S. (Cornell University), Assistant Professor, 2019.

**Rath, Narayan C.**, Ph.D., M.S. (University of Delhi-India), B.S. (Utkal University-India), Research Professor, 1992, 1998.

**Rochell, Samuel J.**, Ph.D. (University of Illinois at Urbana-Champaign), M.S., B.S. (Auburn University), Assistant Professor, 2016.

**Sun, Xiaolun**, Ph.D., M.S. (Virginia Polytech Institute and State University), B.S. (Southern China Agricultural University), Assistant Professor, 2016.

**Tellez-Isaias, Guillermo**, Ph.D. (Texas A&M University), Visiting Professor, 2002.

**Wideman, Robert F.**, Ph.D. (University of Connecticut), B.A. (University of Delaware), Professor, 1993.

## Courses

### **POSC 1003. Introduction to Poultry Science. 3 Hours.**

To introduce the student to the career opportunities in the poultry science industry. Students will be introduced to biological sciences associated with poultry. Corequisite: Lab component. (Typically offered: Fall)

### **POSC 1062. Sustainable Integrated Small Animal Farming. 2 Hours.**

Practical information on small scale animal production, including practical strategies for farm planning, issues of economic and environmental sustainability, best management practices, biosecurity, disease prevention, and farm safety will be presented. (Typically offered: Spring)

This course is cross-listed with ANSC 1062.

### **POSC 2343. Poultry Production. 3 Hours.**

To develop a basic foundation about the practices utilized to produce broilers and turkeys. Course will highlight hatchery function and management; embryo development and hatching; chick/poultry transportation, preparation and maintenance of facilities for rearing birds, bird environment, nutrition, and health.

Also to be covered are the different roles associated with live production in an integrated company. Corequisite: Lab component. (Typically offered: Fall)

### **POSC 2353. Poultry Breeder Management. 3 Hours.**

Students will be introduced to the management practices used in production of young and adult chickens, turkeys, and other poultry with special emphasis on broiler, breeder, and market egg production. Lecture 2 hours, laboratory 3 hours per week. Corequisite: Lab component. (Typically offered: Spring)

### **POSC 2411L. Domestic Animal Microbiology Laboratory. 1 Hour.**

This course is designed for students working on their Poultry Science, Animal Science, and/or Food Science degrees. Students enrolled in this course will learn how to collect samples aseptically from live birds and meat samples, transport samples, and culture samples on a variety of different microbiological media. In addition, students will have the opportunity to visit one of the microbiology labs in the local poultry production facilities. Students will learn how to handle samples, stain bacterial cells, and identify unknown bacteria from field samples. A lab period will be assigned to teaching students on how to use bacteria in food production by teaching students how to prepare and sample yogurt. Corequisite: POSC 2413. (Typically offered: Fall)

This course is cross-listed with ANSC 2411L.

### **POSC 2413. Domestic Animal Microbiology. 3 Hours.**

Basic concepts of domestic animal and poultry microbiology including diversity, genetics, metabolism, growth, control of growth, pathogenesis, and immunology. Prerequisite: (BIOL 1543 and BIOL 1541L) and (CHEM 1073 or CHEM 1103 or CHEM 1123). Corequisite: POSC 2411L. (Typically offered: Fall)

This course is cross-listed with ANSC 2413.

### **POSC 3013. Exotic Companion Birds. 3 Hours.**

Topics include basic care, health, breeding, bird evolution, anatomy, and nutritional management of commonly kept exotic companion birds, including parrots, cockatoos, macaws, finches, canaries, and pigeons. Discussion will include housing and care for individual pet birds and large scale breeding and production. Lecture/discussion 3 hours per week. Prerequisite: BIOL 1543. (Typically offered: Fall Odd Years)

### **POSC 3033. Animal Physiology. 3 Hours.**

Fundamental aspects of central nervous, musculoskeletal, reproductive, digestive, immune, cardiovascular, respiratory and renal systems will be covered. The normal structure and function of these systems will be emphasized. Lecture 3 hours per week. Prerequisite: BIOL 1543 and CHEM 1123 or CHEM 1073. (Typically offered: Fall)

This course is equivalent to ANSC 3033.

### **POSC 3123. Principles of Genetics. 3 Hours.**

Fundamentals of heredity, with special emphasis on the improvement of farm animals. Lecture 3 hours per week. Prerequisite: BIOL 1543 and MATH 1203 or higher. (Typically offered: Fall)

This course is cross-listed with ANSC 3123.

### **POSC 3223. Poultry Diseases. 3 Hours.**

Common diseases affecting poultry reared under commercial conditions will be covered including diagnosis, therapy and prevention. Immunity, sanitation practices, and chemoprophylaxis will also be covered. Lecture 3 hours per week with some demonstrations, slides and videotapes. Prerequisite: BIOL 2013 and BIOL 2011L and junior standing. (Typically offered: Spring)

### **POSC 3381. Poultry Judging and Selection. 1 Hour.**

Practice in production judging and flock selection. Laboratory 3 hours per week. (Typically offered: Fall and Spring) May be repeated for up to 4 hours of degree credit.

### **POSC 3513. Current Approaches in Agricultural Laboratory Research. 3 Hours.**

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)

This course is cross-listed with ANSC 3513.

### **POSC 3513H. Honors Current Approaches in Agricultural Laboratory Research. 3 Hours.**

A laboratory course to introduce students to current laboratory research techniques used in agricultural and life sciences. Hands-on laboratory exercises will emphasize current cellular and molecular research techniques, laboratory notebook keeping, data interpretation, and presentation of results. Prerequisite: BIOL 1543. (Typically offered: Spring Even Years)

This course is cross-listed with POSC 3513, ANSC 3513.

### **POSC 3554. Avian Anatomy. 4 Hours.**

Detailed coverage of the external and internal anatomy of poultry, including formation and development of the egg and embryo. Lecture 3 hours, laboratory 2 hours per week. Corequisite: Lab component. Prerequisite: BIOL 1543. (Typically offered: Fall)

### **POSC 400V. Special Problems. 1-9 Hour.**

Special problems in the poultry sciences for advanced students. (Typically offered: Fall, Spring and Summer) May be repeated for up to 9 hours of degree credit.

### **POSC 401V. Internship in Poultry Science. 1-6 Hour.**

Supervised work experience with private or government organizations to introduce students to professional areas of work in poultry science. Prerequisite: Junior standing. (Typically offered: Fall, Spring and Summer) May be repeated for up to 8 hours of degree credit.

### **POSC 402V. Research Experience. 1-6 Hour.**

An undergraduate research experience should familiarize students with the research process and expand their knowledge in areas of poultry science through scientific literature searches and hands-on experiential learning. (Typically offered: Fall, Spring and Summer) May be repeated for up to 6 hours of degree credit.

### **POSC 4033. Statistical Process Control in the Food Industry. 3 Hours.**

Analysis of processing data related to compliance with regulatory limits, quality & safety limits and internal & external customer specifications. Emphasizes statistical process control chart development, including understanding data and chart selection, calculating statistical limits, and interpreting process performance. Prerequisite: Instructor consent. (Typically offered: Irregular)

### **POSC 410V. Special Topics in Poultry Science. 1-4 Hour.**

Topics not covered in other courses or for a more intensive study of specific topics in poultry science. (Typically offered: Irregular) May be repeated for degree credit.

**POSC 4123. Legal Issues in Animal Agriculture. 3 Hours.**

An issues-oriented course focusing on the legal issues involved in the production of poultry, swine and livestock. Emphasis will center on the laws, regulations and policy arguments involved in animal confinement, antibiotic use, humane slaughter and veterinary medicine, along with other related issues. The wide range of regulation from local to state to federal, depending on the issue will be studied and discussed. (Typically offered: Spring Odd Years)

This course is cross-listed with AGECE 4123, ANSC 4123.

**POSC 4163. Companion Animal Nutrition. 3 Hours.**

This course is designed to focus on the digestive anatomy, physiology, and nutrient metabolism of non-herbivorous companion animals, primarily dogs and cats. Topics discussed will also include an overview of the pet food industry, its regulations and commonly utilized ingredients. Students will gain a deeper understanding of nutrition as it relates to life stages and various disease states that can affect both dogs and cats. This course will require a Saturday trip to one or two off campus facilities.

Prerequisite: ANSC 3143 or POSC 4343. (Typically offered: Spring)

This course is cross-listed with ANSC 4163.

**POSC 4213. Integrated Poultry Management Systems. 3 Hours.**

Major managerial systems in the integrated commercial poultry industry. Development of an understanding of the basic decision making processes of poultry companies and the factors influencing those decisions. Prerequisite: POSC 2353 and AGECE 1103 and AGECE 2303. (Typically offered: Spring)

**POSC 4233. Value Added Muscle Foods. 3 Hours.**

An intense study of muscle structure and how it relates to the development of further processed meat products. Muscle ultrastructure, protein functionality, product development, and quality analysis will be covered. In class hands on activities will also be included to allow students to obtain experience of producing processed meat products. Prerequisite: POSC 4314. (Typically offered: Spring Odd Years)

**POSC 4314. Egg and Meat Technology. 4 Hours.**

Study of the science and practice of processing poultry meat and egg products; examination of the physical, chemical, functional and microbiological characteristics of value added poultry products; factors affecting consumer acceptance and marketing of poultry products and the efficiency of production. Corequisite: Lab component. Prerequisite: (CHEM 1123 and CHEM 1121L) or (CHEM 1073 and CHEM 1071L) and BIOL 1543 and BIOL 1541L. (Typically offered: Fall)

**POSC 4333. Poultry Breeding. 3 Hours.**

Application of new developments in poultry breeding for efficient egg and meat production. Not intended for students interested in a career in veterinary sciences. Lecture 3 hours per week. Prerequisite: MATH 1203 or higher and junior standing. (Typically offered: Fall Odd Years)

**POSC 4343. Poultry Nutrition. 3 Hours.**

Principles of nutrition as applied to the formulation of practical chicken and turkey rations. Lecture 3 hours per week. Prerequisite: CHEM 2613 or CHEM 3603 and junior standing. (Typically offered: Spring)

**POSC 4613. Muscle Growth and Development. 3 Hours.**

This is an undergraduate level course offering detailed insights into skeletal muscle morphological, physiological, cellular, and molecular factors affecting muscle structure and function, with special emphasis on cellular and molecular regulation of muscle growth and development, such as myo-, fibro-, and adipo-genesis. And the relationship between the properties of skeletal muscle and meat quality. ANSC 3033 and(or) CHEM 3813 are recommended as a prerequisite(s). (Typically offered: Fall) This course is cross-listed with ANSC 4613.

**POSC 4801. Seminar: Research Topics. 1 Hour.**

Required by all poultry science majors. Prerequisite: Junior or Senior standing and COMM 1313. (Typically offered: Spring Odd Years)

**POSC 4811. Seminar: Professionalism. 1 Hour.**

Addressing issues associated with preparation for finding and retaining your first job in the poultry industry. Lecture 1 hour per week. Prerequisite: Junior or Senior standing. (Typically offered: Fall Odd Years)

**POSC 4821. Seminar: Problem Solving. 1 Hour.**

Real world problem solving of poultry production systems. Lecture 1 hour per week. Prerequisite: Junior/ senior standing. (Typically offered: Spring Even Years)

**POSC 4831. Seminar: Processing Regulations. 1 Hour.**

Processing plant procedures and regulations with an emphasis on problem solving. Lecture 1 hour per week. Prerequisite: Junior or senior standing. (Typically offered: Fall Even Years)

**POSC 4923. Brain and Behavior. 3 Hours.**

Covers cellular through neural systems, major brain functions and comparative neuroanatomy. Topics include ion channels, membrane and action potentials, synaptic integration, neurotransmitters, major brain regions of mammals and birds, sensory and autonomic nervous systems, neuroendocrine system, and control by the brain of critical functions and behavior. Lecture 3 hours per week. Prerequisite: (ANSC 3033 or POSC 3033) or PSYC 2003, or BIOL 2213, or BIOL 2443, or BIOL 2533. (Typically offered: Fall)

This course is cross-listed with ANSC 4923.