I. **TITLE:**
Veterinary Clinical Chemistry

II. **CATALOG DESCRIPTION:**
The basic concept of clinical chemistry in animals as it relates to organ systems and specific diseases will be covered in lecture. The laboratory will emphasize clinical chemistry assays, medical mathematics for the clinical setting, urinalysis, and use of laboratory equipment. Lecture, two hours; laboratory, four hours for a half of a semester. (Fall and Spring)

Prerequisite: AGR 332, BIO 300, and 5 hours of chemistry

III. **PURPOSE:**
To provide training in various veterinary chemistry procedures.

IV. **COURSE OBJECTIVES:**
A. Advanced Clinical Chemistry lectures and laboratories – will provide understanding of the pathophysiologic mechanisms and underlying serum chemistry analysis.
B. After completing this course, students should be able to understand serum chemistry determinations, calculate and perform medical dilutions, set up quality control programs, and perform urinalysis.

V. **CONTENT OUTLINE:**
A. Clinical Chemistry Lecture
   1. Liver
   2. Pancreas
   3. Muscle
   4. Urinary System
   5. Serum Electrolytes and Chemicals
B. Clinical Chemistry Lab
   1. Glassware and Instrumentation
   2. Medical Mathematics
   3. Diagnostic Methods
   4. Serum Chemistry Tests
   5. Quality Control
   6. Urinalysis
VI. INSTRUCTIONAL ACTIVITIES:
A. Lecture
B. Laboratory

VII. FIELD AND CLINICAL EXPERIENCES:
Four hours of laboratory per week.

VIII. RESOURCES:
A. Blackboard includes lecture handouts, notes, laboratory manual and other information
B. ITV
C. Essential skills booklet: Students will turn in $5 for the printing and binding of the booklet (one booklet will be used for all BVC courses). The essential skills must be successfully completed for the student to receive credit for the course. Otherwise the student will receive an “I” for the semester.
D. PowerPoint images of urine sediment
E. Materials students should purchase and bring to class in addition to textbooks and laboratory material
   i. Simple nonprogrammable calculator
   ii. White laboratory coat
   iii. Scrubs or professional attire (can be any color as long as it matches)

   Students not dressed appropriately for laboratory will be asked to leave and change and will be docked professional points

IX. GRADING PROCEDURES:
90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
Below 60 = E

There will be two to three lecture exams during the semester to be announced during lecture time. A laboratory schedule will be posted on blackboard. It is the student’s responsibility to keep track of scheduled assignments and exams. Pop quizzes may be given at any time during lab per the instructor’s discretion. A time limit will be imposed on all practical work. Practical work not turned in on time will result in an automatic 10-point reduction for each hour the work is late for exams and 1 point per hour for reports. Extra credit may be available at various times during the semester as approved by the instructor.

Use of cell phones is prohibited during class time. Points may be deducted for cell phones that ring during class or other disruptive calls. Points may also be deducted for unprofessional behavior during laboratories. Programmable calculators are prohibited for use during tests.
X. ATTENDANCE POLICY:
Lecture attendance is expected. Laboratory attendance is mandatory. Students who leave class early or arrive late without making prior arrangements with the instructor will be docked points for professionalism. There will be absolutely no make-ups for pop quizzes, assignments or reports missed during the absences. If an absence is excused, the student will not be penalized for work they miss, but will be responsible for obtaining any material covered for exam purposes. Exams must be taken within the week of absence or the student will receive a zero. Written proof of excuse is required; otherwise, professional points will be docked for that day and all assignments given a zero. It is the student's sole responsibility to obtain any information they missed during an absence and submit written proof of an excused absence to the instructor. Please refer to Murray State University’s Undergraduate Bulletin and Graduate Bulletin.

XI. ACADEMIC HONESTY POLICY:
Any act of academic dishonesty will not be tolerated in this course and will result in a zero for the assignment or test in question. A letter regarding the incident will also be sent to the head of the department and the dean to be included in the student’s permanent record.

(Adopted by the MSU Board of Regents)
Cheating, plagiarism (submitting another person’s material as one’s own), or doing work for another person which will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, term papers, or the presentation on unacknowledged material as if it were the student’s own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

NOTE: The School of Agriculture Faculty have adopted and implemented an Academic Honesty Policy in addition to the University Honesty Policy, which can be found in the Undergraduate Bulletin and Graduate Bulletin. The policy sets guidelines regarding acts of dishonesty and the procedure to follow should an event occur. It is each Agriculture student's responsibility to obtain and read a copy of this document. The School’s Academic Honesty Policy can be obtained by asking for a copy from any Agriculture Faculty member or the Secretary.

XII. TEXT AND REFERENCES:
A. Laboratory Procedures for Veterinary Technicians, by Hendrix (required)
C. Laboratory Profiles of Small Animal Diseases, 3rd Edition, by Charles Sodikoff, (recommended)
XIII. **PREREQUISITES:**
AGR 332, BIO 300, and 5 hours of chemistry

XIV. **STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:**
Murray State University does not discriminate on grounds of race, color, gender, sexual orientation, religion, national origin, age, disability, or veteran's status in providing any educational or other benefits services of Murray State University to students or those applying for admission at Murray State University. Murray State University attempts to provide equal opportunity in all areas of student admissions, financial aid, employment, and placement and provides upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities. For information regarding nondiscrimination policies contact the Office of Equal Opportunity, 270-809-3155.

XV. **MSU SCHOOL OF AGRICULTURE CELL PHONE POLICY**
The School of Agriculture recognizes that in today’s world cell phones are a familiar and often necessary form of communication for students.

It shall be the policy of the School that no cell phone usage shall be allowed in class and/or labs without the prior consent of the course instructor. This shall include verbal calling, incoming calls, email, text messaging, and use of cell phone calculators on tests and quizzes.

Cell phones must be kept off and out of sight (i.e. secured to a person’s belt or kept in a bag or purse away from desks and lab counters).

Should a student’s cell phone be visible, ring, or other form of unauthorized usage that is interruptive to the class or lab, the student may be asked to leave class and not return for that class/lab period.

Upon prior consent of the instructor, a student may obtain permission to have their phone on in case of an emergency or in critical family situations.

This policy also includes pagers and other electronic equipment such as blackberries and/or computers/laptops.

*Instructor’s Note: Only simple, non-graphing calculators will be allowed for exam purposes. No cell phones, laptops, or graphing calculators will be allowed during an exam.*