

498. Capstone: Internship in Zoo and Aquarium Science
Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Zoology and Fisheries and Wildlife. Administered by Zoology.
R: Open only to juniors or seniors. Approval of department
Experience in applying zoological experience in a zoo or aquarium setting outside the university.

LARGE ANIMAL CLINICAL SCIENCES LCS

Department of Large Animal Clinical Sciences College of Veterinary Medicine

412. Hazard Analysis and Critical Control Points in Production Medicine
Spring. 2(2-0)
R: Not open to freshmen. Not open to graduate-professional students in the College of Veterinary Medicine. Animal disease and health in relation to livestock production and public health. Production medicine and the ability to develop hazard analysis critical control points (HACCP) strategies for animal disease management.

610. Problems in Large Animal Clinical Sciences
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. Advanced clinical training in a problem related to large animal clinical sciences.

611. Research Problems in Large Animal Clinical Sciences
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to graduate-professional students in the College of Veterinary Medicine. Approval of department.
Research related to a large animal specialty

612. Problems in Production Medicine
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
P: LCS 630 or LCS 631; approval of department. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. Production medicine problems of livestock health management. Course offered through a consortium with the universities of Illinois, Florida, California, and Nebraska, and Kansas State University, work to be completed at one of those universities.

620. Equine Clinical Clerkship I
Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 650.
Supervised practice in equine medicine and surgery. Diagnosis, prognosis, treatment, and disease prevention.

621. Equine Practice Clerkship
Fall, Spring, Summer. 3 credits.
R: Completion of semester 5 of the professional veterinary program.
Supervised, off-campus experience in an assigned veterinary practice. Regular equine farm calls. After-hours emergencies. Veterinary practice management.

622. Equine Clinical Clerkship II
Fall, Spring, Summer. 3 credits.
P: LCS 620 or LCS 621. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 654.
Advanced general training in equine medicine and surgery.

623. Equine Musculoskeletal Diseases Clerkship
Fall, Spring, Summer. 3 credits.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 651.
Techniques and procedures used for the diagnosis and management of equine musculoskeletal diseases. Hospitalized and field cases.

624. Equine Theriogenology Clerkship
Fall, Spring, Summer. 3 credits.
R: Open only to graduate-professional students in the College of Veterinary Medicine. Not open to students with credit in LCS 644.
Emphasis on diagnostic methods utilized in equine reproduction.

625. Equine Herd Health Clerkship
Fall, Spring, Summer. 3 credits.
P: LCS 621. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. Not open to students with credit in LCS 666.
Establishing and maintaining equine herd health programs. Reproduction, parasite control, immunization, and diagnostic medicine and surgery in the field.

626. Advanced Equine Surgery
Fall, Spring, Summer. 3 credits.
P: LCS 620 or LCS 621; LCS 622. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
Advanced, in-depth training in overall surgical management of equine surgical patients. Emphasis on breeds used for racing or sport.

627. Advanced Equine Medicine
Fall, Spring, Summer. 3 credits.
P: LCS 620 or LCS 621; LCS 622. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
Advanced, in-depth training in the medical management of equine patients. Emphasis on neonates.

628. Techniques in Equine Anesthesia and Surgery
Fall, Spring, Summer. 3 credits.
P: LCS 620 or LCS 621; LCS 622, LCS 640. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
Advanced equine anesthesia and surgery. Preoperative care of University-owned equids, induction of anesthesia, and performance of minor surgical procedures.

629. Equine Fundamentals
Spring. 3 credits.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in the College of Veterinary Medicine.
Basic clinical skills in equine medicine, surgery and reproduction.

630. Food Animal Medicine and Surgery Clerkship
Fall, Spring, Summer. 3 credits.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 660.
Disease diagnosis and therapy of food animal species in a hospital setting. Disease process related to herd of origin.

631. Food Animal Practice Clerkship
Fall, Spring, Summer. 3 credits.
R: Completion of semester 5 of the professional veterinary program. Not open to students with credit in LCS 660.
Supervised, off-campus experience in an assigned veterinary practice. Regular food animal farm calls. After-hours emergencies. Veterinary practice management.

632. Advanced Food Animal Medicine and Surgery Clerkship
Fall, Spring, Summer. 3 credits.
P: LCS 630, completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 672.
In depth, supervised food animal medicine and surgery.

633. Dairy Production Medicine Clerkship
Fall, Spring, Summer. 3 credits.
P: LCS 631, completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 664.
Dairy farm and herd health management. Record keeping, general management, housing, nutrition. Mastitis control.

634. Swine Production Medicine Clerkship
Fall, Spring, Summer. 3 credits.
P: LCS 631, completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 668.
Swine diseases and related production problems encountered in swine herd health programs.

635. Advanced Swine Production Medicine
Fall. 3 credits.
P: LCS 634. Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in the College of Veterinary Medicine.
Preparation for herd consultation: population management records analysis, integrated production systems, and complex multi-factorial problems.

636. Introduction to Herd Medicine
Fall, Spring, Summer. 3 credits.
R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
Principles of herd health and production medicine. Participation in the production medicine service.

637. Advanced Dairy Production Medicine
Fall, Spring, Summer. 3 credits.
P: LCS 633, LCS 636. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
Topics related to enhancing profitability, decreasing disease, and improving management of dairy farms.

Descriptions —Large Animal Clinical Sciences of Courses

638. Beef Production Medicine
Fall, Spring, Summer. 3 credits.
P: LCS 630 or LCS 631 or LCS 636 or LCS 643. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
 Veterinary management of production and health of beef cattle. Visits to out-of-state facilities may be required.

639. Small Ruminant Medicine
Fall, Spring, Summer. 3 credits.
R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
 Health care to small ruminants on an individual and flock/herd basis. Emphasis on sheep.

640. Large Animal Anesthesia Clerkship
Fall, Spring, Summer. 3 credits.
may earn a maximum of 6 credits in all enrollments for this course.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in College of Veterinary Medicine. Not open to students with credit in LCS 656.
 Concepts and supervised practice in large animal anesthesiology.

641. Food Animal Theriogenology
Fall, Spring, Summer. 3 credits.
P: LCS 643. R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
 Techniques for evaluating the reproductive performance of food animal individuals and populations. Emphasis on cattle. Farm visits.

643. Food Animal Fundamentals
Fall, Spring, Summer. 3 credits.
R: Completion of semester 5 of the professional veterinary program. Open only to graduate-professional students in College of Veterinary Medicine.
 Skills related to food animal veterinary practice.

677. Veterinary Preceptorship
Fall, Spring, Summer. 3 credits.
P: LCS 620 or LCS 621 or LCS 630 or LCS 631. R: Not open to students with credit in LCS 674 or VM 610 or VM 611.
 Applied large animal clinical science in private practices. Supervised off-campus experience.

678. Government and Corporate Veterinary Practice
Fall, Spring. 3 credits.
P: Completion of semester 5 of the professional veterinary program. R: Open only to graduate-professional students in the College of Veterinary Medicine.
 Preparation for employment in government and corporate veterinary practice.

809. Special Problems in Large Animal Surgery
Fall, Spring, Summer. 1 to 3 credits.
A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to graduate students in Large Animal Clinical Sciences. Approval of department.
 Elective work in surgical research problems student's interest.

811. Special Problems in Large Animal Medicine
Fall, Spring, Summer. 1 to 3 credits.
A student may earn a maximum of 9 credits in all enrollments for this course.
R: Open only to graduate students in Large Animal Clinical Sciences. Approval of department.
 Elective work in medicine related research problems student's interest.

813. Seminar
Fall, Spring, Summer. 1(1-0)
A student may earn a maximum of 3 credits in all enrollments for this course.
R: Open only to graduate students in Large Animal Clinical Sciences or Small Animal Clinical Sciences. Approval of department.
 Presentation and discussions of current topics by graduate students, faculty, or outside speakers.

825. Experimental Surgical Techniques for Animal Research
Fall of odd-numbered years. 2(1-2)
P: B.S. degree. R: Open only to graduate students. Approval of department.
 Humane treatment of research animals. Anesthesia, aseptic surgical techniques. Instrumentation for surgery, suture materials and patterns. Tissue handling and wound healing.

827. Comparative Theriogenology
Spring of even-numbered years. 2(2-0)
P: VM 580. R: Open only to graduate students in Large Animal Clinical Sciences or Small Animal Clinical Sciences. Approval of department.
 Comparative pathophysiology of reproductive systems of domestic animals. Emphasis on clinical theriogenology.

828. Tropical Animal Health
Spring. 2(2-0)
R: Open only to graduate-professional students in College of Human Medicine, College of Osteopathic Medicine, College of Veterinary Medicine. Approval of department.
 Animal health in the tropics. Impact on agriculture, the livestock industry, and human welfare.

829. Design and Conduct of Epidemiological Studies and Clinical Trials
Spring. 3(2-2)
Interdepartmental with Human Medicine.
P: VM 533 or approval of department. R: Open only to graduate students in the colleges of Human Medicine, Osteopathic Medicine, or Veterinary Medicine.
 Applied analytical methods in experimental design. Assessment of health and disease status of animal and human populations. Risk assessment and interpretation of clinical trials.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits.
A student may earn a maximum of 18 credits in all enrollments for this course.
R: Open only to graduate students in Large Animal Clinical Sciences. Approval of department.

901. Investigating the Lung
Fall of even-numbered years. 3(3-0)
Interdepartmental with Physiology and Pathology.
R: Open only to M.S. and Ph.D. students in Large Animal Clinical Sciences, Small Animal Clinical Sciences, Physiology, and Pathology. Approval of department.
 Classic and current concepts of respiratory structure and function in health and disease. Mechanisms of lung injury.

999. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 36 credits.
A student may earn a maximum of 36 credits in all enrollments for this course.
R: Open only to graduate students in Large Animal Clinical Sciences. Approval of department.

LATIN

LTN

**Department of Romance and Classical Languages
 College of Arts and Letters**

101. Elementary Latin I
Fall. 4(4-0)
R: No previous experience in Latin or designated score on Latin placement test.
 Fundamentals of vocabulary, grammar, and syntax. Translation of elementary readings.

102. Elementary Latin II
Spring. 4(4-0)
P: LTN 101 or designated score on Latin placement test.
 Continued study of the fundamentals of vocabulary, grammar, and syntax. Translation of elementary readings.

201. Latin Prose
Fall. 4(4-0)
P: LTN 102 or designated score on Latin placement test.
 Intermediate-level Latin prose based on readings of such authors as Sallust, Livy, and Cicero.

202. Latin Poetry
Spring. 4(4-0)
P: LTN 201.
 Intermediate-level Latin poetry of the Republic and Augustan periods.

290. Independent Study
Fall, Spring. 1 to 4 credits.
A student may earn a maximum of 4 credits in all enrollments for this course.
R: Approval of department.
 Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

301. Republican Prose and Poetry (W)
Fall of even-numbered years. 3(3-0)
P: LTN 202. R: Completion of Tier I writing requirement.
 Cicero, Caesar, Sallust, Plautus, Terence, Catullus, and Lucretius.

302. Augustan Poetry (W)
Spring of odd-numbered years. 3(3-0)
P: LTN 202. R: Completion of Tier I writing requirement.
 Poetry of Virgil, Horace, Propertius, Tibullus, and Ovid.

401. Augustan and Early Imperial Prose
Fall of odd-numbered years. 3(3-0)
P: LTN 301 or LTN 302.
 Augustan and Early Imperial prose writers. Livy, Augustus, Tacitus, Petronius, Suetonius, and others.

402. Imperial Poetry
Spring of even-numbered years. 3(3-0)
P: LTN 301 or LTN 302.
 Poets of the Empire: Lucan, Seneca, Persius, Juvenal, Silius Italicus, Statius, and others.