STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE

VSCT 210 – VETERINARY MICROBIOLOGY

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SCHOOL OF SCIENCE, HEALTH AND CRIMINAL JUSTICE
VETERINARY SCIENCE TECHNOLOGY
MAY 2015

A. **TITLE**: Veterinary Microbiology

B. **COURSE NUMBER:** VSCT 210

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE**: No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** spring

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
2 hr. lecture and 2 hours laboratory per week

H. **CATALOG DESCRIPTION:**
This course consists of the study of pathogenic organisms encountered in animals and the diseases that they cause. Basic concepts of cytology and the interpretation of cytological slides are also covered. The laboratory focuses on the management of a veterinary microbiology lab as well as the isolation and identification of veterinary pathogens. Enrollment is limited to students in the veterinary technology programs (521 & 2278)

I. **PRE-REQUISITES/CO-REQUISITES:**
a. Pre-requisite(s): BIOL 209, VSCT 112, VSCT 202, VSCT 203,VSCT 207
b. Co-requisite(s): none

J. **GOALS (STUDENT LEARNING OUTCOMES):**
By the end of this course, the student will be able to:

Course Objective	*Institutional SLO*
a. Examine pathogenic traits of bacteria and host defenses as both relate to the etiology of disease.	**2. Crit. Thinking** **3. Prof. Competence**
b. Discuss bacterial pathogens of domestic animals and the diseases they cause	**3. Prof. Competence**
c. Discuss and utilize different media, stains and biochemical tests used in the culture and identification of pathogens	**2. Crit. Thinking** **3. Prof. Competence**
d. Isolate and identify common organisms (normal flora and pathogens) from biological samples	**3. Prof. Competence**
e. Perform common techniques used for obtaining cytological specimens and interpret cytology slides.	**2. Crit. Thinking** **3. Prof. Competence**
f. Discuss viruses, systemic mycosis and prions and the veterinary diseases they cause	**3. Prof. Competence**

K. TEXTS:

Laboratory Procedures for Veterinary Technicians, Hendrix & Sirois, Sixth Edition, Mosby, St. Louis, MO.

Veterinary Microbiology Lab Manual

L. REFERENCES: none

M. EQUIPMENT: Lab coat or scrub top to protect against bacteria and stains

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA/METHODS:

- Exams
- Quizzes
- Laboratory reports and quizzes
- Laboratory Practicum

P. DETAILED COURSE OUTLINE:

I. Review of Microbiology and Introduction to Veterinary Microbiology

II. Pathogenesis and Host defenses
Morphology
Anatomy
Bacterial Properties
Host Defenses

III. Stains, Media, and Biochemical tests
Bacteriological Media
Selective and Non Selective Isolation Media
Prokaryotic Metabolism

IV. Pathogens of the skin and wounds
Staphylococcus aureus
Streptococcus zooepidemicus
Corynebacteria
Actinomycetes
Dermatophilus
Actinobacillus
Erysipelothrix
Fusobacterium and Bacteriodes

V. Pathogens of the eye and ear
Moraxella
Chlamydophila
Pseudomonas
Proteus

Malassezia

VI. Pathogens of the respiratory system
Bordetella
Haemophilus
Pasteurella
Strep equi
Rhodococcus
Mycobacteria

VII. Pathogens of the gastrointestinal tract
Enterobacteriaceae
Clostridium
Mycobacterium
Campylobacter
Helicobacter

VIII. Pathogens of the urinary tract
Leptospira
Corynebacterium renale

IX. Mastitis producing pathogens
Strep ag
Kirby-Bauer Method
CAMP test
Esculin test
Mycoplasma
Nocardia
Prototheca

X. Pathogens of the reproductive tract
Brucella
Campylobacter
Taylorella

XI. Pathogens of the CNS
Clostridium tetani
Listeria

XII. Pathogens causing systemic disease
Bacillus anthracis
Borrelia burgdorgeri

Francisella tularensis
Actinobacillus equuli
Yersinia pestis
Bartonella henselae
Richettsia and Chlamadophila

XIII. Systemic Mycosis, Virology and Prions

Q. LABORATORY OUTLINE:

Week 1: Safety and Essentials

Week 2: Cytological Techniques

Week 3: Canine Vaginal Cytology

Week 4: Biochemicals, Staining, and Media

Week 5: Sample Collection and Handling

Week 6: Skin and Wounds

Week 7: Dermatophytes and Ectoparasites

Week 8: Eye and Ear

Week 9: Respiratory

Week 10: Gastro-Intestinal

Week 11: Urogenital

Week 12: Mastitis Lab Tour

Week 13: Mastitis plates and Sensitivities

Week 14: Restock and Check- out