

315. The Black African Diaspora and World Civilization
Spring. 3(3-0) Administered jointly by the College of Arts and Letters and the College of Social Science. The College of Social Science is the primary administrative unit. P: One IAH course, one ISS course. R: Not open to freshmen and sophomores. Completion of Tier I writing requirement.
 Demography, history, and culture of the Black African Diaspora. Relation of that Diaspora to Africa. Cultural and material strategies for survival. Heritage of domination and oppression and geo-social mobility. Displacement and migration.

321. The Science of Sound from Pythagoras to Digital
Fall, Spring. 3(3-0) Administered jointly by the College of Arts and Letters, College of Communication Arts and Sciences, College of Natural Science, and the College of Social Science. The College of Social Science is the primary administrative unit. P: Completion of Tier I writing requirement. Two IAH courses, one ISB course, one ISP course, two ISS courses.
 Introduction to acoustics emphasizing basic physical, physiological, and psychological principles with application to speech, communications, musical instruments, room acoustics, and analog and digital audio.

350. Land and Society
Fall, Spring. 3(3-0) Administered jointly by the College of Agriculture and Natural Resources and the College of Social Science. The College of Agriculture and Natural Resources is the primary administrative unit. P: IAH 201, one ISS course. R: Open only to juniors and seniors. Completion of Tier I writing requirement.
 Environmental impact of decisions by individuals, communities, and societies on use of land resources in production and utilization of food, fiber, and fuel.

356. The Impact of the Automobile
Fall. 3(3-0) Administered jointly by the College of Agriculture and Natural Resources, College of Arts and Letters, College of Engineering, and the College of Social Science. The College of Agriculture and Natural Resources is the primary administrative unit. P: Completion of one IAH course, one ISS course, and one ISB or ISP course. R: Open only to juniors and seniors.
 The automobile as a primary influence on society in the twentieth century: changes in economics, technology, land use, energy sources, environmental quality, and family and individual values.

URBAN PLANNING UP

**Department of Geography
College of Social Science**

201. The Role of Planning in Urban and Regional Development
Fall. 3(3-0)
 Contemporary urban issues, historical contexts, and the role of planning in the solutions of the problems faced by cities and their surrounding regions.

231. Presentation Techniques
Fall. 2(0-4) R: Open only to students in College of Social Science. Not open to students with credit in LA 220.
 Uses of graphic, photographic, video, and computer generated media to make presentations to clients and community groups.

233. Site Design for Planners and Developers
Fall. 2(0-4) P: UP 231. R: Open only to students in the College of Social Science.
 Designing a site for a development project: soils, drainage, elevations, view, topography, utilities, wetlands, and other elements.

313. Introduction to Data Analysis for Urban and Regional Planners
Fall. 3(2-2) Interdepartmental with Geography. P: CSE 101 or CSE 131; UP 201.
 Data gathering analysis, information presentation, and basic techniques of urban planning. Application of related computer programs and software.

314. Methods for Investigation of Urban Systems
Spring. 3(2-2) Interdepartmental with Geography. P: UP 313.
 Models, approaches, and techniques for urban and regional problem analysis and plan formulation.

323. Land and Environmental Planning
Fall. 3(3-0) P: UP 201.
 Principles and techniques of environmental and land use planning. Environmentally sensitive management of growth and change at both urban and regional levels.

334. Real Estate Project Design
Spring. 4(2-4) P: UP 233.
 Subdivision design, criteria, and standards. Integrating activities, structures, and spaces on parcels of varying sizes and configurations.

344. Ethics and Politics in Planning (W)
Spring. 3(3-0) P: UP 201. R: Completion of Tier I writing requirement.
 Political impact of community decision-making on planning. Ethics and values of professional practice.

354. Local Economic Planning
Spring. 3(3-0) P: UP 201, EC 201 or approval of department.
 The economic component of comprehensive community planning. Taxation and services delivery. Fiscal health and physical and social development of a community.

400. Special Topics in Urban Planning
Fall of odd years. 2 to 4 credits. R: Open only to juniors and seniors in Urban and Regional Planning.
 Issues and problems in contemporary urban planning.

413. Urban Geography
Fall. 3(3-0) Interdepartmental with Geography. Administered by Geography. P: GEO 113. R: Not open to freshmen and 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 Geography. P: 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 Geography. P: GEO 113. R: Not open to freshmen.
 Classical and neoclassical, static and dynamic models of industrial location and spatial organization. Land rent theory. Central place theory. Multi-locational organization. Growth transmission.

417. Information Systems and Program Evaluation in Urban Planning
Fall. 3(2-2) P: UP 314 or approval of department. R: Open only to majors in Urban and Regional Planning, or Urban and Regional Planning-Urban Studies or Public Administration.
 Systems and methods for surveillance, monitoring, management and evaluation of development projects, social programs and public policies.

418. The Ghetto
Fall of odd years. 3(3-0) Interdepartmental with Geography. Administered by Geography. P: GEO 413 or SOC 375 or UP 201 or ISS 320 or MC 343 or MC 384 or approval of department. R: Not open to freshmen and 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 Geography. P: GEO 221.
 Technical and theoretical issues in the design, evaluation, and implementation of geographic information systems for research and application.

427. Mine Land Reclamation Planning
Fall of odd years. 3(3-0) P: UP 334. R: Open only to majors in Urban and Regional Planning or Urban and Regional Planning-Urban Studies or Landscape Architecture or Resource Development or Resource Development-Urban Studies.
 Issues, procedures, and opportunities in mine land reclamation.

428. Principles of Regional Planning
Fall. 3(3-0) P: GEO 113 or UP 201. R: Not open to freshmen and sophomores.
 Principles and theoretical issues of regional planning. Applied spatial analysis techniques. Policies and procedures.

Descriptions—Urban Planning of Courses

437. Urban Design

Fall of even years. 3(1-4) P: UP 334 or LA 473 concurrently. R: Not open to freshmen and 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. P: UP 344 or LA 342. R: Open only to seniors and 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.

457. Local Economic Development

Fall. 3(2-2) P: UP 354. R: Open only to juniors and 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) P: UP 354.

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 Geography. P: 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.

465. Planning Law I (W)

Fall. 3(3-0) P: UP 344. R: Not open to freshmen and sophomores. Completion of Tier I writing requirement.

Statutory and case law for local government planning and development regulation.

468. Planning Law II

Spring. 3(3-0) P: UP 465.

Advanced topics in urban planning legislation and case law.

478. Urban Transportation Planning

Spring. 3(3-0) Interdepartmental with Geography. P: UP 201, UP 314. R: Open only to majors in Geography or Urban and Regional Planning 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.

483. Historic Preservation and Preservation Planning in the U.S.

Fall. 4(4-0) Interdepartmental with History of Art; and Landscape Architecture. R: Not open to freshmen and 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 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 and sophomores. Approval of department.

Faculty-supervised individual study in aspects of urban planning.

494A. Senior Planning Practicum I

Fall. 3(0-6) R: Open only to seniors in Urban and Regional Planning.

Collection, analysis and synthesis of planning information for an established urban or regional area. Problem identification and alternative plan formulation. Senior examination.

SA: UP 485

494B. Senior Planning Practicum II

Spring. 3(0-6) P: UP 485.

Further synthesis of planning information. Formulation of comprehensive physical development policies and plans, and implementation of programs.

SA: UP 486

800. Special Topics in Urban Planning

Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Urban and Regional Planning.

Issues and current research in urban planning.

801. Concepts and Issues in Planning and Development

Fall. 4(4-0)

Urban and regional planning and development. History of the planning profession. Current urban issues and planning approaches.

814. Applied Research Methods for Planning and Development

Spring. 3(2-2) Interdepartmental with Geography. P: UP 813. R: Open only to graduate students in Urban and Regional Planning, Public Administration, and Geography.

Techniques in urban and regional planning analysis. Forecasting models. Methods of urban project evaluation.

823. Urban Land Management

Fall. 4(4-0) P: UP 801 or concurrently.

Concepts, principles, tools, and techniques of urban and regional land management. Land use planning, public facilities, infrastructure location, and environmental sensitivity in land management.

834. Urban Design and Project Development

Spring. 3(1-4) P: UP 801. R: Open only to graduate students in Urban and Regional Planning.

Design of development projects. Integration of structures, spaces, activities, and design elements in various urban settings.

838. Land Use Law

Spring. 3(3-0) Interdepartmental with Resource Development; Agricultural Economics; Forestry. Administered by Resource Development. P: RD 430.

Public and private land use controls in the U.S. Civil rights, housing, energy problems, growth management, waste management, and land conservation. Cases, statutes and other regulations.

SA: RD 834

844. Decision Theory for Urban Planning and Development

Spring. 4(4-0) P: UP 801 or two graduate courses in the Master of Public Administration program.

The planning and development process. Decision making in a political context. Professional ethics and practice. Gender, class, race and ethnicity in relationship to planning and development.

848. Urban Policy Analysis

Spring. 3(3-0)

History of national urban policy. Developmental stages in processing new public policies.

854. Economics of Planning and Development

Spring. 3(3-0) Interdepartmental with Geography. P: UP 801.

The physical urban environment and local economic development.

865. Planning and Development Law

Fall. 3(3-0) P: UP 801.

Constitutional and statutory bases for planning and development. Effects of case law on design, administration, and implementation of regulations.

867. Methods and Modeling in Regional Science

Spring of even years. 3(3-0) Interdepartmental with Geography; and Resource Development. Administered by Geography. P: EC 820, GEO 865; GEO 415 or RD 461.

Techniques for regional research: economic base analysis, input-output analysis, mathematical programming, and econometric and simulation analysis.

889. Master's Research

Fall, Spring, Summer. 3 credits. P: UP 897 or concurrently. R: Open only to master's students in the Urban and Regional Planning major. Approval of department.

Supervised individual research for Plan B master's program.

890. Independent Study

Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of department.

Faculty-supervised study in aspects of urban planning.

893. 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: Approval of department.

Supervised individual experience in approved agencies and departments in the Lansing area.

894. Planning Practicum
Fall. 4(0-8) P: UP 801, UP 823, UP 865 R: Open only to second-year master's students in the Urban and Regional Planning major.

Professional practice in the collection, analysis and synthesis of information by students or student groups under faculty supervision. Developing solutions to specific urban problems.
SA: UP 894A, UP 894B

897. Research Writing Seminar
Fall. 2(2-0) R: Open only to second-year master's students in the Urban and Regional Planning major.
Research writing and presentation methods.

899. Master's Thesis Research
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: UP 897 or concurrently. R: Approval of department.

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.

200. Veterinary Systems Biology and Medical Science I
Spring. 7(5-4) P: CEM 141, MTH 110. R: Approval of college.
Multidisciplinary approach to the musculoskeletal system of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care of animals. Techniques of restraint. Patient management. Medical record keeping.

201. Veterinary Systems Biology and Medical Science II
Spring. 7(5-4) P: CEM 141, MTH 110. R: Approval of college.
Multidisciplinary approach to the hematopoietic and cardiovascular systems of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to health and disease.

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: Approval of college.
Directed individual study by a faculty member on an experimental, theoretical or applied problem. May involve a supervised off-campus experience.

300. Veterinary Systems Biology and Medical Science III
Fall. 7(5-4) P: VM 200, VM 201. R: Open only to students in Veterinary Technology. Completion of Tier I writing requirement. Approval of college.
Multidisciplinary approach to the neurologic and respiratory systems of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to health and disease.

301. Veterinary Systems Biology and Medical Science IV
Fall. 7(5-4) P: VM 200, VM 201. R: Open only to students in Veterinary Technology. Completion of Tier I writing requirement. Approval of college.
Multidisciplinary approach to the urinogenital and endocrine systems of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to health and disease.

302. Veterinary Systems Biology and Medical Science V
Spring. 7(5-4) P: VM 300, VM 301. R: Open only to students in Veterinary Technology. Completion of Tier I writing requirement. Approval of college.
Multidisciplinary approach to the gastrointestinal and integumentary systems of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to health and disease.

303. Anesthesiology for Veterinary Technicians
Spring. 2 credits. P: VM 300, VM 301. R: Open only to students in Veterinary Technology. Approval of college.
Pharmacologic action of preanesthetic and anesthetic drugs. Principles and techniques of induction, maintenance, monitoring, and recovery of the patient. Humane methods of euthanasia. Offered half of semester.

304. Radiology for Veterinary Technicians
Spring. 2 credits. P: VM 300, VM 301. R: Open only to students in Veterinary Technology. Approval of college.
Fundamentals of radiology. Production of x-rays, components of the x-ray machine, use of screens and grids, handling film, imaging quality, film processing, patient positioning, and radiation safety. Offered half of semester.

369. Introduction to Zoo and Aquarium Science
Spring. 3(3-0) Interdepartmental with Zoology; Landscape Architecture; Fisheries and Wildlife; and Park, Recreation and Tourism Resources. Administered by Zoology. P: (BS 110 or LBS 144 or LBS 148H)
Fundamentals of zoo and aquarium operations including research, interpretation, design, nutrition, captive breeding, conservation, ethics and management.

400. Laboratory Animal Technology
Fall. 2(1-2) P: VM 300, VM 301, VM 302. R: Open only to seniors in Veterinary Technology. Approval of college.
Animal husbandry, nutrition, preventative medicine, and medical management of common laboratory animals. Pathophysiology of selected diseases.

401. Clinical and Anatomic Pathology for Veterinary Technologists
Fall. 2(1-2) P: VM 300, VM 301, VM 302. R: Open only to seniors in Veterinary Technology. Approval of college.
Advanced cytologic techniques encompassing sample collection, processing, and evaluation. Necropsy procedures including history collection, lesion description, specimen submission, and client education concerning necropsy reports.

402. Hospital Practice Management for Veterinary Technologists
Spring. 3(3-0) R: Open only to seniors in Veterinary Technology. Approval of college.
Veterinary practice economics, personnel management, inventory control, and marketing techniques. Lecture material is reinforced through the utilization of computerized models.

403. Companion Animal Nutrition and Behavior for Veterinary Technologists
Spring. 2(2-0) P: VM 300, VM 301, VM 302. R: Open only to seniors in Veterinary Technology. Completion of Tier I writing requirement. Approval of college.
Nutritional management of healthy and diseased canine and feline patients. Normal canine and feline behavior, behavioral abnormalities, and behavioral modification.

404. Equine and Food Animal Nutrition and Husbandry
Spring. 2(2-0) P: VM 300, VM 301, VM 302. R: Open only to seniors in Veterinary Technology. Completion of Tier I writing requirement. Approval of college.
Comparative nutrition, feeding behaviors, and husbandry as applied to equine and food animal patients. Individual and herd information.

410. Veterinary Technology Clerkship in Anesthesiology
Fall, Spring, Summer. 3 credits. P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in anesthesiology.

411. Veterinary Technology Clerkship in Radiology
Fall, Spring, Summer. 3 credits. P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in radiology.

412. Veterinary Technology Clerkship in Companion Animal Medicine
Fall, Spring, Summer. 3 credits. P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in restraint, examination, nursing care, monitoring, and preventative medicine of companion animals.

413. Veterinary Technology Clerkship in Companion Animal Surgery
Fall, Spring, Summer. 3 credits. P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in surgical nursing.

414. Veterinary Technology Clerkship in Equine Medicine and Surgery
Fall, Spring, Summer. 3 credits. P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in equine medicine and surgery.

450. Veterinary Technology Clerkship in Emergency Medicine
Fall, Spring, Summer. 3 credits. P: VM 412. R: Approval of college.
Application of principles and techniques in emergency medicine.