GENERAL BUSINESS AND BUSINESS LAW

Department of Finance
The Eli Broad College of Business and The Eli Broad Graduate School of Management

323 Introduction to Business Law
Fall, Spring. 3(3-0) R: Open only to students in programs for which GBL 323 is a catalog-listed requirement. Not open to students with credit in GBL 395 or GBL 395H.

Introduction to the legal system. Basic concepts of constitutional law, torts, contracts, and product liability. Administrative law and government regulations.

395 Law, Public Policy, and Business
Fall, Spring, Summer. 3(3-0) R: Open only to juniors or seniors in The Eli Broad College of Business. Not open to students in The School of Hospitality Business. Not open to students with credit in GBL 395 or GBL 323.


395H Law, Public Policy, and Business – Honors (W)
Fall. 3(3-0) P:M: Completion of Tier I writing requirement. R: Open only to juniors or seniors in the Honors College. Not open to students with credit in GBL 395H or GBL 323.

Structure of the legal system and basic concepts of constitutional law, torts, contracts, and product liability. Administrative law and government regulation of business.

420 Role of Law and Lawyers in Society (W)
Fall, Spring. 3(3-0) P:M: (GBL 395 or GBL 395H) and completion of Tier I writing requirement. R: Open only to seniors or approval of department.


GEOGRAPHY GEO

Department of Geography
College of Social Science

113 Introduction to Economic Geography
Fall, Spring. 3(3-0)

Spatial distribution of resources, population, enterprise, trade, consumption, and production. Interaction of those distributions at local to global scales.

151 Cultural Geography
Fall. 3(3-0)

Systematic approach to the spatial distribution of cultural features, processes, and relationships.

203 Introduction to Meteorology
Fall. 3(3-0)


204 World Regional Geography
Fall. 3(3-0)

In a time of increasing globalization of economic, political and technological processes, different societies on different continents are responding in various ways. This course explores the conditions that contribute to diversity in different world regions, including economic, social, political and environmental processes.

206 Physical Geography
Fall, Spring. 3(3-0)

Geographic and functional interrelationships within the physical environment. Earth-sun relationships, weather, climate, soils, vegetation and landforms (terrain characteristics).

206L Physical Geography Laboratory
Fall, Spring. 1(0-2) P:M: (GBL 206 or concurrently)

Geographic aspects of weather, climate, soil, vegetation, and terrain. Interpretation and application of maps and remotely sensed imagery.

221 Introduction to Geographic Information
Fall, Spring. 3(2-2) SA: GEO 223, GEO 225 Principles and methods of spatial data collection, handling, analysis, and display. Introduction to remote sensing, geographic information systems, and cartography.
Introduction to Zoogeography
Fall. 3(3-0) Interdepartmental with Zoology;
Fisheries and Wildlife. Administered by Depart-
ment of Zoology. P:M: (ZOL 355)
Patterns of geographical distribution of animals and
the ecological and historical processes leading to
these patterns.

Geography of Plants of North America
Spring of odd years. 3(3-0) R: Not open to
freshmen or sophomores.
Geography of Plants in North America with empha-
sis on the East. Related ecological principles, soils,
and post-Cretaceous geologic history. Some field
instruction.

Agricultural Climatology
Fall of even years. 3(3-0) Interdepartmental with Biosystems Engineering. P:M: (MTH 104 or MTH 110 or MTH 116) R: Not open to freshmen or sophomores, SA: AE 402
Relationships between climate and agriculture in resource assessment, water budget analysis, mete-
orological hazards, pests, crop-yield modeling, and
impacts of global climate change.

Weather Analysis and Forecasting
Spring of odd years. 4(3-2) P:M: (GEO 203) and (MTH 110 or MTH 116)
Dynamic and thermodynamic principles of atmos-
pheric science applied to the development and evolution of extratropical cyclones. Laboratory ses-
sions include analysis of current observations and satellite imagery.

Regional Geomorphology of the United States
Fall of odd years. 3(3-0) P:M: (GEO 366 or GEO 201 or GEO 412 or ISP 203)
Geomorphic characteristics of physiographic regions of the United States.

Soil Geomorphology Field Study
Fall. 4(2-4) P:M: (CSS 210 or GEO 366 or GEO 201 or GEO 412 or ISP 203) R: Not open to freshmen or sophomores.
Common geographic relationships among soils, landforms, and vegetation in lower Michigan. De-
scription, analysis, and genesis of soils and land-
scapes. Surficial processes. Field trips required.

Global Climate Change and Variability
Fall of odd years. 3(3-0) P:M: (GEO 206)
Analysis of climate change and variability at various
place and time scales with emphasis on climate systems, paleoclimatology, global warming, climate
models, and climate impact assessment.

Glacial and Quaternary Geology
Spring. 4(3-2) Interdepartmental with Geo-
logical Sciences. Administered by Depart-
ment of Geological Sciences. RB: (GLG 201 or GEO 306 or GEO 408) R: Not open to freshmen or sophomores.
Glacial and Quaternary geology with emphasis on North America and Europe. Laboratory focuses on
climatic processes. One weekend field trip required.

Urban Geography
Fall. 3(3-0) Interdepartmental with Urban Planning. R: Not open to freshmen or sophomores.
Theories and models of urban spatial form. Underly-
ing structures and processes. Socio-spatial dimen-
sions of modern urbanism. Differentiation and loca-
tional conflict in residential, commercial, and indus-
trial space.

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

Location Theory and Land Use Analysis
Fall. 3(3-0) Interdepartmental with Urban Planning. 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 organiza-
tion. Land rent theory. Central place theory. Multi-
locational organization. Growth transmission.

The Ghetto
Fall of odd years. 3(3-0) Interdepartmental with Urban Planning. R: Not open to fresh-
men or sophomores.
Analysis of the ghetto including its spatial organiza-
tion and structure. Distribution of racial and ethnic
populations. Emphasis on U.S. cities.

Applications of Geographic Information Systems to Natural Resources Management
Spring. 4(2-4) Interdepartmental with Fish-
eries and Wildlife. Forestry; Park, Recrea-
tion and Tourism Resources; Resource De-
velopment; Biosystems Engineering. Admin-
istered by Department of Fisheries and Wildlife. RB: (GEO 221)
The application of geographic information systems, remote sensing, and global positioning systems to integrated planning and management for fish, wild-
life, and related resources.

Cartographic Design and Production
Fall. 4(2-4) P:M: (GEO 221)
Elements of map design including planning, layout,
typography, color theory and selection, and user
issues. Techniques of map production, for both
printed and electronic display.

Advanced Remote Sensing
Fall. 4(3-2) P:M: (GEO 324)
Interaction of solar radiation with the atmosphere, lithosphere, hydrosphere, and biosphere. Intro-
ductory digital image processing. Earth-resources satel-
lite sensors, data products, and applications. Radar and thermal remote sensing.

Geographic Information Systems
Spring. 4(3-2) Interdepartmental with Urban Planning. P:M: (GEO 221)
Technical and theoretical issues in the design, evaluation, and implementation of geographic infor-
mation systems for research and application.

Thematic Cartography
Fall of even years. 4(3-2) P:M: (GEO 221) SA: GEO 326
Principles, techniques, and decision making in the-
matic mapping. Use of computer-mapping and geographic information systems (GIS) software to produce individual thematic maps and map series. Electronic delivery of thematic maps.

Digital Terrain Analysis
Fall of even years. 4(3-2) P:M: (GEO 221) R: Open only to juniors or seniors.
Theoretical and technical issues of collection, man-
gement, analysis, and display of terrain data. Ap-
plication of photogrammetry, geographic information systems, and cartography.

Environmental Ethics in Geography
Fall. 3(3-0) P:M: Completion of Tier I writing requirement. R: Open only to juniors or sen-
Iors.
Ethical dimensions and scientific bases of environ-
mental and spatial controversies arising from land-
scape valuation, control, and alteration.

Geography of Health and Disease
Fall. 3(3-0) P:M: (GEO 113 or GEO 151 or GEO 330 or GEO 333 or GEO 335 or GEO 336 or GEO 337 or GEO 338)
Spatial patterns and processes associated with regional development in selected world areas.

Tourism in Regional Development
Spring of odd years. 3(3-0) RB: (GEO 259 or PRR 213)
The role of tourism in regional development. Exam-
pies from Michigan, and the United States and other
nations. Environmental considerations.

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

Spatial Data Analysis
Spring. 4(3-2) Interdepartmental with Statis-
tics and Probability. P:M: (GEO 463 or STT 200 or STT 201 or STT 231 or STT 315 or STT 351) RB: Basic computer skills, basic mathematiques, basic statistics, geographic in-
formation science. Theory and techniques for statistical analysis of point patterns, spatially continuous data, and data in spatial zones.
478 Urban Transportation Planning
Spring. 3(3-0) Interdepartmental with Urban Planning. Administered by Department of 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 Senior Seminar (W)
Fall. 3(3-0) P.M: Completion of Tier I writing requirement. R: Open only to seniors in Geography. History, philosophy, and methodology of the geographic discipline as it has evolved within academic and social contexts.

485 Senior Seminar in Geography Education
Spring of even years. 3(3-0) P-M: (GEO 113 or GEO 151) and (GEO 204 and GEO 206 and GEO 221 and GEO 330 or concurrently and GEO 333 or concurrently) R: Open only to Geography minors. Geography educational standards will guide the development of knowledge and technical expertise of future K-12 teachers. Emphasis will be on continued learning of geography, integration of physical and human concepts, the role of representation (maps, etc.), and the use of current events, local observations, and technology to integrate geography into the K-12 curriculum.

490 Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of department. Supervised individual study in an area supplementary to regular courses.

492 Geographic Research Problems
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of department. Supervised original research on selected aspects of geography.

494 Remote Sensing Field Techniques
Summer. 2(0-4) P-M: (GEO 424) Collection and processing of field data to coordinate with remotely sensed imagery. Data correction and analysis. The use of global positioning systems (GPS) receivers and of sensors for determining chlorophyll levels and other biophysical properties. Hands-on experiences; considerable time outdoors. Field trips required.

495 Field Study
Fall, Spring. Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Supervised field study in geography.

498 Internship in Geography
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Individual experience in geography in an approved organization.

GEOLOGICAL SCIENCES

Department of Geological Sciences
College of Natural Science

201 The Dynamic Earth
Fall, Spring. 4(3-2) Not open to students with credit in GLG 301. Physical and chemical processes related to the past, present and future behavior of the earth system, and the energy systems that drive these processes. A study of the earth's materials, the earth's surface and the earth's interior.

302 Geology of Michigan
Spring. 3(3-0) P-M: (GLG 201 or ISP 203) Integration of the geological evolution of Michigan with its social and economic development.

303 Oceanography
Fall. 4(4-0) P-M: (CEM 141 or CEM 142 or CEM 151 or CEM 152 or CEM 181H or CEM 182H or LBS 171) and (PHY 183 or PHY 183B or PHY 193H or PHY 231 or PHY 231B or PHY 231C or LBS 271) Physical, chemical, biological, and geological aspects of oceanography: ocean circulation, waves, tides, air-sea interactions, chemical properties of ocean water, ocean productivity, shoreline processes, and sediments.

304 Physical and Biological History of the Earth

306 Environmental Geomorphology
Spring. 3(3-0) Interdepartmental with Geography. Administered by Department of Geography. P-M: (CSS 210 or GEO 203 or GEO 206 or GEO 330 or GEO 333 or GEO 259 or GLG 201 or GLG 304 or ISP 201 or ISP 203 or ISS 310 or RD 201) and completion of Tier I writing requirement. Relationships of running water, weathering, gravity, ice, waves, wind, and biota (including humans) to terrain and soils. Evolution of landscapes. Classical and modern interpretations.

319 Introduction to Earth System Science
Fall, 3(3-0) Interdepartmental with Entomology; Plant Biology; Zoology; Sociology. Administered by Department of Entomology; RB: Completion of one course in biological or physical science. Systems approach to Earth as an integration of geochemical, geophysical, biological and social components. Global dynamics at a variety of spatiotemporal scales. Sustainability of the Earth system.

321 Mineralogy and Geochemistry
Spring. 4(3-2) P-M: (GLG 201 or concurrently) and (CEM 142 or CEM 152 or CEM 182H or LBS 172) and (MTH 132 or LBS 118) Geochemical properties and processes in the origin, modification, structure, dynamics and history of earth materials. Crystallography and crystal chemistry. Mineral classification and identification.

335 Plants Through Time
Spring of odd years. 3(3-0) Interdepartmental with Plant Biology. Administered by Department of Plant Biology. P-M: (BS 110 or PLB 105 or GLG 201 or LBS 144 or LBS 148H) R: Open only to juniors or seniors. SA: BOT 335 Evolutionary history of plants, development of ecosystems, and use of plant fossils in the reconstruction of ancient environments and climate.

351 Structural Geology
Fall. 4(3-2) P-M: (GLG 304 and GLG 361 or concurrently) and (MTH 114 or MTH 116 or LBS 117 or MTH 124 or MTH 126 or MTH 132 or MTH 133 or LBS 118 or LBS 119) RB: Introductory physics. Mechanical behavior and kinematic history of the lithosphere. Stress and strain. Deformation features such as folds, faults and microstructure. Methods of analysis and interpretation. One weekend field trip required.

361 Petrology (W)
Fall. 4(3-2) P-M: (GLG 321) and completion of Tier I writing requirement. SA: GLG 461. Evolution, origin, occurrence and tectonic setting of igneous and metamorphic rocks. Phase relations of igneous and metamorphic systems. Studies of rocks in thin sections.

401 Plate Tectonics (W)
Spring. 4(3-2) P-M: (GLG 304) and (MTH 114 or MTH 116 or LBS 117 or MTH 124 or MTH 126 or MTH 132 or MTH 133 or LBS 118 or LBS 119) and (PHY 183 or PHY 183B or PHY 231 or PHY 231B or PHY 231C or LBS 271) and completion of Tier I writing requirement. R: Not open to graduate students in the Department of Geologic Sciences. SA: GLG 371 Geophysical methods of studying the structure and dynamics of the earth and planets. Plate kinematics and global geodynamic processes, plate margin processes and evolution, marine geology.

411 Hydrogeology
Fall. 4(3-2) RB: (MTH 114 or MTH 116 or LBS 117 or MTH 124 or MTH 126 or MTH 132 or MTH 133 or LBS 118 or LBS 119) R: Not open to freshmen or sophomores. Source, occurrence, and movement of groundwater emphasizing geologic factors and controls.

412 Glacial and Quaternary Geology
Spring. 4(3-2) Interdepartmental with Geography; RB: (GLG 201 or GEO 306 or GEO 408) R: Not open to freshmen or sophomores. Glacial and Quaternary geology with emphasis on North America and Europe. Laboratory focuses on glacial processes. One weekend field trip required.

419 Advanced Earth System Science
Spring. 3(2-0) Interdepartmental with Entomology; Plant Biology; Zoology; Sociology. Administered by Department of Entomology; P-M: (ENT 319) Systems science theory applied to analysis of the biological, geological, physical, and social causes and consequences of global changes. Issues of sustaining the Earth system.