307. Feminist Perspectives on Women in Culture and Society
Fall, 3(3-0)
R: Open only to juniors and seniors.
Feminist perspectives on women and gender involving questions of gender diversity and socialization, political movements, sexual orientation, work, and feminist theories.

310. Nutrition and Food Choices: Decisions and Dilemmas
Spring, 3(3-0)
R: Completion of Tier I writing requirement.
Influence of science, history, values, culture, ethics, and political and social systems on nutritional options and food choices.

315. The Black African Diaspora and World Civilization
Spring, 3(3-0)
R: Completion of Tier I writing requirement.

321. The Science of Sound from Pythagoras to Digital
Fall, Spring, 3(3-0)
R: Completion of Tier I writing requirement. Two IAH courses, one ISP course, one ISB course, two ISP 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)
R: IAH 201, one ISB course. Open only to juniors and seniors.
Environmental impact of decision 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)
R: Completion of one IAH course, one ISP course, and one ISB or ISP course.
Automobile as a primary influence on society in the twentieth century: changes in economies, technology, land use, energy sources, environmental quality, and family and individual values.

URBAN PLANNING

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 credits.
R: Open only to students in College of Social Science.
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 credits.
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(3-2) Interdepartmental with Geography.
R: CFS 101 or CFS 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(3-2) Interdepartmental with Geography.
R: UP 201.
Models, approaches, and techniques for urban and regional problem analysis and plan formulation.

334. Real Estate Project Design
Spring, 4(2-4)
R: UP 203.
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)
R: 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)
R: 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-numbered years, 2 to 4 credits.
R: Open only to juniors and seniors in Urban and Regional Planning.
Issues and problems in contemporary urban planning.

408. Comparative Urban Development Planning
Spring, 3(3-0)
R: 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.

412. Urban Geography
Fall, 3(3-0) Interdepartmental with Geography.
R: GEO 113. R: 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-numbered years, 3(3-0) Interdepartmental with Geography.
R: GEO 115. R: 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.
R: GEO 123. R: 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.

Fall, 3(3-2)
R: Completion of Tier I writing requirement.
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-numbered years, 3(3-0) Interdepartmental with Geography.
R: GEO 415 or SOC 375 or UP 201 or ISB 350 or MC 343 or MC 384 or approval of department.
R: Open only to freshmen.
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.
R: 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-numbered years, 3(3-0)
R: 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)
R: GEO 123 or UP 201.
R: Open only to freshmen and sophomores.

437. Urban Design
Fall of even-numbered years, 3(1-4)
R: Open only 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.
443. Golf Course Planning and Design
Fall of even-numbered 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-numbered 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: Open only to freshmen and sophomores. Completion of The 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 Presentation Planning in the U.S.
Fall. 4(4-0) Interdepartmental with History of Art and Landscape Architecture. R: Open only 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 6 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. 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 credits.
P: UP 485. Further synthesis of planning information. Formulation of comprehensive physical development policies and plans, and implementation of programs.
SA: UP 486

891. 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.

893. Quantitative Methods for Urban Planning
Fall. 3(2-2)
P: Open only to graduate students in Urban and Regional Planning. Issues and current research in urban planning.

894. 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.

895. Urban Land Management
Fall. 4(4-0)
P: UP 801 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.

897. 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.

898. 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.

899. 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.

883. Planning Practicum
Fall. 4 credits.
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.

888. Master's Research
Fall. Spring, Summer. 5 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. Urban Policy Analysis
Spring. 3(3-0)
History of national urban policy. Developmental stages in processing new public policies.

894. Economics of Planning and Development
Spring. 3(3-0) Interdepartmental with Geography.
P: UP 801. The physical urban environment and local economic development.

896. 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.

897. Methods and Modeling in Regional Science
Spring of even-numbered 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 economic and physical models. System of decision-making, input-output analysis, mathematical programming, and econometric techniques and analysis.

889. Land Use Law
Spring. 3(3-0) Interdepartmental with Resource Development, Agricultural Economics, and Forestry. Administered by Resource Development.

884. 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.

A-205
VETERINARY MEDICINE

College of Veterinary Medicine

101. Veterinary Medicine in Society

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: CRM 141, MTH 110. R: Approval of college.
Multidisciplinary approach to the musculoskeletal system of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to animals. Techniques of restraint. Patient management. Medical record keeping.

201. Veterinary Systems Biology and Medical Science II

Spring, 7(5-4)
P: CRM 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.

200. 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.

201. 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 urogenital and endocrine systems of animals. Integration of anatomy, physiology, pathophysiology, pharmacology, and nursing care related to health and disease.

202. 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 department.

304. Radiology for Veterinary Technicians

Spring, 2 credits.
P: VM 300, VM 301. R: Open only to students in Veterinary Technology. Approval of college.

305. Introduction to Zoo and Aquarium Science

Spring, 3 credits.
P: VM 300, VM 301, VM 302. R: Open only to seniors in Veterinary Technology. Approval of college.
An integrated approach to the zoo and aquarium sciences. Zootec­nology, zoology, marketing, and public relations.

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.
Technical knowledge and skills related to animal husbandry, nutrition, and health and disease. Application of principles and techniques in animal husbandry.

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.

402. Hospital Practice Management for Veterinary Technologists

Fall, 3(5-0)
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(0-0)
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(0-0)
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 and feeding behaviors of horses and other livestock animals. Application of principles and techniques in animal nutrition.

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 emergency medicine.

413. 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.

414. Veterinary Technology Clerkship in Neurology

Fall, Spring, Summer, 3 credits.
P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in neurology.

415. Veterinary Technology Clerkship in Ophthalmology

Fall, Spring, Summer, 3 credits.
P: VM 302, VM 303, VM 304. R: Approval of college.
Application of principles and techniques in ophthalmology.

416. Veterinary Technology Clerkship in Critical Care

Fall, Spring, Summer, 3 credits.
P: VM 412. R: Approval of college.
Application of principles and techniques in critical care.

417. Veterinary Technology Clerkship in Equine Anesthesiology

Fall, Spring, Summer, 3 credits.
P: VM 414. R: Approval of college.
Application of principles and techniques in equine anesthesiology.

418. Veterinary Technology Clerkship in Equine Field Service

Fall, Spring, Summer, 3 credits.
P: VM 414. R: Approval of college.
Application of principles and techniques in equine field service.