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January 18, 2019

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Dear Colleagues:

The attached proposal from the College of Agricultural and Environmental Sciences to offer the existing major in Poultry Science (M.S.) with a Non-Thesis option will be an agenda item for the January 25, 2019, Full University Curriculum Committee meeting.

Sincerely,

John Maerz, Chair
University Curriculum Committee

cc: Interim Provost Libby V. Morris
Dr. Rahul Shrivastav

Proposal to Add a Non-Thesis Option to the M.S. in Poultry Science

Department of Poultry Science

Submitted to: Dr. Suzanne Barbour
Dean, Graduate School

Submitted by: Dr. Todd Applegate, Poultry Science Department Head
Prepared by: Dr. Kristen Navara
Graduate Coordinator
Department of Poultry Science

Basic Information:

Proposed Change: Non-thesis option for students pursuing a non-research, experiential track

Proposed Start Date: Fall 2019

Department: Poultry Science

College: College of Agricultural and Environmental Sciences

Program Description:

The Department of Poultry Science is requesting that a non-thesis option for the M.S. in Poultry Science be implemented for students pursuing a non-research, experientially-oriented program of study. This program is part of a goal to expand the graduate program in the department and broaden the opportunities available for students with goals other than a research career in the field. The non-thesis M.S. degree is designed to provide real-world experiential learning for students aiming to work in industry, medical, or veterinary settings. This track would also be useful for those already working in an industry setting but aiming to gain additional skills for their current jobs. The poultry industry in Georgia is among the largest in the country, and industry representatives have expressed a need for course-based programs that will expand the expertise of current and future employees.

The program of study for students selecting the non-thesis option would contain all the courses already required of thesis-track M.S. students, as well as a course in applied statistics, which virtually all of our current M.S. students also take, but is not currently required for the thesis-track. This requirement is meant to facilitate a student's comprehension of research literature. In addition, we have focused the required courses in the non-thesis track to include nine hours of courses that specifically focus on Poultry Science, which provides a more concentrated focus and expertise within the field than is required for our thesis M.S. Finally, to make the non-thesis option experientially based, we are requiring both a semester of research with a faculty member as well as 6 credit hours of internship experience either in the industry or a veterinary or medical setting. The total credit hours for the non-thesis M.S. option is 30 hours—the same as for the thesis M.S. option. It is anticipated that a student will enroll in 12 credit hours of coursework (2-3 courses) during his/her first two semesters, complete three credit hours of internship over the summer, enroll for 3 credit hours of Master's Thesis credit (POUL 7001) the next fall semester,

and finish the program by completing a second internship experience the following spring semester. Alternatively, individuals who are currently employed may choose to learn new aspects of their current jobs in exchange for internship credit, and may also choose to take an extended time to complete the degree.

As with the current M.S. track, each student will have a graduate advisor and a graduate committee consisting of 5 members, with at least 50% of those members consisting of graduate faculty from within the University of Georgia. The graduate committee will tailor the coursework to the needs of the individual student, ensuring that the minimum departmental requirements outlined below are met. If a student has completed any of the courses listed (in a previous undergraduate or graduate program), these can satisfy that requirement, but the student must still complete a total of 30 semester hours.

The following table outlines the program of study that is required for the current thesis option, and the proposal non-thesis option.

Current M.S With Thesis	**Proposed M.S. Non-thesis**
Core:	**Core:**
POUL 8100, Poultry Science Seminar (1 hour)	POUL 8100, Poultry Science Seminar (1 hour)
POUL 8120, Scientific Writing and Literature Retrieval (3 hours)	POUL 8120, Scientific Writing and Literature Retrieval (3 hours)
	Graduate-level course in applied statistics (3 hours) (e.g., STAT 6210, Introduction to Statistical Methods I or FANR 6750-6750D, Experimental Methods in Forestry and Natural Resources Research)
Specialty:	**Specialty:**
8 additional hours graduate only coursework, excluding POUL 7000, Master's Research and POUL 7300, Master's Thesis	9 hours from the following list of courses: ANNU(ADSC)(POUL) 6370, Monogastric Nutrition (3 hours) POUL(BIOL) 6060, Reproductive Endocrinology (3 hours) POUL 6200-6200L, Avian Anatomy and Physiology (4 hours) POUL 6860-6860L, Poultry Processing (3 hours) POUL 8333, Poultry Science Graduate Practicum (1-3 hours) POUL 8150, General Nutrition and the Organization of Feeding Studies (2 hours) POUL 6300, Nutritional Immunology in Health and Production (3 hours)

9 hours of other graduate-level courses, excluding POUL 7000, Master's Research and POUL 7300, Master's Thesis	5 hours of other graduate-level courses, making sure to total at least 12 hours of graduate-only courses overall
Research and Thesis Credits:	**Experiential Learning Credits**
POUL 7000, Master's Research (3 hours)	POUL 7001- Independent Research for Non-thesis M.S. Students (3 hours) – Student must conduct a research project with a faculty member
POUL 7300, Master's Thesis (3 hours)	POUL 8310 – Internship in Poultry Science (6 hours) – student must write a written report that will be approved by committee and submitted to the department
Oral Defense of M.S. Thesis	Oral Exam Based on Concentration
Minimum total Credit Hours: 30	Minimum Total Credit Hours: 30

*POUL 7001 and POUL 8310 are new courses that have been developed specifically for incorporation into this non-thesis track.

In lieu of a thesis, the student must not only pass an oral exam based on the material learned in the chosen specialty courses, but he/she must also complete a one-semester research project with a faculty member (POUL 7001, Independent Research for Non-Thesis M.S. Students) and present the results of that project to a small group of faculty (min = 3) within the department, and must provide a written report of internship experiences following each of the two internship experiences (3 credit hours POUL 8310 X 2). The oral examination will be administered by the student's committee during the final semester of the student's program, and the chair will assign a pass/fail grade with input from the committee. Should the student fail the oral exam, he/she will have one more opportunity to pass this exam, but he or she will have to enroll and take the exam the following semester. Any student failing the oral exam twice will not be permitted to obtain a non-thesis M.S. degree in the Department of Poultry Science.

Description of Potential Specialty Courses

POUL(BIOL) 6060, Reproductive Endocrinology (3 hours)
The principles of reproductive endocrinology will be taught using the bird as a model species. Research findings from humans and farm animal species will also be utilized to provide the most complete and current information on the hormonal control of reproduction. Emphasis will also be placed on follicular development, spermatogenesis, fertilization, endocrine disruptors, sex determination and selection, sexual differentiation, and embryology.

POUL 6200/6200L, Avian Anatomy and Physiology (4 hours)
Survey of anatomy and physiology at the gross and cellular levels. Special emphasis will be placed on the unique characteristics of avian physiology and morphology using the chicken as the model animal.

POUL 6860/6860L, Poultry Processing (3 hours)
Basic principles and methods of processing poultry and eggs. Broiler harvesting, slaughter, evisceration, plant sanitation, microbiology, inspection, grading, regulations, water and waste water handling, quality control and HACCP plans, and further processing.

POUL 8120, Scientific Writing and Literature Retrieval (3 hours)
Scientific writing and literature retrieval techniques in the life sciences. Library resources and their use through manual and automated retrieval systems and on practical aspects of oral and written communications of scientific information.

POUL 8333, Poultry Science Graduate Practicum (1-3 hours)
Graduate students will work directly with extension or service faculty to gain first-hand experience on how to deliver scientific or technical knowledge to diverse audiences. Emphasis will be placed on matching students to extension personnel most appropriate to their area of scientific training.

POUL 8150, Poultry Nutrition and the Organization of Feeding Studies (2 hours)
Practical aspects of nutrition and the relationship of nutritional programs in poultry production as it relates to feeding trials for other disciplines.

POUL 6300, Nutritional Immunology in Health and Production (3 hours)
Principles of how nutrition interacts with the immune system to affect humans, pet animals, and farm animal productivity and health. Research findings will be presented to understand the mechanisms of nutrition and immune function interaction and the effects of an immune response on nutritional needs.

ANNU(ADSC)(POUL) 6370, Monogastric Nutrition (3 hours)
Comparative nutrition of monogastric animals, with special but not exclusive, consideration of poultry and swine.

Note that for some of these courses, e-learning versions are either in development or planned, and those electronic versions of the courses will also be applicable towards this 9-hour total.

Faculty Vote

The Graduate Faculty of the Department of Poultry Science voted unanimously in favor of the proposed non-thesis M.S. option. The faculty vote, taken on March 16, 2017, was 10 YES, 0 NO, 0 ABSTAIN.

Justification for the Proposed Non-Thesis M.S. Option

A non-thesis option is needed in the Department of Poultry Science for several reasons:

- Post-baccalaureate coursework in poultry science can be beneficial to a student's goals without the need for a research-specific component, particularly if those students are required to obtain another category of experiential learning in the form of real-world industry, veterinary, or medical experience. Best examples are students whose aspirations include specialized non-research positions in the Poultry Industry, or veterinary-bound students for whom a background in poultry and/or avian biology would make them more competitive and/or better suited to their ultimate veterinary specialization. In the cases described above, a thesis requirement delays the completion of the student's degree and takes time away from their ability to gain real-world experiences that would better prepare them for their ultimate career goals.
- We currently have students who begin a thesis M.S. degree in our department and complete a majority of the necessary coursework only to learn in the process that research skills are not a strength and that they would prefer a career in the industry. In fact, >80% of our graduate students have industry rather than research aspirations. The M.S., Non-Thesis option would allow students who start out with the knowledge that they have industry aspirations to pursue a degree without the need to focus on research, and also would allow those students who found out after a year or two in the program that their aspirations do not require research experience to gain a degree using coursework and experiential learning only. As a result, they would not have spent 1-2 years taking coursework in our department in vain.
- There is currently a small core of universities offering Poultry Science programs and Animal Science programs with concentrations in Poultry Science (e.g., North Carolina State University, Texas A & M University, University of Arkansas, Auburn University, Penn State, and Missisippi State University), and many already offer non-thesis degree options in this area (e.g., Mississippi State, North Carolina State, Penn State). The addition of a non-thesis option to our program would make us more competitive among these universities for graduate student recruitment and retention.

Admission Procedure for Domestic Applicants

The admission standards are the same for both the thesis and non-thesis options. Admissions are open to all qualified graduates of accredited institutions. Admission materials are available through the Graduate Admissions Office. All prospective students should send to the Graduate School: 1) a completed application, 2) two official transcripts from each institution of higher education attended, 3) Graduate Record Examination (GRE) general scores, and 4) provide the contact information for three individuals as references. To the department, the individual should send a statement of interest, detailing past experiences and reasoning for pursuing the non-thesis degree. Minimum requirements for admission include a GPA of 3.0 and a combined GRE score (verbal and quantitative) of 297.

Admission Procedure for International Applicants

The admissions standards are the same for both the thesis and non-thesis options. Admissions are open to all qualified graduates of accredited institutions. Admission materials are available through the Graduate Admissions Office. All prospective students should send to

the Graduate School: 1) a completed application, 2) two official transcripts from each institution of higher education attended, 3) Graduate Record Examination (GRE) general scores, 4) official TOEFL or IELTS scores not more than 2 years old, and 5) provide the names for three individuals as references. Admission materials are available through the Graduate Admissions Office. To the department, the individual should send a statement of interest, detailing past experiences and reasoning for pursuing the non-thesis degree. Minimum requirements for admission include a GPA of 3.0, a combined GRE score (verbal and quantitative) of 297, and minimum TOEFL or IELTS scores as outlines by the Graduate School.

Impact of Current Students

There would be no adverse impact on current M.S. degree students in the department. The programs of study of current students selecting the non-thesis option would have to reflect the new course requirements described above. Future students will have the option of selecting either the thesis or non-thesis option upon admission.

Financial Impacts

No new facilities or services will be required to implement a non-thesis option for the Poultry Science M.S. Degree. Two new courses (POUL 7001 and POUL 8310) have been developed for this program; however, these are independent research and internship courses that will not require additional funds or faculty time, since faculty are already directing students in this manner under other course numbers. In addition, with a recent influx of new faculty members, graduate courses are already being revamped and created that will prove valuable to students in a non-thesis option. Thus, no new funds are required.

Assessment

The Department of Poultry Science has recently implemented a robust assessment plan for the current thesis M.S. program, and a majority of those assessment criteria (only excluding the written thesis) will be applicable to the non-thesis students as well. Thus, we already have an assessment plan in place that would serve to assess the new non-thesis option within the M.S. program.

Approvals on File

Proposal: Offer the existing major in Poultry Science (M.S.) with a Non-Thesis Option

College: College of Agricultural and Environmental Sciences

Department: Poultry Science

Proposed Effective Term: Fall 2019

School/College:

- Department of Poultry Science Department Head, Dr. Todd Applegate, 7/9/2018
- College of Agricultural and Environmental Sciences Associate Dean, Dr. Josef Broder, 7/16/2018
- College of Agricultural and Environmental Sciences Dean, Dr. Samuel Pardue, 7/17/2018

Graduate School:

- Graduate School Dean, Dr. Suzanne Barbour, 10/18/2018