

**Program Development Plan  
Master in Animal Sciences**

**Department of Animal Sciences  
College of Food, Agricultural and Environmental Sciences  
The Ohio State University**

**1. Designation of the New Degree Program**

This proposal is developed and submitted for the designation of a professional degree, Master in Animal Sciences (MAS). This program aims to provide an applied, non-thesis degree for graduates and professionals. The program is aimed at students who want to increase their knowledge and competence at the graduate level in preparation of entering industry. Currently, the Animal Sciences department only offers a thesis degree option for students pursuing a Masters. Offering a non-thesis option is a better option for students who want to broaden their knowledge and experience for career preparation, but do not have goals of entering into academia or research professions. This program also will serve working professionals (members of state and federal agencies and allied Animal industries) who want to gain new knowledge concerning recent advancements in various subjects to advance their careers; and fulfill continuing education needs of science teachers as animal sciences is a subject area routinely taught by agriculture educators.

The MAS program is not intended to replace the traditional thesis masters option currently offered by the department. Selective admission of students and professionals to the program will ensure the MAS can offer a learning environment that is supportive of the applicant's career intentions. Flexibility of courses that emphasize Animal Sciences principles, business, communication, education, etc. is an important component of the program.

**2. Description of Proposed Curriculum**

The proposed curriculum requires a minimum of 35 credit hours of semester based instruction, a culminating paper, and a comprehensive written and oral examination administered by the advisory committee. Students complete a core of courses (9 credit hours) and select from a specialization in Animal Sciences (12 credit hours), Animal Nutrition (12 credits hours), or Meat Science (13 credit hours). Electives (14 credit hours) to complete the credit hour minimum are selected by the student and his/her advisory committee (Appendix A). There are existing courses within the Department of Animal Sciences that are suited for students pursuing this degree and electives may originate from outside the department as well, depending on the students' career intentions. It is anticipated that some students will have completed some courses within a specialization and will need to add courses from the other lists to meet the programs minimum credit requirement. Students are encouraged to select upper division graduate courses at the 6000 and above level as applicable. There also are opportunities for students to earn credit for specialized mentored experiences conducted with industry partners.

**Master of Animal Sciences Core Courses (9 credit hours)**

Every student pursuing the MAS degree program must complete the following courses:

<i>Course</i>	<i>Title</i>	<i>Credit hrs</i>
ANIMSCI 6000	Introduction to Graduate Studies in Animal Sciences	1 hr
ANIMSCI 6100	Research Interpretation and Writing in Animal Sciences	1 hr
ANIMSCI 7000	Applied Biometrics	3 hrs
ANIMSCI 888X <sup>1</sup>	Seminar	1 hr
ANIMSCI 8997 <sup>2</sup>	Graduate Writing Experience in Animal Sciences: Non-thesis	3 hrs

<sup>1</sup>Students may elect from one of five seminars offered (General, Nutrition, Physiology, Genetics, or Animal Products)

<sup>2</sup>Students must write a culminating paper relevant to their interest area. Subject area must be approved by the advisory committee (Appendix B). Alternatively, students may write a grant proposal aimed toward a specific Request for Proposal and federal funding agency.

In addition, students must select one of three specializations: Animal Sciences (12 credit hours), Animal Nutrition (12 credits hours), or Meat Science (13 credit hours), see approved courses below:

**Required Courses in Animal Sciences Specialization (12 hrs)**

Courses in the Animal Sciences specialization are aimed at expanding knowledge in basic areas of Animal sciences principles.

Select one from nutrition:

<i>Nutrition Courses</i>	<i>Title</i>	<i>Credit hrs</i>
ANIMSCI 5031	Ruminant Nutrition	3 hrs
ANIMSCI 5032	Non-ruminant Nutrition	3 hrs
ANIMSCI 5070	Nutritional Immunology in Animal Systems	3 hrs
ANIMSCI 5530	Comparative Animal Nutrient Metabolism	3 hrs

Select two from systems biology:

<i>Systems Biology Courses</i>	<i>Title</i>	<i>Credit hrs</i>
ANIMSCI 6060	Reproductive Physiology	3 hrs
ANIMSCI 6067	Physiology of Lactation	3 hrs
ANIMSCI 6090	Anaerobic Microbiology	3 hrs

Select one from tissue biology:

<i><b>Tissue Biology Courses</b></i>	<i><b>Title</b></i>	<i><b>Credit hrs</b></i>
ANIMSCI 5100	Advanced Growth and Development	3 hrs
ANIMSCI 5510	Advanced Meat Science	3 hrs

**Required Courses in Animal Nutrition Specialization (12 hrs)**

Courses in the Animal Nutrition specialization are aimed at expanding knowledge in nutrition across animal species.

Complete the following required courses:

<i><b>Course</b></i>	<i><b>Title</b></i>	<i><b>Credit hrs</b></i>
ANIMSCI 5031	Ruminant Nutrition	3 hrs
ANIMSCI 5032	Non-ruminant Nutrition	3 hrs
ANIMSCI 5070	Nutritional Immunology in Animal Systems	3 hrs
ANIMSCI 5530 <sup>1</sup>	Comparative Animal Nutrient Metabolism	3 hrs

<sup>1</sup>Requires course prerequisite

**Required Courses in Meat Science Specialization (13 hrs)**

Courses in the Meat Science specialization are aimed at expanding knowledge in tissue biology, processing, and food safety.

Complete the following required courses:

<i><b>Course</b></i>	<i><b>Title</b></i>	<i><b>Credit hrs</b></i>
ANIMSCI 5100	Advanced Growth and Development	3 hrs
ANIMSCI 5310	Auditing Processing Facilities	2 hrs
ANIMSCI 5410	Meat Industry Tour	2 hrs
ANIMSCI 5510	Advanced Meat Science	3 hrs
ANIMSCI 6510	Advanced Meat Technology	3 hrs

<sup>1</sup>Requires course prerequisite

**Electives (13-14 hrs)**

Elective courses are selected by the student and his/her advisory committee to reflect the personal interest and career intentions of the student. The following list is not all inclusive and additional courses offered at The Ohio State University may be considered as long as the student meets the course prerequisites and the course is approved by the advisory committee. Careful selection from the courses listed allows development in basic

knowledge areas (animal sciences, health and disease, and business), leadership, communication, and global awareness.

<i>Course</i>	<i>Title</i>	<i>Credit hrs</i>
<b>Departmental</b>		
ANIMSCI 5033	Feeding Management and Records Analysis for Cattle	3 hrs
ANIMSCI 5810	Branded Meat Products	4 hrs
ANIMSCI 6193 <sup>1</sup>	Individual Studies	3 hrs
ANIMSCI 7030	Advanced Topics in Ruminant Nutrition	3 hrs
ANIMSCI 7730 <sup>2,3</sup>	Endocrinology	4 hrs
ANIMSCI 8100	Advances in the Physiology of Domestic Animals	3 hrs
<b>College</b>		
AGRCOMM 5150	Communication Strategies for Change and Development	3 hrs
AGRCOMM 5170	International Development Theory and Practice	3 hrs
AGRCOMM 5190	Extension Education in Developing Countries	3 hrs
AEE 7230	Strategic and Program Planning for Visionary Change	3 hrs
AEE 7320	Adult Learning and Professional Development	3 hrs
AEE 7420	Emerging Trends and Issues in Agricultural and Extension Education	2 hrs
AEE 7520	Human Development and Program Planning	2 hrs
AEDECON 6010 <sup>2</sup>	Applied Microeconomics I	3 hrs
AEDECON 6020 <sup>2</sup>	Applied Microeconomics II	3 hrs
AEDECON 6200 <sup>2</sup>	Agriculture Policy and Trade	3 hrs
COMLDR 5335	Volunteer and Human Resource Management	3 hrs
COMLDR 5430	Professional Leadership Ethics	3 hrs
ENTOMLGY 7930	Scientific Writing and Grant Proposal Development	2 hrs
FDSCTE 5310	Food Quality Assurance	3 hrs
FDSCTE 5320	Food Laws and Regulation	2 hrs

FDSCTE 5420	Dairy Processing	3 hrs
FDSCTE 5536	Food Microbiology Lecture	3 hrs
FDSCTE 5546	Food Microbiology Laboratory	3 hrs

RURLSOC 5530	Sociology of Agriculture and Food Systems	3 hrs
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**University**

ANIMSCI 7761 <sup>2,4</sup>	Macronutrient Metabolism	3 hrs
ANIMSCI 7762 <sup>2,4</sup>	Vitamin and Mineral Metabolism	3 hrs

<sup>1</sup>Credit applied toward specialized mentored experiences conducted with industry partners following consultation with the advisory committee

<sup>2</sup>Requires course prerequisite or permission of the instructor

<sup>3</sup>Cross listed with Veterinary Medicine

<sup>4</sup>Crosslisted with Human Nutrition and Food Science and Technology. Students pursuing the Animal Nutrition Specialization are strongly encouraged to complete both ANIM SCI 7761 and 7762.

**Final Examination**

Each student will complete a final Master’s examination that includes both a written and oral component. The examination will evaluate the student’s proficiency and understanding of his/her field of study, with emphasis on the topic selected for the student’s culminating paper. The final examination is administered by the student’s advisory committee. A draft copy of the culminating paper must be submitted to the student’s advisory committee one week prior to the examination date for the written component. The written component will be a minimum of 4 h as set forth by the criteria established in The Ohio State University Graduate School Handbook. The oral component will be scheduled after satisfactory completion of the written component. Unanimous approval of the culminating paper and satisfactory completion of the written and oral components of the exam are required.

**Learning Goals**

Upon successful completion of this program students will:

- 1) demonstrate mastery of current knowledge in their field of study;
- 2) understand how to apply learned concepts and technology toward the advancement of the Animal sciences industries;
- 3) strengthen their written and oral communication skills;
- 4) be prepared to serve as professionals within their disciplines.

### 3. **Administrative Arrangement**

The MAS program will be administered by the Department of Animal Sciences Graduate Studies Committee. The committee is comprised of seven members: four elected Faculty members selected and voted into the committee by peer Faculty, the Department Chair as a voting member, the Graduate Program Coordinator as a non-voting member, and a Graduate Student Representative as a non-voting member. The committee will be chaired by the Graduate Studies Chair, elected among the four voting Faculty members. The Graduate Program Coordinator will be assigned to guide and oversee the administration of the program and report on applications to and enrollment in the program. It will be the responsibility of the Graduate Studies Committee to assess program applications and accept or deny applicants. The Graduate Program Coordinator will notify departmental faculty of students deemed admissible to the program and the Department Chair will facilitate selection of advisor based on the applicant's interest and future career plans.

### 4. **Evidence of Need**

Students interested in animal science based careers will face a growing complexity and diversity of the issues that span this global industry. The MAS will prepare students for positions of responsibility and leadership within the animal industries. Students that earn a master's degree are at an advantage for increased career opportunities, career advancement, and increased earnings.

Although less than 1% of the US population is currently engaged directly in agricultural production (2000 USDA Census), enrollment in Animal Sciences departments remains strong. The job outlook for graduates is promising as the Bureau of Labor and Statistics (2008) estimates employment for animal scientists to increase 13% by 2018. However, increased specialization within the animal industries demands graduates that are knowledgeable and skilled in specific science disciplines. The USDA (2010) estimates that 5% more college graduates will be needed with expertise in agriculture and food systems during 2010-2015, but project there will be a deficit in graduates skilled in the science and business of agriculture. There is a great need to offer students advanced training in the animal sciences to meet the projected employment demands.

Employment is predicted to increase 13 and 11%, respectively (BLS, 2008) for animal scientist employed in education and government. Conference proceedings from the American Association of Agriculture Education (2006) showed that K-12 agriscience teachers that hold a master's degree demonstrate greater intellectual stimulation and are more able to promote critical thinking and problem solving. Attainment of a Masters degree allows educators to increase content knowledge within a specialization, provides a venue in which educators can fulfill continuing education demands of their current position, and is a requirement for postsecondary teaching positions within universities. For graduates seeking employment with local, state, and federal government agencies a master's degree is equivalent to two years of experience and affords the individual increased career opportunities and earnings.

While there are Masters of Agriculture or Masters of Animal Sciences offered at other institutions nationally, the MAS proposed will be the first in our state system to our knowledge.

Historical enrollment in Animal Sciences MS and PhD graduate programs

	2007	2008	2009	2010	2011
Enrollment/yr; MS	14	15	18	27	26
Enrollment/yr; PhD	24	26	25	20	19

**5. Prospective Enrollment**

Applicants will be accepted throughout the year with a projected total of 50 students. Full-time students are expected to complete the program in 12 to 18 months and part-time students must complete the program within 5 years. No more than 20 students will be admitted into the program annually.

	Year 1	Year 2	Year 3	Year 4	Year 5
New enrollment/yr <sup>1</sup>	20	20	20	20	20
Total enrollment <sup>2</sup>	20	35	45	50	50

<sup>1</sup>New enrollment projections are predicted as additions to current graduate enrollment noted in section 4 for these programs. The MAS program is not anticipated to result in attrition from the Animal Sciences MS program, but represents a separate pool of applicants.

<sup>2</sup>Total enrollment assumes that 50% of students will complete the program in less than two years, 25% will complete between years two and three, and 25% will complete in years three and four to account for part-time enrollments into the program.

Candidates for admission into the program must satisfy all criteria set forth in section II.2 of The Ohio State University Graduate School Handbook:

1. an earned baccalaureate or professional degree from an accredited college or university by the expected date of entry
2. a minimum of a 3.0 cumulative point-hour ratio (on the 4.0 scale used at this university) in all previous undergraduate and graduate work
3. prerequisite training that will enable the student to pursue the graduate program to which admission is sought
4. a minimum score of 550 on the paper-based Test of English as a Foreign Language (TOEFL), 79 on the internet-based TOEFL, 82 on the Michigan English Language Assessment Battery (MELAB), or 7.0 on the International English Language Testing System (IELTS). This requirement applies only to an applicant from a country where the first language is not English, unless a bachelor's degree or higher was earned in an English-speaking country
5. additional criteria published by the Graduate Studies Committee of the local program

**Additional Admission Requirements.** Applicants must complete the Graduate Records Examination (GRE) with a score of 300 (verbal plus quantitative) or greater preferred. Students not meeting these requirements may be considered for conditional acceptance. The MAS program is not intended to replace the traditional thesis masters option currently offered by the department. Admission into the MAS program is selective and lateral transfer between the MAS and traditional thesis masters is not permitted. In the instance that a student in the MAS program would decide to pursue the traditional thesis masters, the student would be required to submit the *Request for Transfer of Graduate Programs* form available through the Graduate School. This form serves as the application to the program of interest and the Graduate School admissions office is not involved in the process. The Department of Animal Sciences Graduate Studies Committee will approve or deny transfer between programs. A maximum of 10 credit hours in which the student has earned a minimum grade of "B" are permitted for transfer to the desired program.

## 6. Enrollment of Underrepresented Groups

Targeted recruitment efforts increased underrepresented groups in the Department's undergraduate student population between 2008 and 2011 and similar efforts will be aimed at recruitment and retention of these groups in the graduate program. Activities will include publicizing the program to schools with substantial minority enrollments by communicating with faculty at these institutions; advertising the program at local, regional, and national conferences; highlighting the program on the departmental website and including statements from current or previous graduate minorities; and inviting prospective minority applicants to visit the department through programs including the Graduate/Professional Student Recruitment Initiative offered through the Office of Diversity and Inclusion.



**7. Faculty and Facilities Available**

The Department of Animal Sciences is represented by 30 faculty members with diverse teaching expertise (genetics, tissue biology and processing, physiology, nutrition, bioenergy and nutrient management, and microbiology with a species focus on cattle, equine, poultry, sheep, and swine). Courses are currently supported by teaching, animal, and processing facilities and therefore existing faculty and facilities will be sufficient for teaching and advising program enrollees.


**8. Need for Additional Facilities and Staff**

We do not project a need for additional facilities or staff. The existing Graduate Student Coordinator in the Department of Animal Sciences will coordinate applications to the program. As the majority of courses in the program are existing, additional facilities for classroom instruction are not required beyond the current demand. Courses considered for on-line delivery are not anticipated to increase staffing needs initially. Should enrollment increase significantly to warrant additional staffing, resources will be allocated to address these needs.

**9. Projected Additional Costs**

Excluding the Introduction to Graduate Studies in Animal Sciences course and the Research Methods and Writing course, all other courses are existing courses that are planned for the semester system. The two newly proposed courses are planned as distance learning course that will be available through Carmen and additional costs are not anticipated. Should enrollment increase significantly to warrant additional resources at added costs, the department will address these needs.

APPENDIX A



**Department of Animal Sciences**

**MAS**  
*Advisory Committee & Program of Study*

**Select MAS Specialization:**

	Check Box
Animal Sciences	<input type="checkbox"/>
Meat Science	<input type="checkbox"/>
Animal Nutrition	<input type="checkbox"/>

Date

Name

Address

City, State, Zip

Email

Expected date of graduation

**Core Course Work**

Course	AN SCI 6000	Credits	1 hr	Title	Introduction to Graduate Studies in Animal Sciences
Course	AN SCI 6100	Credits	1 hr	Title	Research Methods and Writing in Animal Sciences
Course	AN SCI 7000	Credits	3 hr	Title	Applied Biometrics
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	1 hr	Title	Seminar
Course	AN SCI 8997	Credits	3 hr	Title	Topics in Animal Sciences
		Total	9 hr		

**Specialization and Supporting Course Work** (minimum 26 credits)

Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
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Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
Course	<input style="width: 80px; height: 20px;" type="text"/>	Credits	<input style="width: 30px; height: 20px;" type="text"/>	Title	<input style="width: 95%; height: 20px;" type="text"/>
		Total	<input style="width: 50px; height: 20px;" type="text"/>		

Committee Members

<input type="text"/>	<input type="text"/>
Advisor, Print	Advisor, Signature
<input type="text"/>	<input type="text"/>
Committee Member, Print	Committee Member, Signature
<input type="text"/>	<input type="text"/>
Committee Member, Print	Committee Member, Signature

Date Submitted to Graduate Studies Committee

Date

Chair, Graduate Studies Committee

## APPENDIX B CULMINATING PAPER

### Guidelines

The culminating paper for the Master of Animal Sciences program is intended to provide students an opportunity to showcase their knowledge and competence in their field of study, while thinking critically about the situations and challenges of the industry.

1. Students must select a topic relevant to their field of specialization. For students pursuing the general Animal Sciences specialization, the topic must have a significant component in one of the discipline areas (nutrition, systems or tissue biology). The paper will involve analysis and synthesis of existing knowledge to explore a question or understand a current issue in animal sciences, in depth discussion of what is not known in the area and presentation of future implications for the field
2. Topics must be approved by the student's advisory committee and approval will require students to consider the relevance of the topic to his/her field of study and provide a detailed outline for the paper (Appendix B.1). The advisory committee will consist of the primary advisor (assigned by the Graduate Studies Committee) and two additional faculty members from the Department of Animal Sciences. The advisory committee should be selected early in the students program and must be determined prior to the student's final semester. The advisory committee is responsible for determining the appropriateness of the selected topic and whether it fulfills the requirements of the program, as well as a timeline for completion.
3. The culminating paper is eligible for 3 credit hours of satisfactory/unsatisfactory course credit. Registration for credit for the culminating paper is determined by the student and his/her advisory committee, but should coincide closely with the students intended completion of the program.
4. The final Master's examination that includes both a written and oral component will evaluate the student's mastery of his/her field of study, with emphasis on the topic selected for the student's culminating paper.

### Format Requirements

1. Organization of the paper is as follows: Title page, abstract, body of the text, references, appendix with figures and tables. Each division must be clearly titled. Primary titles should use upper case with the title centered and bold. Subtitles should be left justified and bold.

Title page: The title page is to include: 1) department and specialization; 2) full title; 3) students name and degree; 4) the statement *Presented in Partial Completion of Requirements for the Master of Animal Sciences Degree at The Ohio State University*; 5) advisors name and credentials; 6) advisory committees names and credentials; and 7) year of degree completion (Appendix B.2).

Abstract: The abstract is an informative presentation of significant findings not to exceed 300 words. The abstract should be able to stand alone and represent the body of the work.

Body: Provides a review of the literature relevant to the topic being addressed. The body of the text should include: 1) introduction; 2) current knowledge; and 3) future directions. In the introduction the question or issue to be addressed should be stated, the rationale behind topic selection introduced, and the context in which the topic will be discussed framed.

References: A complete reference section should be included at the end of the document. References should follow an acceptable format used in scientific journals.

Appendix: If applicable, figures, tables, and other supporting illustrations should be included in the appendix. Appropriate reference notation must be included when using previously authored materials.

2. Ideas are to be communicated in a clear, concise, and straightforward manner using the guidelines for scientific writing set forth by:

*Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers*. 7th edition, 2006.

3. Expectations concerning the length of the paper should be discussed between the student and his or her advisory committee. The length and content of the paper will vary depending on the scope of the selected topic, but in general, the body of the text should be a minimum of 20 pages.
4. The paper must be typed, double spaced, and with one inch margins on the top, right, left, and bottom. A 10 to 12 point, readable font should be selected and used consistently throughout the document.
5. Upon completion a bound printed copy and an electronic copy saved in pdf format must be submitted to the Graduate Student Coordinator.

Appendix B.1



Select MAS Specialization:

- Check Box
- Animal Sciences
  - Meat Science
  - Animal Nutrition

Date

Name

Address

City,State, Zip

Email

Title

Question/Issue

Relevance to Field of Study

Paper Outline

Committee Members

<input type="text"/>	<input type="text"/>
Advisor, Print	Advisor, Signature
<input type="text"/>	<input type="text"/>
Committee Member, Print	Committee Member, Signature
<input type="text"/>	<input type="text"/>
Committee Member, Print	Committee Member, Signature

Date Submitted to Graduate Studies Committee

Chair, Graduate Studies Committee Date

**Department of Animal Sciences**  
College of Food, Agricultural, and Environmental Sciences

Print Form

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Appendix B.2

DEPARTMENT OF ANIMAL SCIENCES  
MASTER OF ANIMAL SCIENCES: SPECIALIZATION

**TITLE**

Name, Degree(s)

Advisor Name, Degree(s)  
Committee Members Names, Degree(s)

Presented in Partial Completion of Requirements for the  
Master of Animal Sciences Degree  
at The Ohio State University

Date of Completion





**Department of Animal Sciences**

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May 21, 2012

**Master in Animal Sciences**

Attached is the edited proposal for the Master in Animal Sciences, which considers the feedback provided by the Graduate School Curriculum Committee (GSCC). The following concerns are addressed:

- 1) In general the program curriculum is heavily based on 5000 course, rather than upper level graduate courses. For example, the Animal Nutrition specialization is composed entirely of 5000 level courses. Some consideration should be given to strengthening the curriculum.

The MAS program allows students to tailor the curriculum toward industry demands and career intentions for job placement or advancement. While it is recognized that there are a number of 5000 level courses, the courses listed as requirements are the most appropriate to build the breadth and depth of knowledge needed in these areas for a Master in Animal Sciences. It was a decision of the Departmental Curriculum committee to list these courses at the 5000 level to not restrict more advanced undergraduate students from pursuing these studies, but these courses are intended and taught at a graduate level. To encourage enrollees of the graduate program to take advantage of more advanced topic areas, the following statement has been added to section 2. Description of Proposed Curriculum: "Students are encouraged to select upper division graduate courses at the 6000 and above level as applicable" The selection of 6000 and above level courses can be accomplished within the specialization for the Animal Sciences and Meat Sciences specializations, or through elective credits. For the Animal Nutrition Specialization the following statement "Students pursuing the Animal Nutrition Specialization are strongly encouraged to complete both ANIM SCI 7761 and 7762" has been added in the footnote descriptions for elective course considerations. The statement "The following list is not all inclusive and additional courses offered at The Ohio State University may be considered as long as the student meets the course prerequisites and the course is approved by the advisory committee" was included in the original MAS proposal as the courses listed as potential electives are only suggestions. The allowance of 13-14 credit hours of electives provide students ample opportunity to pursue more advanced graduate courses.

- 2) The composition of the Graduate Studies Committee was unclear. Is membership of the Department Chair *ex officio* (and hence four members of the committee elected)? Does the Department Chair have voting privileges? Is the Graduate Studies Chair elected among the four or five members or is the Department Chair the *de facto* Chair?

Section 3. Administrative Arrangement now states: “The MAS program will be administered by the Department of Animal Sciences Graduate Studies Committee. The committee is comprised of seven members: four elected Faculty members selected and voted into the committee by peer Faculty, the Department Chair as a voting member, the Graduate Program Coordinator as a non-voting member, and a Graduate Student Representative as a non-voting member. The committee will be chaired by the Graduate Studies Chair, elected among the four voting Faculty members. The Graduate Program Coordinator will be assigned to guide and oversee the administration of the program and report on applications to and enrollment in the program. It will be the responsibility of the Graduate Studies Committee to assess program applications and accept or deny applicants. The Graduate Program Coordinator will notify departmental faculty of students deemed admissible to the program and the Department Chair will facilitate selection of advisor based on the applicant’s interest and future career plans.”

- 3) The proposal states that the Chair will facilitate selection of the advisor based on the applicant’s interest. Is this reference to the Department Chair or the Graduate Studies Chair?

Under section 3. Administrative Arrangement, the original statement has been clarified and now states: “The Program Coordinator will notify faculty of students deemed admissible to the program and the Department Chair will facilitate selection of advisor based on the applicant’s interest and future career plans.”

- 4) There is a projected enrollment of 20 students per year. Are these students who would otherwise be applying to the existing Master of Science degree or is this a separate recruitment pool of applicants?

Under section 5. Prospective enrollment, the following statement has been included in the table footnote “<sup>1</sup>New enrollment projections are predicted as additions to current graduate enrollment noted in section 4 for these programs. The MAS program is not anticipated to result in attrition from the Animal Sciences MS program, but represent a separate pool of applicants.”

- 5) Reference is made to proceedings from the American Association of Agriculture Education (2006) demonstrating the 45% of education leaders hold a Master’s degree. The demographics of this group is unclear (does it include extension, consultants, technical/vocational schools?). Nor was it clear if education statistics do indeed provide justification for the need of an Animal Science degree.

The referenced paragraph under section 4. Evidence of Need now states: “Employment is predicted to increase 13 and 11%, respectively (BLS, 2008) for animal scientist employed in education and government. Conference proceedings from the American Association of Agriculture Education (2006) showed that K-12 agriscience teachers that hold a master’s degree demonstrate greater intellectual stimulation and are more able to promote critical thinking and problem solving. Attainment of a Masters degree allows educators to increase content knowledge within a specialization, provides a venue in which educators can fulfill continuing education demands of their current position, and is a requirement for postsecondary teaching positions within universities. For graduates seeking employment with local, state, and federal government agencies a master’s degree is equivalent to two years of experience and affords the individual increased career opportunities and earnings.”

- 6) The section of enrollment of under-represented minorities seemed both underdeveloped and unclear. Reference is made to a 2003 article in the Journal of Animal Sciences that suggested that salary inequities between minorities and non-minorities would drive minority recruitment, ironically suggesting that being paid less was a motivating factor. Additionally, targeted recruitment efforts are not explicitly mentioned.

Section 6. Enrollment of Underrepresented Groups now states “Targeted recruitment efforts increased underrepresented groups in the Department’s undergraduate student population between 2008 and 2011 and similar efforts will be aimed at recruitment and retention of these groups in the graduate program. Activities will include publicizing the program to schools with substantial minority enrollments by communicating with faculty at these institutions; advertising the program at local, regional, and national conferences; highlighting the program on the departmental website and including statements from current or previous graduate minorities; and inviting prospective minority applicants to visit the department through programs including the Graduate/Professional Student Recruitment Initiative offered through the Office of Diversity and Inclusion.”

- 7) Outdated scoring scales are used both for the GRE and the TOEFL exams.

Information regarding the TOEFL exam was copied directly from the Graduate School Handbook » Section II » 2.2—Admission Criteria for the semester system. A minimum GRE of 300 is now listed to reflect the new scoring scales and departmental requirements.

- 8) Concurrence letter from Microbiology and Veterinary Medicine should be obtained for their contribution to elective courses.

These courses have been omitted from the electives list as the courses listed are only suggested electives and not required in any of the specializations.

- 9) It was unclear, given the time commitment for on-line courses if there is a need to hire additional staff.

Additional staffing is not anticipated at this time. Should enrollment increase significantly to warrant additional staffing, resources will be allocated to address these needs. The following statement has been added to section 8. Needs for Additional Facilities and Staff: “Courses considered for on-line delivery are not anticipated to increase staffing needs initially. Should enrollment increase significantly to warrant additional staffing, resources will be allocated to address these needs.”

Sincerely,



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Associate Professor



Graduate School

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230 North Oval Mall  
Columbus, OH 43210-1366

Phone (614) 292-6031  
Fax (614) 292-3656

May 10, 2012

## Master in Animal Sciences

The Graduate School Curriculum Committee (GSCC) recently met and reviewed the proposal to create a new professional degree, Master in Animal Sciences. The degree will offer the choice of three transcriptable specializations in Animal Sciences, Animal Nutrition, or Meat Science. The degree requires 35 credit hours composed of core courses (9 credit hours), specialization core courses (12 to 14 hours,) and electives.

The GSCC found the proposal to be well written and interesting. Since this is a new degree proposal, it will ultimately need to be submitted to the Ohio Board of Regents for approval. In preparation for that submission, the committee felt that several aspects of the proposal could be clarified or strengthened. To facilitate the review process, I am providing feedback from the GSCC meeting which should be useful in restructuring the proposal.

- In general the program curriculum is heavily based on 5000 courses, rather than upper level graduate courses. For example, the Animal Nutrition specialization is composed entirely of 5000 level courses. Some consideration should be given to strengthening the curriculum.
- The composition of the Graduate Studies Committee was unclear. Is membership of the Department Chair *ex officio* (and hence four members of the committee are elected)? Does the Department Chair have voting privileges? Is the Graduate Studies Chair elected among the four or five members or is the Department Chair the *de facto* Chair?
- The proposal states that the Chair will facilitate selection of the advisor based on the applicant's interest. Is this reference to the Department Chair or the Graduate Studies Chair?
- There is a projected enrollment of 20 students per year. Are these students who would otherwise be applying to the existing Master of Science degree or is this a separate recruitment pool of applicants?
- Reference is made to proceedings from the American Association of Agriculture Education (2006) demonstrating that 45% of education leaders hold a Master's degree. The demographics of this group is unclear (does it include extension, consultants, technical/vocational schools?). Nor was it clear if education statistics do indeed provide justification for the need of an Animal Science degree.
- The section of enrollment of under-represented minorities seemed both underdeveloped and unclear. Reference is made to a 2003 article in the Journal of Animal Sciences that suggested that salary inequities between minorities and non-minorities would drive minority recruitment, ironically suggesting that being paid less was a motivating factor. Additionally, targeted recruitment efforts are not explicitly mentioned.
- Outdated scoring scales are used for both the GRE and the TOEFL exams.

- Concurrence letters from Microbiology and Veterinary Medicine should be obtained for their contribution to the electives courses.
- It was unclear, given the time commitment for on-line courses, if there is a need to hire additional staff.

Please revise the proposal with these comments in mind and resubmit it to the GSCC for their re-review. It is the expectation of the committee that the strengthened proposal will facilitate its statewide approval process. The committee supports the formation of this new degree.

Please don't hesitate to contact me with questions or clarifications.

Many thanks,



Scott Herness  
Associate Dean



Graduate School

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June 13, 2012

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Pasha Lyvers Peffer  
Dept of Animal Sciences, CFAES

## Master in Animal Sciences

Pasha,

The Graduate School Curriculum Committee (GSCC) recently met and reviewed the revised proposal you recently submitted to create a new professional degree, Master in Animal Sciences. The Committee felt the revised proposal was very responsive to its previous comments (May 10, 2012), was now strengthened in a manner that will facilitate its statewide approval, and was satisfied with the revision. The committee supports the formation of this new degree in its present form.

However, one lingering significant question remains and should be discussed before the proposal moves forward along the approval process. This degree is viewed as a textbook candidate for the Professional Science Masters. In its present form the degree could ultimately be approved as a Master's degree, but it lacks several significant components that would be required for the Professional Science Masters (PSM).

If the ultimate goal is to develop a PSM, now would be the appropriate time to fully develop the curriculum in this manner. This would not only simplify but additionally strengthen all subsequent review processes. If, on the other hand, the intent is to develop two degrees, one a Master's and one a Professional Science Masters, we could proceed with the present proposal. The Graduate School Curriculum Committee favored the former option, though it clearly involves more effort.

I would like to discuss you goals with this degree and we can strategize a path to accomplish it.

Many thanks,

A handwritten signature in black ink that reads 'Scott Herness'.

Scott Herness  
Associate Dean

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