

## APPENDIX 2

### Required Courses for Graduate Students/Residents in the Department of Clinical Sciences

**VS 628 Physiology and Pathophysiology (3 credits).** This graduate level physiology course covers advanced physiology of all the major organ systems and is required for all residents.

**VS 792 Graduate Seminar (1 credit)** – Residents are required to register for this course during 4 semesters of their program. They will be required to give 2 presentations during these 4 semesters. Grades are pass/fail and an attendance policy is mandated by the course coordinator.

**VS 662 – Applied Research – Planning/Design/Analysis.** This course is designed to train students in the application of statistical tests and to conceptualize and execute an independent research project. This course or another statistics course (ST 511; see below) is required for all residents.

**OR**

**STAT 511 Design and Data Analysis for Researchers (3 credits).** This course is designed to teach statistical methods for experimenters and researchers emphasizing design and analysis of experiments.

Prerequisite: A basic statistics course or written consent of instructor. This can be taken as an alternative to VS 662.

### Suggested Courses for Graduate Students/Residents in the Department of Clinical Sciences

**VS 701, VS 702, VS 703, VS 704 – Postgraduate Medicine I – IV (1-3 credits).** This is a 2 year (4 semester) sequence of courses providing a comprehensive review and update of the pathophysiology and medical management of important diseases of various organ systems. The topics covered in VS 701 (Postgraduate Medicine I) include immunology, emergency medicine, dermatology, and endocrinology. The topics covered in VS 702 (Postgraduate Medicine II) include neurology, gastroenterology, and ophthalmology. Topics covered in VS 703 (Postgraduate Medicine III) include oncology, cardiology, reproduction, and radiology. Topics covered in VS 704 (Postgraduate Medicine IV) include: hematology, nephrology, urology, respiratory system, hepatic diseases, and pancreatic diseases.

**VS 650 Comparative Abdominal Surgery (3 credits).** This course is recommended for all large animal and small animal surgery residents. It covers surgical conditions and general topics pertaining to the gastrointestinal and urogenital systems.

**VS 673 Thoracic and Cardiovascular Surgery (3 credits).** This course is recommended for all large animal and small animal surgery residents. Reviews cardiovascular and pulmonary physiology and covers surgical approaches to the thorax and the central and peripheral cardiovascular system.

**VS 612 Plastic and Reconstructive Surgery (3 credits).** This course is recommended for all large animal and small animal surgery residents. Covers wound healing and advances in patient care, surgical instrumentation and reconstruction procedures of the skin.

**VS 630 Orthopedic Surgery (3 credits).** This course is recommended for all large animal and small animal surgery residents. Reviews bone and cartilage physiology and healing, and covers surgical management of musculoskeletal injuries in small animal and equine patients.

**VS 660 Neurology and Neurosurgery (3 credits).** This course is recommended for all large animal and small animal surgery residents. Reviews neurophysiology and electrodiagnostics, and covers diagnostic and surgical techniques for conditions of the nervous system.

**VS 605 Comparative Anesthesiology (2 credits).** This course is recommended for all large animal and small animal surgery residents. Covers techniques in large and small animal anesthesia.

**VS 606 Anesthesiology Lab/Manuscript Preparation (1 credit).** This course is designed for students to obtain advanced training in a select topic related to veterinary anesthesia by preparing a manuscript that is suitable for publication. Please contact the course coordinator of VS 605 before taking this course.

**VS 602 Critical Evaluation of Scientific Literature (2 credits).** The prerequisite for this course is one semester of basic statistics or equivalent knowledge base. Students will be asked to critique the statistical methods used in various scientific papers.

**BS 560 Theory and Practice of Animal Biotechnology (3 credits).** This course requires one semester of biochemistry as a prerequisite. It consists of lecture and laboratory. It is suggested for students with an interest in molecular technology and gene therapy.

**PA 786B – Surgical Pathology (1 credit).** This course would benefit surgical residents, oncology residents, and others who have an interest in surgical histopathology.

**EX 603 – Advanced Topics in Exercise Physiology (3 credits).** This course might be of interest to those graduate students interested in exercise performance, cardiovascular physiology, respiratory physiology, and musculoskeletal physiology.

**EX 604 – Role of Oxygen Transport in Exercise and Health (3 credits).** This is a good course for students interested in surgery, cardiology, exercise performance, and anesthesiology. The course covers the role of oxygen transport mechanisms in exercise performance and in health at the cellular and systemic levels.

**MB 760 – Mechanisms of Bacterial Pathogenesis (3 credits).** This course deals with mechanisms of bacterium-host interaction at molecular and cellular levels. There is lecture and a laboratory. Immunology and biochemistry are prerequisites.

**MB 651 – Immunobiology (3 credits).** Humoral and cellular immunity as well as transplantation and cancer are covered. A good course for oncology residents and those with a strong interest in immunology. A previous immunology course is required.

**EH 701 – Environmental Carcinogenesis (3 credits).** The course covers molecular and cellular mechanisms by which environmental carcinogens exert effects. Biochemistry is a prerequisite.

**R 721v – Radiation Oncology (1-3 credits).** Management of tumors with emphasis on radiation therapy.

**R 711v – Radiographic Interpretation (1 credit for LA; 4 credits for SA).** Radiographic interpretation of disease processes of all major organ systems in large and small animals. The specific organ systems covered vary from semester to semester in a sequential pattern. This course is taught offered in the Spring semester of even numbered years.

**MB 533/EH 533 – Epidemiology of Infectious Diseases/Zoonoses.** This course covers the epidemiological features of infectious and parasitic diseases that have a major impact on community medicine. Recommended for students interested in epidemiology of infectious diseases.

**MIP636-Mechanism of Viral Infection and Diseases (3 credits).** This course covers cytopathic mechanisms, pathogenetic events in viral diseases, host response and antiviral immunity; cancer induction by DNA and RNA viruses.