

# Tuskegee University College of Veterinary Medicine

## Master of Science in Veterinary Science (MSVS)

### Contact Information:

Gopal Reddy, DVM, MS, PhD, DACVM  
Professor & Interim Associate Dean for Research & Advanced Studies  
[greddy@tuskegee.edu](mailto:greddy@tuskegee.edu); Office Phone: (334) 724-4438

Tammie B. Hughley, Manager/Coordinator  
[thughley@tuskegee.edu](mailto:thughley@tuskegee.edu); Office Phone: (334) 724-4540

- A. **The Master of Science in Veterinary Science graduate program** currently existing in the College of Veterinary Medicine produces successful academicians and investigators in the areas of cancer cell biology, immunology & vaccine development, infectious diseases, cancer and nano-therapy, reproductive physiology, risk analysis/epidemiology, food safety, toxicology, cystic kidney disease and control of food intake.

### Admission Requirements:

- | Applicants must have completed the B.S. degree from an accredited college or university.
- | Cumulative GPA of 3.0 or better
- | Complete Online Application and Application Fee
- | Official Transcripts from all colleges/universities (International Students must have their transcripts evaluated through the World Education Services –WES)
- | GRE Scores at least 540 (old) or 156 (new), less than 5 years old
- | Personal Statement
- | Three (3) Recommendation Letters
- | Resume or Curriculum vitae (CV)
- | \*ETS/WES Scores (for international students only)
- | TOEFL (for international students only)
- | Affidavit of Support and Bank Statement (for international students only)

### Graduation Requirements:

- | Core Courses: 10
- | Elective Courses: 16
- | Research/Thesis: 6
- | Admission to Candidacy
- | Submission of satisfactory research thesis
- | Passing of the Final Oral Examination

### Advisory Committee:

During the first semester of his/her study in the Master of Science program, the student and his/her Major Professor must recommend to Associate Dean for Research & Advanced Studies for approval an Advisory Committee consisting of a minimum of four members

including the Major Professor. The Advisory Committee shall also serve as the Examination Committee.

**Core Courses (10 credits): Required by All Students**

Course	Course Number	Credit
Biostatistics I (or biomed. stats.)	EVSC 0500	3
Biostatistics II	EVSC 0501	3
Biomedical Statistics (or biostats.I)	MBIO 0660	3
Biochemistry	CHEM 0561 or IBSC 0603	3
Seminar I	MBIO 0600 or PHSI 0600	1
<b>TOTAL</b>		<b>10</b>
Research/ Thesis	MBIO 0700 or PHSI 0700	6

**Elective Courses (16 credits): Determined by Student’s Major Professor & Committee**

Elective courses may be any graduate level courses and some of the DVM courses offered in the four departments of the college of veterinary medicine in addition to some other relevant courses offered in other colleges at Tuskegee University (shown below).

**Transfer Credits:**

The student’s Advisory Committee may recommend transfer credits for up to 9 hours for graduate courses taken by the student at Tuskegee University as part of another graduate program or at any other institution. Transfer credits may be recommended under both core and elective categories.

**Admission to Candidacy:**

After completing 15 credits of course work, the student must submit a completed application for the Candidacy to the Dean of Graduate School.

**Seminars:**

A student pursuing the Master of Science degree in Veterinary Science must present at least one seminar. This course includes practical examples of proper conduct of research, issues with copy right violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentation on a topic approved by the Major Professor is required.

**Thesis:**

The final draft of the thesis/dissertation must be filed with the student's Advisory Committee at least 30 days before the date listed in the university calendar for final copies to be submitted during the semester in which the student expects to graduate. The student must present to the Dean of Graduate School a "Preliminary Approval Sheet" (PAS) bearing the signature of the Major Professor before the final oral examination may be scheduled and before copies of the thesis/dissertation are distributed to members of the Examining Committee.

After the "Preliminary Approval Sheet" has been signed, it should be submitted to the Dean of

Graduate School before the final examination is scheduled and before the final draft of the thesis/dissertation is prepared for final approval. Approval of the thesis/dissertation in its final form rests with the Examining Committee.

<b>List of Core Courses</b>	
EVSC 0500	<b>BIostatistics I.</b> CR. 3. Statistical methods in scientific research. An introductory course in statistics dealing with the application of various methods of analyzing research data to include sampling, randomization, the normal distribution, "t" test, linear regression, correlation, Chi-Square, and analysis of variance of random design. Laboratory assignments require the use of pocket calculators and the University's time share computer.
EVSC 0501	<b>BIostatistics II.</b> CR. 3. The application of advanced statistical methods in analyzing biological data to include analysis of two-way experiments, factorial experiments, covariance analysis, least-square analysis with unequal subclass numbers and curvilinear regression. Laboratory assignments require the use of the University time share computer and departmental microcomputers. <b>Prerequisites: EVSC 0500 or Permission of Instructor</b>
MBIO 0660	<b>BIOMEDICAL STATS.</b> CR. 3. The conceptual and theoretical bases of biomedical research designs are examined. Appropriate statistical methods, which correspond to and are consistent with the biomedical research design, will be studied. These include both parametric and nonparametric methods. Descriptive statistics, probability distributions, comparative statistics (t test, ANOVA) and causal analysis (chi square, regression and other multivariate techniques) will be covered with emphasis on inferential aspects of statistics and on the interpretation of results which would be rational and meaningful in biomedicine.
MBIO 0600	<b>SEMINARI - MICROBIOLOGY.</b> CR. 1. This course includes practical examples of proper conduct of research, issues with copy right violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentations are and/or reports are required.
MBIO 0601	<b>SEMINARI II - MICROBIOLOGY.</b> CR. 1. This course includes practical examples of

	proper conduct of research, issues with copy right violation, plagiarism, interpretation of published work among other academic requirements including discussions on basic research methods, and a review of current research topics. Oral presentations are and/or reports are required.
PHSI 0600	<b>SEMINARI - BIOMEDICAL SCIENCES.</b> CR. 1. This is a seminar course. The student is required to present a seminar to talk about his / her research work or a project chosen by the advisor. This course teaches the techniques to prepare and present a seminar in public.
PHSI 0601	<b>SEMINARI II - BIOMEDICAL SCIENCES.</b> CR. 1. This is a seminar course. The student is required to present a seminar to talk about his / her research work. This course teaches the techniques to prepare and present a professional seminar in public.
MBIO 0700	<b>RESEARCH IN PATHOBIOLOGY/THESIS.</b> CR. 5. This course deals with specific research thesis projects under the supervision of the graduate student's major professor. Master's student is expected to enroll in a total of 6 credit hours, conduct research and defend it.
PHSI 0700	<b>RESEARCH IN BIOMEDICAL SCIENCES/THESIS.</b> CR. 5 This is a required course designed to give time for the student to write their thesis work in the format required by the graduate school.
<b>List of Elective Courses</b>	
ANAT 301G	<b>GROSS ANATOMY.</b> CR. 4. This course deals with a topographic and systemic anatomic view of the canine, feline species, and the domestic bird. Emphasis is placed on the dissection of the dog & cat cadavers. Prosections, plastinated specimens, videos and slides are utilized as instructional aids
ANAT 302G	<b>MICROANATOMY.</b> CR. 4. The course includes (2 lectures one hour each and 2 labs two hours each) studies of cells, tissues, and organs at the light and electron microscopic levels, with emphasis on structural-functional relationships and clinical applications. The lab component includes identification of cells, tissues and organs using web-based digital images.
PHSI 301G	<b>PHYSIOLOGY.</b> CR. 5. Introduction to general physiology which includes fluids, electrolytes, transport of substances across cell membranes, action potentials, signal transduction and intermediary metabolism; physiology respiratory and digestive systems.
PATH 426G	<b>PATHOLOGY.</b> CR. 4. This course deals with basic and fundamental disease processes referable to and affecting the body as a whole. Emphasis is placed on the base knowledge and applied skills needed for logical reasoning when solving problems related to clinical medicine and surgery. Predisposing factors, etiologic agents, pathogenesis, and lesions are included in the discussions. <b>Prerequisites: ANAT 0302 and ANAT 0310</b>
PHSI 0546	<b>TOXICOLOGY.</b> CR. 4. This course deals with basic clinical and diagnostic aspects of toxic agents of Veterinary medical importance including pesticides, metals, poisonous plants, mycotoxins, zootoxins, drugs, feed additives, industrial and commercial toxicants, household products, and water pollutants. Emphasis is placed on the sources, physical and chemical properties, absorption, distribution, mechanisms of action, biotransformation, and excretion of toxic agents. Also, the emphasis is placed on approaches to investigate and treat intoxications, and to understand the biochemical and pathophysiological processes through which the organsystems react to toxicants. <b>Prerequisite: PHSI 0442</b>
PATH 425G	<b>PARASITOLOGY.</b> CR. 4. This course deals with the classification, morphology, life history, mode of transmission, pathogenicity, control, and diseases caused by parasites of

	importance in animals. Emphasis is placed on the identification of parasites and the diagnosis of parasitic diseases.
MBIO 411G	<b>MICROBIOLOGY</b> . CR. 3. This course covers the basic properties of viruses in relation to their roles as disease-causing agents. Emphasis will be on a systematic review of virus families that cause diseases in domestic animals.
MBIO 413G	<b>IMMUNOLOGY</b> . CR. 3. This course deals with the structure, function, and kinetics of immune responses in relation to infectious, neoplastic, allergic, immunodeficiency, and autoimmune diseases. Initially the students will be exposed to basic and fundamental aspects of the immune system. <b>Prerequisite: MBIO0411</b>
MBIO 414G	<b>IMMUNOLOGY/VIROLOGY LAB</b> . CR. 1. This laboratory course covers general laboratory for the didactic lectures of Virology (MBIO 412) and Immunology (MBIO 413). Participants will have the opportunity to gain general understanding of principals and objectives of diagnostic methods in Virology and Immunology, collection, packaging and transport of specimens, immunological disorders including tests for autoimmune, hypersensitivity, and immunodeficiency conditions.
MBIO 412G	<b>VIROLOGY</b> . CR. 2. This course deals with the basic concepts and principles of viruses and viral infections. Emphasis is placed on viral agents basic, clinical and practical importance. <b>Prerequisite: MBIO0411</b>
MBIO 0614	<b>POPULATION HEALTH</b> . CR. 2. This course introduces graduate students to the theory, methods, and body of knowledge of epidemiology, using an integrated approach. It covers the full range of disease occurrence, including genetic and environmental causes for both infectious and noninfectious diseases and their interactions, as well as zoonoses. It discusses the core epidemiologic functions, including public health surveillance, outbreak investigation, epidemiologic study designs, and evaluation of treatment regimens and screening tests and their efficacies. Designed therefore for students in all fields of public health, its primary objective is to teach the basic principles and applications of epidemiology.
IBSC 0603	<b>BIOCHEMISTRY I</b> . CR. 4. IBS course development-mol.cell-organism-development-system-ecological-environmental biosciences (lecture/laboratory-emphases on model systems) under-girded by chemistry that bear on the aforementioned (biochemistry).  Biochemical Topics: Context-Living Systems, Protein Structure and Function, Enzymes and Co-Enzymes, Metabolism
IBSC 0605	<b>MOLECULAR BIOLOGY I</b> . CR. 4. This is a graduate-level, integratively-taught course that explores the origin, modification and interactive properties of living organisms, focusing on nucleic acids. This course is team taught, with different faculty teaching, based on their areas of expertise.

## College of Veterinary Medicine Tuskegee University

Doctor of Veterinary Medicine (DVM) Professional Program Curriculum (showing only Years 1-2 courses)

### Year 1: Veterinary Curriculum Fall Semester Courses

Semester 1	Credit Hours
VMED 800 The Veterinary Profession, Veterinary Law & Ethics, and Financial Literacy	2
VMED 801 Veterinary Anatomy I	4
VMED 802 Veterinary Microanatomy I	3
VMED 803 Veterinary Physiology I	4
VMED 804 Infection & Immunity I (Parasitology I)	2
VMED 805 Clinical Skills and Concept Based Learning I	3
VMED 806 Grand Rounds 0 (P/F)	?

### Year 1: Veterinary Curriculum Spring Semester Courses

Semester 2	Credit Hours
VMED 807 Veterinary Anatomy II	4
VMED 808 Veterinary Microanatomy II	3
VMED 809 Veterinary Physiology II	4
VMED 810 Infection & Immunity II (Parasitology II and Immunology)	4
VMED 811 Public Health and Evidence-Based Epidemiology	3
VMED 812 Clinical Skills and Concept Based Learning II	3
VMED 813 Grand Rounds 0 (P/F)	?

### Year 2: Veterinary Curriculum Fall Semester Courses

Semester 3	Credit Hours
VMED 814 Veterinary Pathology I	4
VMED 815 Clinical Pathology	3
VMED 816 Introduction to Pharmacology	3
VMED 817 Clinical Toxicology	2
VMED 818 Veterinary Nutrition	1
VMED 819 Infection and Immunity III (Bacteriology, Mycology & Clinical Microbiology I)	4
VMED 820 Avian, Exotics & Lab Animal Diseases	2
VMED 821 Clinical Skills and Concept-Based Learning III	2
VMED 823 Grand Rounds 0 (P/F)	?

### Year 2: Veterinary Curriculum Spring Semester Courses

Semester 4	Credit Hours
VMED 824 Veterinary Pathology II	4
VMED 825 Infection and Immunity IV (Virology and Clinical Microbiology II)	4
VMED 826 Diagnostic Imaging	3
VMED 827 Principles of Anesthesia & Surgery	2
VMED 828 Clinical Pharmacology	2
VMED 829 Systems-Based Core Clinical Specialties	4
VMED 830 Diagnostic Skills and Introduction to Evidence-Based Learning	2
VMED 831 Grand Rounds 0 (P/F)	?