

GRADUATE COURSES

- A selection of courses from which graduate students in the Department of Dairy Science commonly build their individual programs.
- Course and credit requirements can be found at: <http://www.dasc.vt.edu/images/gradpicy.pdf>
- Additional courses and details can be found on the university Timetable: https://banweb.banner.vt.edu/ssb/prod/HZSKVTSC.P_DispRequest

ANIMAL SCIENCE COURSES

Course #	Course
ALS 5144	Molecular Aspects of Nutrition and Disease (odd years)
ALS 5304	Advanced Physiology and Anatomy of Domestic Animals (5 credits)
ALS 5984	Basic Concepts of Nutrition I (3 credits) – Digestive systems and Carbohydrates, lipids, and energy
ALS 5984	Basic Concepts of Nutrition II (3 credits) – Protein and Amino Acid Metabolism, and Vitamins and Minerals
DASC 5474	Dairy Management Decisions (even years)
ALS 5984	SS:Digestn & energy metabolism
ALS 6024	Topics in Molecular Cell Biology and Biotechnology (variable credit)
Biol 4474	Ethology
ALS 5984	Basic Concepts of Nutrition II (3 credits)
ALS 6314	Endocrinology
ALS 6324	Advanced Neurochemical Control
ALS 5054	Methodology in Nutrition Research (odd years)
CSES 4754	Instrumental Analysis for Ag and Environmental Sciences
CSES 5544	Soil-plant-animal interrelationships in grasslands (3 credits)

Seminars (1 credit, both semesters unless otherwise indicated)

Course #	Course
ALS 5064	Seminar in Molecular Cell Biology and Biotechnology
DASC 5004	Dairy Science Seminar
ALS 5094	Effective Grant Writing Biomed
ALS 5004	Animal Nutrition Seminar
DASC 5084	Advanced Ruminant Nutrition Colloquium (aka “Journal club”)
STS 5444	Issues in Bioethics (3 credits)

GRADUATE COURSES**STATISTICS, BIOCHEM, ETC**

Course #	Course
STATS 5615	Statistics for Research
BCHM 5124	Life Sciences Biochemistry
CHEM 3114/3124	Analytical Chemistry + lab
STATS 5634	Statistics for behavioral sciences
STATS 6504	Experimental design and analysis II (5616/5204 are pre-reqs)
STATS 4214	Methods of regression analysis (some stats, i.e. 5615 a pre-req).
STATS 5616	Statistics for research
ALS 5984	SS:Mgt data from animal exprmt
ALS -5984	SS:Bas Analys Animal Exper SAS
STATS 5204	Experimental design and analysis I (5616 is a pre-req)
STATS 5634	Statistics for behavioral sciences

Waste Management/Treatment

Course #	Course
Biol/CEE 4154	Microbiology of Aquatic Systems
BSE 4304	Nonpoint source pollution modeling and mgmt
BSE 5304	Nonpoint source pollution (3 credits)
CEE 4104	Water & Wastewater treatment design
CEE 5104 & 5704	Environmental Chemistry (3 credits) plus lab (1 credit)
CEE 5134	Engineering aspects of water quality
BSE 5134	Land application of wastes (3 credits; even years)
CEE 5184	Techniques for Environmental Analysis (3 credits)
CEE 5194	Environmental Engineering Microbiology (3 credits)

Immunology/Microbiology

Course #	Course
BIOL 4704	Immunology (3 credits)
BMVS 5284	Cellular Pathology (3 credits)
DASC 5984	SS:Mammary Immunology
BMVS-5044	Veterinary Immunology
BMVS-6554	Advanced Epidemiology
BIOL 6704	Topics in Immunology (3 credits)
BIOL 4624	Microbial Genetics (3 credits)
BMVS 5005	Emerging Infectious Diseases
BIOL -5984	SS:Innate Immunity/Inflammatn (3 credits)
BIOL 4674	Pathogenic Bacteriology (3 credits)

GRADUATE COURSES**TA Opportunities**

Course #	Course
ALS-2504	Animals in Society
DASC 3274	Applied Dairy Cattle Nutrition
ALS-2304	Anatomy & Physiology
ALS 3204	Animal Nutrition and Feeding
ALS-5304	Adv Phys Domestic Animals
DASC-3474	Dairy Information Systems
DASC 4475/6	Dairy Enterprise Management
ALS 6314	Endocrinology
DASC 4074	Professional Development
ALS 2304	Animal Physiology and Anatomy