

Meat Science and Muscle Biology Graduate Program (Beginning Sept 1, 2004)

Graduate School Requirements

MS (16 credits) PhD (32 credits)

i) includes research credits, ii) ≥ 300 level, iii) UW-Madison credits only

Meat Science and Muscle Biology Requirements

Courses to be taken as graduate student at UW-Madison (minimum of 12 credits for MS and 18 credits for PhD)

AHBS	500	Molecular Biology Techniques	3
AHBS	528	Immunology	3
AHBS	529	Immunology Laboratory	2
Anatomy	619	Microscopy of Life	3
Anatomy	710	Histology and Organology	5
Animal Sci	305*	Introduction to Meat Science and Technology*	4
Animal Sci	508*	Poultry Products Technology*	3
Animal Sci	515*	Commercial Meat Processing*	2
Animal Sci	500 & up	Other Animal Science courses	var.
Animal Sci	725**	Muscle Biology**	2
Bacteriology	324	Food Bacteriology Laboratory	2
Bacteriology	325	Food Bacteriology	3
Bacteriology	526	Physiology of Microorganisms	3
Bacteriology	527	Physiology of Microorganisms Laboratory	2
Bacteriology	607	Advanced Microbial Genetics	3
Biochemistry	501	Introduction to Biochemistry	3
Biochemistry	507	General Biochemistry	3
Biochemistry	508	General Biochemistry	3
Biochemistry	510	Biochemical Principles of Human and Animal Nutr.	3
Biochemistry	550	Topics in Medical Biochemistry	2
Biochemistry	601	Protein and Enzyme Structure and Function	2
Biochemistry	602	Biochemical Mechanisms of Regulation in the Cell	2
Biochemistry	603	Eukaryotic Molecular Biology	2
Biochemistry	604	Chemical Biology	2
Biochemistry	620	Eukaryotic Molecular Biology	2
Biochemistry	630	Cellular Transduction Mechanisms	3
Biochemistry	636	Crystallography and Dynamics	2
Biochemistry	651	Biochemical Methods	2
Biochemistry	660	Methods in Biochemistry	2
Biochemistry	702	Biochemical Mechanisms of Regulation in the Cell	3
Biochemistry	711	Sequence Analysis	2
Biochemistry	712	Sequence Analysis Laboratory	1
Biochemistry	724	Mechanisms of Enzyme Action	2
Biom. Chem.	710	Exploring Biochem. Functions of Macromolecules	2
Biom. Chem.	711	Exploring Biochem. Functions of Macromolecules	2
Chemistry	343	Introduction to Organic Chemistry	3
Chemistry	344	Introductory Organic Chemistry Lab	2
Chemistry	345	Intermediate Organic Chemistry	3
Chemistry	346	Intermediate Organic Chemistry Lab	1-2

Chemistry	565	Biophysical Chemistry	4
Chemistry	621	Instrumental Analysis	3-4
Chemistry	843	Free Radical chemistry (Adv.Organic)	2
Food Sci	310	Analysis of Food Products	4
Food Sci	410	Food Chemistry I	3
Food Sci	440	Principles of Food Engineering	3
Food Sci	464	Statistics for for Food Industry Quality Control	3
Food Sci	512	Principles of Food Chem Lab	2
Food Sci	514	Food Chemistry II	2
Food Sci	530	Food Processing I	2
Food Sci	532	Food Processing II	3
Food Sci	542	Food Engineering Operations	4
Food Sci	610	Food Proteins	2
Food Sci	612	Food Enzymes	2
Food Sci	642	Food and Pharmaceutical Separations	2-3
Food Sci	650	Advanced Microbiology of Foodborne Pathogens	3
Food Sci	710	Chemistry of Food Lipids	2
Food Sci	714	Food Flavors	1
Food Sci	718	Colloids Chemistry of Foods	2
Genetics	610	Quantitative Genetics	3
Genetics	701	Advanced Genetics	2
History	333	History of Modern Biology	2
History	343	The Darwinian Revolution	2
Nutri Sci	672	Herbal Homeopathy, & dietary supple	3
Oncology	401	Intro-Experimental Oncology	2
Path	750	Cell and Mol Bio/pathology	3
Pathol	751	Cell and Molecular Biology of Aging	3
PI Path	800	Inquiry based Biology Teaching	1
Philos	520	Philosophy of the Natural Sciences	3
Philos	523	Philosophical problems of the biological sciences	3
Phm Sci	491	NMR Spectroscopy	2
Phm Sci	492	Mass Spec in Health Sci	2
Physiology	533	Molecular Physiology	2
Physiology	615	Cellular Physiology	4
Physiology	720	Human Physiology	7
Statistics	571***	Statistical Methods for Bioscience I***	4
Statistics	572	Statistical Methods for Bioscience II	4
Zoology	430	Comparative Anatomy of Vertebrates	5
Zoology	470	Introduction to Animal Development	3
Zoology	570	Cell Biology	3
Zoology	572	Cell Biology Laboratory	3
Zoology	611	Comparative and Evolutionary Physiology	3
Zoology	612	Comparative and Evolutionary Physiology Lab	2

* Only one course from the group of AS305, AS 508, and AS 515 courses can be counted towards the credit load required in this section.

** Required of PhD candidates.

*** Required if an equivalent statistics course was not taken previously.

III. Required at UW-Madison

Course	M.S.	Ph.D.
Seminar****	1 credit	1 credit
Teaching practicum	Not applicable	2 credits

**** Seminar can be 1) a general scientific topic of interest, or 2) a seminar directly related to the thesis research of the student.

Timetable M.S.

-Within 1 year of starting their program, the MS candidate should a) establish their committee members, and b) set up a committee meeting to pick a set of courses that will fulfill their course requirements and generally discuss research focus.

-Research proposal should be presented to committee members sometime in their 2nd year

Timetable Ph.D.

-Within 1 year of starting their program, the PhD candidate should a) establish their committee members, and b) set up a committee meeting to pick a set of courses that will fulfill their course requirements and generally discuss research focus.

-Preliminary exam for Ph.D. candidates (their research proposal) should take place in their 2nd year.

-Progress of research proposal should be presented to committee members once in 3rd year and each subsequent year prior to setting defense date.

Committee members

At least 3 committee members are required for M.S. For Ph.D. candidates, 5 members and 1 member of the committee must be from outside the Animal Science department.

Ph.D Minor (can be distributed between up to 3 departments)

-10 credits needed (count towards the 18 credit minimum requirement).

-must be \geq 300 level

-The 10 credits should have a common theme for the distributed minor.

-Minor needs to be approved by the Graduate School.

Preliminary Exam

A research proposal exercise: a) statement of research program (what is novel about your work), b) brief literature review, c) Well defined objectives (hypotheses), d) Experimental design and approach, e) Contingency plans in the event of failure of your approach to this research.

Example Ph.D. Program

For major: Animal Science 725 Muscle Biology (2)
 Statistics 571 Statistical Methods for Bioscience I (4)

For minor: Physiology 720 Principles of Human Physiology (7)
 Anatomy 710 Histology and Organology (5)