ANIMAL SCIENCE TO MS TRACK

	Animal Science	Credits
R1 Biology Courses (10 credits)	General Biology I (01:119:115), 4 cr	4
	General Biology II (01:119:116), 4 cr	4
	Biological Research Lab (01:119:117), 2 cr	2
R2 Chemistry Courses (9 credits)	General Chemistry I (01:160:161), 4 cr	4
	General Chemistry II (01:160:162), 4 cr	4
	Introduction to Experimentation (01:160:171), 1 cr	1
R3 Organic Chemistry Courses (10 credits)	Organic Chemistry I (01:160:307), 4 cr	4
	Organic Chemistry II (01:160:308), 4 cr	4
	Organic Chemistry Laboratory (01:160:311), 2 cr	2
R4 Animal Science Core Courses (16-17 credits)	Animal Science (11:067:142), 3 cr	3
	Integrative Physiology (11:067:300), 4 cr	4
	OR	
	Systems Physiology (01:146:356), 3 cr	
	Animal Reproduction (11:067:327), 3 cr	3
	Animal Nutrition (11:067:330), 3 cr	3
	Animal Nutrition Lab (11:067:331), 1 cr	1
	Genetics (01:447:380), 4 cr	
	OR	
	Animal Genetics (11:067:328), 3 cr	3

R5 Option-Specific Core Courses **14 credits**	General Biochemistry I (11:115:403), 4 cr	4
	General Biochemistry II (11:115:404), 3 cr	3
	General Microbiology (11:680:390), 4 cr	4
	OR	
	General Microbiology (11:447:390), 4 cr	
	And	
	Basic Statistics for Research (01:960:401), 3 cr	3
R6 Math **(4 credits)**	Calculus I (01:640:135), 4 cr	4
	OR	
	Calculus for Mathematical and Physical Sciences (01:640:151), 4 cr	
R7 Prevet Electives (300-400 Level) **(Choose 3 electives, 9 cr)**	Advanced Equine Health Care & Management (11:067:398), 3 cr	9
	Endocrinology (11:067:450) 4 cr	
	Equine Nutrition (11:067:390), 3 cr	
	Pathophysiology (11:067:490) 3 cr	
	Animal Behavior (11:216:441) 3 cr	
	Comparative Mammalian Anatomy (11:067:391) cr 3	
	Animal Microtechniques and Tissue Culture (11:067:430) cr 4	
	Immunology (01:146:474) cr 3	
	Med Vet Entomology (11:370:406) cr 3	
	Animal Diseases (11:067:404), 3 cr	

R8 EBE **(7 credits)**	Animal Handling, Fitting and Exhibition (11:067:175), 1 cr	7
	Animal Handling, Fitting and Exhibition Supervisors(11:067:176), 1 cr	
	Cattle Practicum (11:067:201), 2 cr	
	Small Ruminant Practicum (11:067:202), 2 cr	
	Swine Practicum (11:067:203), 2 cr	
	Laboratory Animal Practicum (11:067:205), 2 cr	
	Horse Practicum (11:067:207), 2 cr	
	SEBS Internship (11:902:300/301), 3-6 cr	
	Studies in Animal Science (11:067:411), variable cr	
	Teaching in Animal Science (11:067:414), variable cr	
	Leadership in Animal Science (11:067:415), variable cr	
	Research in Animal Science (11:067:493/494), variable cr	
	GH Cook Scholars Program (11:015:497/498), variable cr	
	Dairy Cattle AI (11:067:322), 1 cr	
	Animal Evaluation and Selection (11:067:260), 3 cr	
R9 Animal Science Electives (100-400 level) **(Choose 2 electives, 6 cr)**	Companion Animal Science (11:067:250), 3 cr	6
	Comparative Mammalian Anatomy (11:067:391) cr 3	
	Careers in Animal Science (11:067:101), 3 cr	
	Lab Animal Science: Management and Techniques (11:067:275), 3 cr	
	Equine Nutrition (11:067:390), 3 cr	
	Domestic Animal Behavior and Welfare (11:067:310), 3 cr	
	Dairy Cattle Artificial Insemination (11:067:322), 1 cr	
	Comparative Mammalian Anatomy (11:067:391), 3 cr	
	Animal Microtechniques and Tissue Culture (11:067:430), 4 cr	
	Endocrinology (11:067:450), 4 cr	

	Animals and the Law (11:067:460), 3 cr	
	Pathophysiology (11:067:490), 3 cr	
	TOTAL CREDITS	**86**
Graduate Course (5th year)	**At least 1 course from each core area - 30 total credits**	**Credits**
Core 1: Endocrinology	16:340:510 Neuroendocrinology (4)	2 or 4
	16:340:612 Recent Advances in Endocrinology (2)	
	16:340:591 Reproductive and Developmental Toxicology (4)	
Core 2: Physiology	16:963:512 Integrative Organ Physiology (3)	4
	16:709:552 Nutrition: A Biochemical and Physiological Basis (4)	
	16:709:553 Nutrition: A Biochemical and Physiological Basis (4)	
	16:107:603 Advanced Exercise Physiology (4)	
Core 3: Molecular Biology/Biochemistry	16:340:592 Molecular and Cellular Physiology (3)	3-4
	16:115:503 General Biochemistry (4)	
	16:115:504 General Biochemistry (4)	
	11:115:511 Molecular Biology and Biochemistry (4)	
	11:115:512 Molecular Biology and Biochemistry (4)	
Core 4: Statistics	16:115:557 Statistics in Biomedical Science (3) (Fall)	3
	01:960:401 Basic Statistics for Research (3)	
	PHCO 0504 Introduction to Biostatistics (3) (RBHS SPH)	
Seminar	16:340:693 Seminar in Endocrinology and Animal Bioscience (1)	2
	16:340:694 Seminar in Endocrinology and Animal Bioscience (1)	
	16:115:556 *Ethical Scientific Conduct* (1) (Spring)	
Undergraduate Courses (taken Y3-4) **6-8 credits count for MS**	11:067:450 Endocrinology (4)	6-8
	11:067:490 Pathophysiology (3)	
	11:067:404 Animal Diseases (3)	
	11:067:391 Comparative Mammalian Anatomy (3)	
	11:067:430 Animal Microtechniques and Tissue Culture (4)	

Additional Courses of Interest	01:146:474 Immunology (3)	6
Other electives may be added	16:681:502 Molecular Genetics (3)	
	16:681:585 Cancer Molecular Biology (3)	
	16:709:506 Nutritional Aspects of Disease (3)	
	16:963:603 Advanced Problems in Toxicology (1) Fall	
	16:963:631 Toxicological Pathology (3) Spring	
	16:340:508 Equine Exercise Physiology (3) Spring/odd years	
	16:572:510 Advanced Applied Human Physiology (3) Fall	
	16:572:511 Neurophysiology of Health (3) Spring	
	Credits for MS portion	**30**