

- 437 Design Implementation**  
Fall. 3(0-6) P:NM: (LA 331) R: Open only to seniors in the Landscape Architecture or Horticulture major. C: LA 443 concurrently, LA 480 concurrently.

Development of a complete package of contract documents for a representative site development project, including construction plans, bid documents, and specifications.

- 439 Golf Course Planning and Design**  
Fall of even years. 3(3-0) Interdepartmental with Urban Planning. Administered by Department of Geography. P:NM: (LA 342) R: Open only to seniors or graduate students in Urban and Regional Planning or Urban and Regional Planning-Urban Studies or Landscape Architecture.

History, planning, and design of the golf course as a component of the community. Environmental, regulatory, technical, and financing issues.

- 443 Community Project Design I**  
Fall. 5(2-6) P:NM: (LA 443) R: Open only to majors in Landscape Architecture or Urban and Regional Planning. Approval of department. C: LA 437 concurrently, LA 480 concurrently.

Development of design solutions for medium scale site development projects focusing on moderately complex design programs and problems.

- 444 Community Project Design II**  
Spring. 5(2-6) P:NM: (LA 443) R: Open only to majors in Landscape Architecture.

The community systems planning process. Application of multiple use theory and techniques. Integration of project demands and community infrastructure.

- 445 Advanced Project Design**  
Spring. 4(0-8) P:NM: (LA 444 and LA 480) R: Open only to seniors in Landscape Architecture.

Application of design theory to complex site development projects in community settings. Interaction of human activities, sites, and end uses. Use of community feedback.

- 446 Regional Environmental Design**  
Fall. 3(0-6) P:NM: (LA 444) R: Open only to seniors in Landscape Architecture or approval of department.

Theory and tools in regional environmental design and their application to site facilities, assignment of land use, and management of landscape structure with special emphasis on spatial identity, visual quality, and environmental modeling. Human dimensions to landscape change.

- 480 Professional Practice (W)**  
Fall. 3(2-2) P:M: Completion of Tier I writing requirement. R: Open only to seniors or graduate students in Landscape Architecture. C: LA 437 concurrently, LA 443 concurrently.

Principles and procedures of professional office practice. Organization and management of offices, personnel, and projects. Ethical and legal issues.

- 483 Historic Preservation and Preservation Planning in the U.S.**  
Fall. 4(4-0) Interdepartmental with Urban Planning. Administered by Department of Geography. R: Not open to freshmen or sophomores. Approval of department.

History and philosophy of the preservation of buildings, structures, and objects significant to the heritage of this nation. Preservation as a planning tool for local governments.

- 490 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Open only to students in Landscape Architecture. Approval of department.

Individual investigation of landscape architecture topics in the interest areas of the Landscape Architecture faculty.

- 492 Senior Research Seminar (W)**  
Spring. 3(2-2) P:M: Completion of Tier I writing requirement. R: Open only to seniors or graduate students in Landscape Architecture.

Contemporary issues of relevance to the profession.

- 493 Internship in Landscape Architecture**  
Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to seniors in Landscape Architecture or approval of department.

Supervised experience in approved public agencies and professional offices.

- 494 Special Topics in Landscape Architecture**  
Fall, Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to juniors or seniors in Landscape Architecture or approval of department.

Selected subjects in landscape architecture derived from emerging issues and topics.

- 498 Internship in Zoo and Aquarium Science**  
Fall, Spring, Summer. 3 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Zoology; Fisheries and Wildlife. Administered by Department of Zoology. R: Open only to juniors or seniors. Approval of department.

Application of 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, food safety 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 or approval of department.

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: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine or approval of department.

Research related to a large animal specialty

- 613 Off-Campus Problems in Large Animal Clinical Sciences**  
Fall, Spring, Summer. 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. Approval of department.

Advanced clinical-phase training in an off-campus setting in a specific problem related to large animal clinical sciences, for which on-campus training is not available. The students specific training objective will be developed and approved from both an on-campus liaison and the off-campus liaison.

- 620 Equine Clinical Clerkship I**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.

Supervised practice in equine medicine and surgery. Diagnosis, prognosis, treatment, and disease prevention. Required clerkship.

- 621 Equine Practice Clerkship**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.

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. A student may earn a maximum of 6 credits in all enrollments for this course. P:NM: (LCS 620) R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.

Advanced general training in equine medicine and surgery.

- 623 Equine Musculoskeletal Diseases Clerkship**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.

Techniques and procedures used for the diagnosis and management of equine musculoskeletal diseases. Hospital and field cases.

- 624 Equine Theriogenology Clerkship**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.

Emphasis on diagnostic methods utilized in equine reproduction.

## Large Animal Clinical Sciences–LCS

- 625 Equine Herd Health Clerkship**  
Fall, Spring. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
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:NM: (LCS 620 and LCS 622) R: Completion of semester 5 of the graduate-professional program in the 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**  
Spring. 3 credits. P:NM: (LCS 620) R: Completion of semester 5 of the graduate-professional program in the 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:NM: (LCS 620 and LCS 622 and LCS 640) R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Advanced equine anesthesia and surgery. Preoperative care of University-owned equids, induction of anesthesia, and performance of minor surgical procedures.
- 630 Food Animal Medicine and Surgery Clerkship**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Principles of diagnosis, treatment and prevention of diseases in food and fiber animals. Provides in-clinic and on-farm experience. Required clerkship.
- 631 Food Animal Practice Clerkship**  
Fall, Spring, Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
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:NM: (LCS 630) R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
In-depth, supervised food animal medicine and surgery.
- 633 Dairy Production Medicine Clerkship**  
Fall, Spring, Summer. 3 credits. P:NM: (LCS 630 and LCS 643) or permission of course moderator R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Dairy farm and herd health management. Record keeping, general management, housing, nutrition. Mastitis control.
- 634 Swine Production Medicine Clerkship**  
Fall, Spring. 3 credits. P:NM: Permission of course moderator R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Swine diseases and related production problems encountered in swine herd health programs.
- 637 Advanced Dairy Production Medicine**  
Fall, Spring, Summer. 3 credits. P:NM: (LCS 633 and LCS 643) or permission of course moderator R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Topics related to enhancing profitability, decreasing disease, and improving management of dairy farms.
- 638 Beef Production Medicine**  
Fall. 3 credits. P:NM: (LCS 630 or LCS 631) and (LCS 643) or permission of course moderator. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Veterinary management of production and health of beef cattle. Optional visits to out-of-state facilities may be offered.
- 639 Small Ruminant Medicine**  
Fall, Spring, Summer. 3 credits. P:NM: (LCS 643) or permission of course moderator R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Health care to small ruminants on an individual and flock or herd basis. Emphasis on sheep.
- 640 Large Animal Anesthesia Clerkship**  
Fall, Spring, Summer. 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.  
Concepts and supervised practice in large animal anesthesiology.
- 641 Food Animal Theriogenology**  
Fall, Spring, Summer. 3 credits. P:NM: (LCS 630 and LCS 643) or permission of course moderator R: Completion of semester 5 of the graduate-professional program in the 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**  
Spring. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Skills related to food animal veterinary practice.
- 645 Ruminant Nutrition Clerkship**  
Summer. 3(2-1) R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Application of basic nutrition principles to commercial dairy, beef, and sheep feeding systems. Estimation of nutrient requirements and evaluation of diets and feeding management. Ration formulation and nutritional assessment. Problem solving and field work required.
- 646 Equine Neonatal Medicine Clerkship**  
Summer. 3 credits. R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Principles of breeding farm management and diagnosis and treatment of equine neonatal disorders. Supervised, in-clinic experience. Elective clerkship.
- 677 Veterinary Preceptorship**  
Fall, Spring, Summer. 3 credits. P:NM: (LCS 620 or LCS 621 or LCS 630 or LCS 631) R: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine.  
Applied large animal clinical science in private practices. Supervised off-campus experience.
- 678 Government and Corporate Veterinary Practice**  
Spring. 3 credits. R: Completion of semester 5 of the graduate-professional program 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 years. 2(1-2) P:NM: 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.
- 829 Design and Conduct of Epidemiological Studies and Clinical Trials**  
Spring. 3(2-2) Interdepartmental with Epidemiology. P:NM: (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  
Master's thesis research.
- 901 Investigating the Lung**  
Fall of even years. 2(2-0) Interdepartmental with Physiology; Pathology. R: Open only to graduate students.  
Integrative biology of the lung; structure and function; molecular, cellular, and organ responses to 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 doctoral students in Large Animal Clinical Sciences.  
Doctoral dissertation research.

## 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:M: (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:M: (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:M: (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 years. 3(3-0) P:M: (LTN 202) and completion of Tier I writing requirement. Cicero, Caesar, Sallust, Plautus, Terence, Catullus, and Lucretius.
- 302 Augustan Poetry (W)**  
Spring of odd years. 3(3-0) P:M: (LTN 202) and completion of Tier I writing requirement. Poetry of Virgil, Horace, Propertius, Tibullus, and Ovid.

- 401 Augustan and Early Imperial Prose**  
Fall of odd years. 3(3-0) P:M: (LTN 302)  
Augustan and Early Imperial prose writers. Livy, Augustus, Tacitus, Petronius, Suetonius, and others.
- 402 Imperial Poetry**  
Spring of even years. 3(3-0) P:M: (LTN 302)  
Poets of the Empire: Lucan, Seneca, Persius, Juvenal, Silius Italicus, Statius, and others.
- 490 Independent Study**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of department.  
Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.
- 499 Senior Thesis**  
Fall, Spring. 3 credits. P:M: (LTN 402) R: Approval of department.  
Senior thesis under the direction of a faculty member.

## LINGUISTICS

## LIN

### Department of Linguistics and Germanic, Slavic, Asian and African Languages College of Arts and Letters

- 140 Languages of the World**  
Spring. 3(3-0)  
Survey of world linguistic diversity: language and dialect, language families, diversification, and language death. Survey of major languages, language types, and writing systems. Bilingualism and multilingualism. Case studies concerning relation of language and nationhood, education, and religion.
- 200 Introduction to Language**  
Fall, Spring. 3(3-0) Not open to students with credit in LIN 401.  
Linguistic structure of language. Applications of linguistics to other disciplines. Human and societal aspects of the nature, use, acquisition, and history of languages.
- 225 Women and Language**  
Fall. 3(3-0) Interdepartmental with Women's Studies.  
Women and language in societies around the world. Issues such as status and verbal politeness, importance of names, gender differences in language use, women's multilingualism, sexist language, gendered language development in children.
- 291 Special Topics in Linguistics**  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course.  
Special topics supplementing regular course offerings proposed by faculty on a group study basis.
- 360 Postcolonial Literature and Theory**  
Fall, Spring. 3(3-0) Interdepartmental with English; Romance Languages. Administered by Department of English. P:M: Completion of Tier I writing requirement. P:NM: 3 credits of literature. SA: LL 360  
Theories and literatures involving colonialism, decolonization, neocolonialism, cultural and political independence. Texts drawn principally from Asia, Africa, the Caribbean, Latin America and various diaspora communities.

- 401 Introduction to Linguistics**  
Fall, Spring. 4(4-0) Not open to students with credit in LIN 200.  
Basic goals, concepts, methods, and research results of modern theoretical and applied linguistics. Examples from a variety of languages.
- 411 History of Linguistics**  
Spring. 3(3-0) P:M: (LIN 200 or LIN 401)  
Origin and development of linguistic studies from ancient Greece to the present. Foundation for the understanding of contemporary issues in linguistics and in society.
- 424 Introduction to Phonetics and Phonology**  
Fall, Spring. 3(3-0) P:M: (LIN 200 or LIN 401)  
Phonetics, phonetic features and components, phonological phenomena, phonemic analysis, sound systems and data analysis.
- 428 Writing Systems**  
Fall of odd years. 3(3-0) P:M: (LIN 200 or LIN 401)  
Writing systems of the world and their history and organization in the context of linguistic science. Special attention is given to the typology of these systems and the ways they relate to the structure of spoken language.
- 431 Morphological and Syntactic Phenomena**  
Fall. 4(4-0) P:M: (LIN 424 or concurrently)  
Structure of words, phrases, clauses, and sentences. Relations among words. Examples from languages of the world, and formal methods for their description.
- 434 Introduction to Syntax**  
Fall, Spring. 3(3-0) P:M: (LIN 200 or LIN 401)  
Structure of sentences and structural relations among phrases. Methods of syntactic analysis and argumentation.
- 437 Semantics and Pragmatics**  
Fall. 3(3-0) P:M: (LIN 200 or LIN 401)  
Semantic properties and relations. Entailment, ambiguity, theories of word and sentence meaning, and logical form. Topics in pragmatics, such as presupposition, conversational implicature, speech acts.
- 441 Historical Linguistics**  
Fall. 3(3-0)  
Types of linguistic change and the methods used by linguists to study the historical development of languages and language families.
- 450 Child Language Acquisition**  
Spring. 3(3-0) P:M: (LIN 200 or LIN 401)  
Linguistic issues, perspectives and research on the acquisition of language by children. Phonology, lexicon, morphology, syntax, semantics. Universal principles, variation, contexts. Implications for related disciplines.
- 455 Neurolinguistics**  
Fall. 3(3-0) P:M: (LIN 200 or LIN 401)  
Theoretical approaches to the study of language and the brain. Perspectives on normal and impaired linguistic functioning offered by lesion studies and brain-imaging techniques. The genetic basis of language as evidenced in family and twin studies.