**VETERINARY AND BIOMEDICAL SCIENCES (VBMS)**

**VBMS 303 Principles and Prevention of Livestock Diseases**
- **Prerequisites:** Juniors and seniors; ASCI 240 or ASCI 340 or BIOS 213 and BIOS 213L.
- **Notes:** BIOS 300 or BIOS 312 recommended.
- **Description:** Management techniques in the control of metabolic, infectious, and parasitic diseases of domestic animals and understanding of basic concepts of the important diseases of livestock.
- **Credit Hours:** 3
- **Max credits per semester:** 3
- **Max credits per degree:** 3
- **Grading Option:** Graded with Option

**VBMS 403 Integrated Principles and Prevention of Livestock Diseases**
- **Prerequisites:** ASCI 340 or BIOS 213 and BIOS 213L, BIOS 312, CHEM 251.
- **Notes:** Capstone course.
- **Description:** Emphasizes integrated management techniques of livestock, and understanding the basic integrated concepts of the important diseases of domestic animals. Biotechnology in animal health and current issues in management practices to control diseases.
- **Credit Hours:** 4
- **Max credits per semester:** 4
- **Max credits per degree:** 4
- **Grading Option:** Graded with Option

**ACE 10 Integrated Product**

**VBMS 407 Introduction to Veterinary Anatomy**
- **Prerequisites:** LIFE 120 & LIFE 120L and LIFE 121 & LIFE 121L or equivalent.
- **Description:** Gross anatomy of the mammalian body, using domestic dog as the model. Macroscopic anatomy of organs and organ systems emphasizing structural and functional relationships, and their contribution to homeostasis of domestic animals. Incorporates detailed study of prosected cadavers and skeletal preparations.
- **Credit Hours:** 4
- **Max credits per semester:** 4
- **Max credits per degree:** 4
- **Grading Option:** Graded with Option
- **Offered:** SPRING

**VBMS 408 Functional Histology**
- **Crosslisted with:** BIOS 408, BIOS 808, VBMS 808
- **Prerequisites:** BIOS 101 and 101L or LIFE 120 and 120L or BIOS 112; BIOS 213 or ASCI 240 or ASCI 340.
- **Description:** Microscopic anatomy of the tissues and organs of major vertebrate species, including humans. Normal cellular arrangements of tissues and organs as related to their macroscopic anatomy and function, with reference to sub-cellular characteristics and biochemical processes. Functional relationships among cells, tissues, organs and organ systems, contributory to organismal well being. General introduction to pathological processes and principles underlying some diseases.
- **Credit Hours:** 4
- **Max credits per semester:** 4
- **Max credits per degree:** 4
- **Grading Option:** Graded with Option

**VBMS 410 General Pharmacology and Toxicology**
- **Prerequisites:** BIOS 213, ASCI 240, or ASCI 340; BIOC 401 or BIOC/BIOS/CHEM 431/831; or equivalent.
- **Notes:** Recommended: CHEM 252 and 254; BIOC/BIOS/CHEM 432/832 and 433/833.
- **Description:** Basic principles and sciences of drug action (as therapeutic agents) and of adverse (toxic) effects of harmful chemical substances. Discussion of these concepts as they relate to animal production and care, regulatory concerns, legal and ethical decisions, human and animal health hazards, food safety, and environmental contamination.
- **Credit Hours:** 3
- **Max credits per semester:** 3
- **Max credits per degree:** 3
- **Grading Option:** Graded with Option
- **Offered:** FALL

**VBMS 424 Basic Molecular Infectious Diseases**
- **Crosslisted with:** VBMS 824
- **Prerequisites:** BIOS 312.
- **Notes:** Offered spring semester of odd-numbered calendar years.
- **Description:** Introduction to the molecular, genetic and cellular aspects of microbial pathogenesis in humans and animals. Critical reviews of original scientific literature and development of manuscript and proposal writing.
- **Credit Hours:** 3
- **Max credits per semester:** 3
- **Max credits per degree:** 3
- **Grading Option:** Graded with Option
- **Offered:** SPRING

**VBMS 441 Pathogenic Microbiology**
- **Crosslisted with:** BIOS 441, BIOS 841, VBMS 441H, VBMS 841
- **Prerequisites:** BIOS 312
- **Description:** Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.
- **Credit Hours:** 3
- **Max credits per semester:** 3
- **Max credits per degree:** 3
- **Grading Option:** Graded with Option
- **Prerequisite for:** VBMS 805; VBMS 949

**VBMS 441H Pathogenic Microbiology**
- **Crosslisted with:** BIOS 441, BIOS 841, VBMS 441, VBMS 841
- **Prerequisites:** BIOS 312
- **Description:** Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.
- **Credit Hours:** 3
- **Max credits per semester:** 3
- **Max credits per degree:** 3
- **Grading Option:** Graded with Option
- **Prerequisite for:** VBMS 805; VBMS 949
VBMS 441L Pathogenic Microbiology Laboratory
Crosslisted with: VBMS 841L
Prerequisites: BIOS 312.
Description: Application of diagnostic microbiological techniques to
the isolation, propagation and identification of common pathogens of
human beings and animals. Case studies used, in the laboratory setting,
to explore and test fundamentals of transmission, epidemiology and
pathogenesis of selected infectious agents and to relate these to disease
signs, treatments and methods of control.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded with Option

VBMS 488 Exploration of Production Medicine
Prerequisites: Acceptance to an accredited college of veterinary
medicine.
Description: Introduction to production medicine and animal
health management that weaves together the interrelationship of
pasture ecology, animal nutrition, animal well-being, environmental
assessment, worker safety, and pre-harvest food safety. Emphasis on
the interrelationships between scientific disciplines, and sustainable
agriculture. Assessment of normal production potential and health of
food producing animals (beef cattle, swine, and sheep) and indicators
of abnormal health. Introduction to techniques used to evaluate animal
well-being, to computerized information management, and to the
veterinarian's role in sustainable agriculture.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded with Option

VBMS 496 Independent Study in Veterinary Science
Prerequisites: 12 hrs veterinary science or closely related areas and
permission.
Description: Individual or group projects in research, literature review,
or extension of course work under supervision and evaluation of a
departmental faculty member.
Credit Hours: 1-5
Min credits per semester: 1
Max credits per semester: 5
Max credits per degree: 12
Grading Option: Graded with Option

VBMS 499H Honors Thesis
Prerequisites: Admission to the University Honors Program and
permission.
Notes: AGRI 299H recommended.
Description: Conduct a scholarly research project and write a University
Honors Program or undergraduate thesis.
Credit Hours: 3-6
Min credits per semester: 3
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Graded