

## **Program Requirements**

### **M.S. in Veterinary Microbiology (Thesis and Non-Thesis)**

### **Ph.D. in Veterinary Microbiology**

**Required** courses for all MS and PhD students:

GR ST 5650 Responsible Conduct of Research Cr. 1

STAT 5101 Statistical Methods for Data Analysis Cr. 4  
(for Graduate Students in the Applied Sciences)

VMPM 6040 Seminar VMPM 6040 **OR** Micro 6040 **OR** Imbio 6040  
(1 for MS students and 3 for Ph.D students over the course of their program)

Additionally, MS students are required to take 1 course in 2/4 areas and PhD students are required to take 1 course in 3/4 areas.

#### **Required Areas:**

##### **Bacteriology:**

VMPM 5860 Medical Bacteriology Cr. 4

VMPM 6250 Mechanisms of Bacterial Pathogenesis Cr. 3

Micro 5520 & 5530 & 5550 Combined:

5520: Bacterial molecular genetics and physiology Cr. 1

5530: Pathogenic microorganisms Cr. 1

5550: Fungal biology Cr. 1

##### **Virology:**

VMPM 5870 Animal Virology Cr. 3

VMPM 6080 Molecular Virology Cr. 3

##### **Immunology:**

VMPM 5200 Medical Immunology Cr. 3

**OR**

VMPM 5750 Immunology Cr. 3

##### **Epidemiology:**

VMPM 5280 Introduction to Epidemiology and Pop Health. Cr. 3

VMPM 5270 Applications to Statistics to Pop Studies Cr. 3

VMPM 5290 Epidemiological Methods for Population Research Cr. 3

## **Ph.D. in Veterinary Microbiology (Preventive Medicine Emphasis)**

### **Required Coursework:**

|            |   |
|------------|---|
| VMPPM 5280 | Introduction to Epidemiology and Prev. Med. Cr. 3     |
| VMPPM 5270 | Applications to Statistics to Pop Studies Cr. 3       |
| VMPPM 5290 | Epidemiological Methods for Population Research Cr. 3 |

### **A list of additional courses relevant to the VMPPM major:**

|            |  |
|------------|--|
| Micro 5510 | Microbial diversity and phylogeny Cr. 1                    |
| Micro 5560 | Microbial ecology and environmental monitoring Cr. 1       |
| Micro 5540 | Virology   |
| VMPPM 5250 | Intestinal Microbiology, Cr. 3                             |
| PIP 5090   | Plant Virology Cr. 4                                       |
| BMS 5750   | Cell Biology Cr. 3   |
| V Pth 6550 | Cellular and Molecular Pathology I Cr. 3                   |
| BBMB 6450  | Molecular Endocrinology; Hormones and Growth Factors Cr. 2 |
| STAT 4020  | Statistical Design and the Analysis of Experiments Cr. 3   |
| STAT 4030  | Nonparametric Statistical Methods Cr. 2                    |
| STAT 4070  | Methods of Multivariate Analysis Cr. 3                     |
| STAT 4150  | Advanced Statistical Methods for Research Workers Cr. 3    |
| STAT 4210  | Survey Sampling Techniques Cr. 3                           |

### **Interdepartmental Programs**

**The Course requirements for the Interdepartmental Majors can be found at their respective web sites:**

Bioinformatics and Computational Biology (BCB)

Genetics

Immunobiology

Molecular, Cellular and Developmental Biology (MCDB)

Toxicology