492 Senior Seminar
Fall. 2(2-0) R: Open only to seniors in the Department of Theatre. Approval of department.
Contemporary theatre, dance, and performance theory and practice.

494 Performance Tour
Fall, Spring. 3(0-6) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department; open only to cast members of touring production.
Rehearsal for and participation in the various departmental touring productions.

URBAN PLANNING UP

Department of Geography
College of Social Science

100 The City
Spring. 3(3-0)
Evolution, character, dimensions and elements of cities.

201 The Role of Planning in Urban and Regional Development
Fall, Spring. 4(4-0)
Contemporary urban issues, historical contexts, and the role of planning in the solutions of the problems faced by cities and their surrounding regions.

314 Methods for Investigation of Urban Systems
Spring. 4(3-2) Interdepartmental with Geography. P:M: (STT 201 and CSE 101) RB: (UP 201)
Models, approaches, and techniques for urban and regional problem analysis, research, program evaluation, and project management. Application of related computer software.

324 Visual Communication and the Design Process
Fall. 4(2-4) P:M: (UP 201 or concurrently) R: Open only to sophomores or juniors or seniors in Urban and Regional Planning. SA: UP 231, UP 233, UP 334
Expressing concepts in visual terms for solutions to physical planning projects: graphic techniques and reproduction. Using the design process for solving land use problems: inventory, analysis, synthesis, community input and strategies for implementation.

343 Planning Theory: Ethics and Politics (W)
Spring. 4(4-0) P:M: (UP 201 or concurrently) and completion of Tier I writing requirement. R: Open only to sophomores or juniors or seniors in the College of Social Science. SA: UP 344
Political impact of community decision-making on planning. Ethics and values of professional practice. Gender, equity, and diversity issues within this context will be explored.

353 Land Use Planning
Fall. 4(4-0) P:M: (UP 201 or concurrently) RB: (PLS 100) SA: UP 323
Principles and techniques of land use planning, including role of social, economic and political systems. Comprehensive planning, neighborhood/sector planning, practical tools for land regulation and environmentally sensitive development.

365 Planning Law (W)
Spring. 3(3-0) P:M: (UP 201) and completion of Tier I writing requirement. R: Open only to juniors or seniors in Urban and Regional Planning or Interdisciplinary Studies in Social Science majors. SA: UP 465
Statutory and case law for local government planning and development regulation.

400 Special Topics in Urban Planning
Fall, Spring. 2 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P:M: Completion of Tier I writing requirement. R: Open only to juniors or seniors or graduate students in Urban and Regional Planning.
Issues and problems in contemporary urban planning.

408 Comparative Urban Development Planning
Spring. 3(3-0) RB: (UP 201) R: Open only to majors in Urban and Regional Planning, or Urban and Regional Planning-Urban Studies.
Community planning concepts and practices, tools and techniques in different countries. Case studies.

413 Urban Geography
Fall. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. R: Not open to freshmen or sophomores.
Theories and models of urban spatial form. Underlying structures and processes. Socio-spatial dimensions of modern urbanism. Differentiation and locational conflict in residential, commercial, and industrial space.

414 Geography of Transportation
Fall of odd years. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. P:M: (GEO 113) R: Not open to freshmen.
Spatial principles of transportation. Theories of interaction, network structures, and location-allocation models. Role of transport and transport planning.

415 Location Theory and Land Use Analysis
Fall. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. P:M: (GEO 113 or UP 201) RB: One of the prerequisites or an introductory ECON course. R: Not open to freshmen or sophomores.
Classical and neoclassical, static and dynamic models of industrial location and spatial organization. Land rent theory. Central place theory. Multilocational organization. Growth transmission.

418 The Ghetto
Fall of odd years. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. R: Not open to freshmen or sophomores.
Analysis of the ghetto including its spatial organization and structure. Distribution of racial and ethnic populations. Emphasis on U.S. cities.

425 Geographic Information Systems
Spring. 4(3-2) Interdepartmental with Geography. Administered by Department of Geography. P:M: (GEO 221)
Technical and theoretical issues in the design, evaluation, and implementation of geographic information systems for research and application.

437 Urban Design
Fall of even years. 3(1-4) R: Not open to freshmen or sophomores.
Urban design theory and application of physical design principles at various scales. Design of urban open space systems, building groupings, urban linkage, and site details in studio projects.

439 Golf Course Planning and Design
Fall of even years. 3(3-0) Interdepartmental with Landscape Architecture. RB: (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.

454 Local Economic Planning
Fall. 3(3-0) P:M: (UP 353 and EC 201) RB: (UP 201) R: Open only to seniors in the College of Social Science. SA: UP 354
The economic component of comprehensive community planning. Taxation and services delivery. Fiscal health and physical and social development of a community.

457 Local Economic Development
Fall. 3(2-2) R: Open only to juniors or seniors.
Principles and techniques of local economic development planning. Impacts of state, federal, and global economic policies and programs.

458 Housing and Real Estate Development
Spring of even years. 3(2-2)
Real estate development process from idea inception to asset management. Finance, organization, design and implementation. Housing, social impacts, and public sector involvement.

463 Introduction to Quantitative Methods for Geographers and Planners
Fall. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. RB: Completion of University mathematics requirement. R: Open only to majors in Geography, Urban Planning, and Landscape Architecture.
Quantitative techniques in the analysis and classification of spatial data.

478 Urban Transportation Planning
Spring. 3(3-0) Interdepartmental with Geography. R: Open only to juniors or seniors in Urban and Regional Planning or Geography or approval of department.
Principles of decision-making in urban transportation planning. Demand and supply analysis, social and environmental impacts, implementation programs. Use of computer models.

480 Internship in Urban Planning
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 majors in Urban and Regional Planning or Urban and Regional Planning-Urban Studies. Approval of department.
Supervised planning experience in a professional setting.

490 Independent Study in Urban Planning
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of department.
Faculty-supervised individual study in aspects of urban planning.

494 Planning Practicum
Spring. 4(0-8) P:M: (UP 365 and UP 454) SA: UP 494A, UP 494B
Collection, analysis and synthesis of planning information for an established urban or regional area. Problem identification and alternative plan formulation. Formulation of comprehensive physical development policies and plans, implementation of programs.

VETERINARY MEDICINE VM

College of Veterinary Medicine

101 Veterinary Medicine in Society
Spring. 1(1-0)
Role of the veterinary profession in animal and human health. Impact of veterinary medicine on society.

110 Veterinary Medical Terminology
Fall. 1(1-0) R: Open only to Veterinary Technology majors.
Veterinary medical terminology, focusing on fundamental recognition, interpretation and usage of medical terms.

120 Applied Biochemistry and Nutrients for Veterinary Technicians
Fall. 2(2-0) R: Open only to Veterinary Technology majors.
Basic fundamentals of cell structure and metabolism. Energy metabolism, nutrients and nutrient requirements of common domestic species.

130 Comparative Anatomy for Veterinary Technicians
Fall. 2(1-2) R: Open only to Veterinary Technology majors.
Gross anatomy of the common animal species encountered in veterinary medicine. Overview of the functional anatomy of the musculoskeletal, digestive, cardiovascular, cutaneous, respiratory, urogenital, nervous, and endocrine systems and the special senses.

140 Pharmacology for Veterinary Technicians
Fall. 2(2-0) R: Open only to Veterinary Technology majors.
Fundamentals of characteristics, classification and usage of veterinary pharmaceuticals. Introduction to and application of dosage and formulation calculations.

150 Hospital Procedures and Communication
Spring. 2(2-0) P:M: (VM 110 and VM 140) R: Open only to Veterinary Technology majors.
Development of various modalities of professional and client communication skills.

155 Veterinary Technology Careers and Professional Development
Fall. 1(1-0) R: Open only to Veterinary Technology majors.
Career options in veterinary technology, discussion of professional, ethical and legal considerations. Portfolio development, resume and cover-letter writing skills.

160 Small Animal Nursing Skills
Spring. 2(1-3) P:M: (VM 110 and VM 130 and VM 140) R: Open only to Veterinary Technology majors.
Small animal nursing including principles of restraint, physical examination, medical management techniques, and behavior of common companion animals. Recognition of common canine and feline breeds.

165 Large Animal and Laboratory Animal Nursing Care Techniques
Fall. 2(1-2) P:M: (VM 110 and VM 130 and VM 140) R: Open only to Veterinary Technology majors.
Fundamentals of the handling of equine, food animal and laboratory animal species. Breed identification, specimen collection, physical exam, medication administration and other nursing care procedures relevant to the species.

170 Hematology and Immunology for Veterinary Technicians
Spring. 2(2-0) P:M: (VM 110 and VM 120) R: Open only to Veterinary Technology majors. C: VM 175 concurrently.
Structure and function of normal blood cells, cellular and humoral immunity, mechanisms of hemostasis, blood group serology, transfusion medicine and vaccinology.

175 Clinical Pathology Laboratory I for Veterinary Technicians
Spring. 1(0-2) P:M: (VM 110 and VM 120) R: Open only to Veterinary Technology majors. C: VM 170 concurrently.
Veterinary clinical pathology laboratory including diagnostic procedures in hematology, serology and ELISA methodology.

176 Clinical Pathology Laboratory II for Veterinary Technicians
Fall. 1(0-2) P:M: (VM 175 and VM 170) R: Open only to Veterinary Technology majors.
Comprehensive veterinary clinical pathology laboratory, including diagnostic procedures in urology, dermatology, cytology, and advanced methods in hematology

210 Surgical Nursing for Veterinary Technicians
Fall. 2(2-0) P:M: (VM 160) R: Open only to Veterinary Technology majors. C: VM 215 concurrently, VM 303 concurrently.
Role of the veterinary technician as a member of the veterinary surgical team.

215 Surgical Nursing and Anesthetic Management Laboratory
Fall. 1(0-4) R: Open only to Veterinary Technology majors. C: VM 210 concurrently, VM 303 concurrently.
Principles and techniques in veterinary surgical nursing and anesthesia.

245 Parasitology for Veterinary Technicians
Spring. 2(1-2) P:M: (VM 140 and VM 175) RB: (VM 250) R: Open only to Veterinary Technology majors.
Parasites of veterinary and public health importance, including gross and microscopic morphology, transmission, and control.

250 Veterinary Comparative Clinical Physiology
Spring. 5(5-0) P:M: (VM 110 and VM 120 and VM 130) R: Open only to Veterinary Technology majors.
Function, regulation and integration of organs and organ systems of common domestic species. Concepts with clinical relevance.

255 Small Animal Diseases and Management
Fall. 3(3-0) P:M: (VM 160 and VM 170 and VM 250) R: Open only to Veterinary Technology majors.
Pathophysiology, transmission, diagnostic process, clinical management and prevention of canine and feline diseases.

265 Dentistry Techniques for Veterinary Technicians
Spring. 1(0-4) P:M: (VM 215) R: Open only to Veterinary Technology majors.
Veterinary dental techniques and oral cavity assessment for companion animals.

270 Health Care Development for Veterinary Technicians
Spring. 1(0-3) P:M: (VM 210 and VM 215 and VM 255) R: Open only to Veterinary Technology majors.
Service-oriented approach to the health care development in an operational animal care facility.

275 Large Animal Diseases and Management
Spring. 3(3-0) P:M: (VM 165 and VM 170 and VM 250) R: Open only to Veterinary Technology majors.
Diseases, husbandry, preventative health care and client education for equine and food animal species.

285 Clinical Nutrition for Veterinary Technologists
Fall. 1(1-0) P:M: (VM 250) R: Open only to Veterinary Technology majors.
Nutritional assessment and management of common domestic species in veterinary medicine.

290 Special Studies in Veterinary Medicine
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 Pre-Veterinary and Veterinary Technology majors.
Faculty-directed individual study on an experimental, theoretical or applied problem. May involve a supervised off-campus experience.

295 Biomedical Research and Regulatory Issues for Veterinary Technologists
Fall. 1(1-0) P:M: (VM 150) R: Open only to Veterinary Technology majors.
Principles and techniques of biomedical research, governance and regulation of animal care and use.