GENERAL BUSINESS AND BUSINESS LAW

GBL 395. Law, Public Policy, and Business (Fall, Spring, Summer. 3(3-0))
R: Juniors and Seniors
Program for which GBL 395 is a ctg-listed requ.
Analysis of the structure of the legal system and basic concepts of constitutional law, torts, contracts, product liability, and administrative law and government regulation of business.
QA: GBL 431, GBL 441, GBL 450

GBL 395H. Law, Public Policy, and Business - Honors (W)
Fall. 3(3-0)
R: Juniors and above Honors Not open to students with credit in GBL 395
Analysis of the structure of the legal system and basic concepts of constitutional law, torts, contracts, product liability, administrative law, and government regulation of business.
QA: GBL 431, GBL 441, GBL 450

420. Role of Law and Lawyers in Society
Fall, Spring. 3(3-0)
P: GBL 395 R: Senior and Above Business
Comparative law, analysis of legislative and judicial processes, role of lawyers, and the relationship to economics and business, social justice. Overview of legal education.
QA: GBL 430

447. Hospitality Law
Fall, Spring. 3(3-0)
P: GBL 395 R: Senior and above HRIM
Legal aspects of hospitality industry including contracts and sales, torts, commercial paper, and organization. Dynamics of the changing work force and employment discrimination. Franchising.
QA: GBL 430, GBL 447

451. Law of Commercial Transactions
Spring. 3(3-0)
P: GBL 395 R: SENIOR OR ABOVE BUSINESS
Law of contracts and sales, commercial paper, secured transactions, consumer credit, and debtor-creditor relationship.
QA: GBL 450, GBL 451

460. International Law and Business
Spring. 3(3-0)
P: GBL 395 R: Senior and Above Business
An overview of international law and its impact on international business. Government regulation of international business.
QA: GBL 460

480. Corporate and Professional Social Responsibility
Spring. 3(3-0)
P: GBL 395 R: Seniors and Above Business
Institutionalization of American working life, large business institutions and the law, control of large business institutions, social obligations of corporations and professions, impact of institutional values on individual values.
QA: GBL 430

490. Special Problems - Independent Study
Fall, Spring, Summer. 1 to 3 credits.
May reenroll for a maximum of 6 credits.
P: GBL 395 R: Senior and Above Approval of Department
Planned program of observation and work in selected business firms and government. Analysis and reports.
Independent research on selected legal topics.
QA: GBL 430

GBL 398. Legal Environment of Business
Fall, Spring. 3(3-0)
R: Graduate or PPA Business MBA or PPA
Critical examination of the environment in which businesses operate. Analysis of the component elements of the legal, political, and social environment of business and the structural framework in which law functions.
QA: GBL 489

GBL 880. Corporate and Professional Social Responsibility
Fall. 3(3-0)
R: Graduate Business
Impact of corporations and professions in societies and across societies; control of business organizations; social and moral responsibilities of organizations; the individual's role in a business organization.

GBL 890. Special Problems
Fall, Spring, Summer. 1 to 3 credits.
May reenroll for a maximum of 6 credits.
P: GBL 848 R: Graduate Business Approval of the Department
Independent study of special topics in business law and public policy.
QA: GBL 890

GENETICS

GEN 800. Genetics Seminar
Fall of odd-numbered years, Spring of odd-numbered years. Summer of odd-numbered years.
May reenroll for a maximum of 6 credits.
P: R. Ph. D. students Genetics
Topics not normal treated in formal courses.
QA: GEN 800

GEN 880. Laboratory Rotation
Fall of odd-numbered years, Spring of odd-numbered years. Summer of odd-numbered years.
May reenroll for a maximum of 6 credits.
P: Ph. D. students Genetics
Lab Rotation for 1st year genetics students only participation in a research lab of a Genetics faculty mentor. Learn experimental techniques, research approaches, broaden research experience & assess research interests prior to selecting a thesis advisor.
QA: GEN 880

GEN 990. Doctoral Dissertation Research
Fall of odd-numbered years, Spring of odd-numbered years. Summer of odd-numbered years.
May reenroll for a maximum of 9 credits.
P: Ph. D. students Genetics
Research for the doctoral dissertation in genetics.
QA: GEN 999

GEOGRAPHY

GEO 119. Introduction to Economic Geography
Fall, Spring. 3(3-0)
Spatial distribution of resources, population, enterprise, trade, consumption and production. Interaction of these distributions at local to global scale.
QA: GEO 213

GEO 151. Cultural Geography
Fall. 3(3-0)
Systematic approach to the spatial distribution of cultural features, processes, and relationships.
QA: GEO 201

GEO 204. Introduction to Meteorology
Fall, Spring. 3(3-0)
QA: GEO 351

GEO 206. Physical Geography Laboratory
Fall. 3(3-0)
R: NONE NONE NONE
Geographic and functional interrelationships within the physical environment. Earth-sun relationships, weather, climate, soils, vegetation and landforms (terrain characteristics).
QA: GEO 206

GEO 206L. Physical Geography Laboratory
Fall, Spring. 1(0-2)
P: GEO 206 concurrently. R: NONE NONE NONE
Geographic aspects of weather, climate, soil, vegetation, and terrain. Interpretation and application of maps and remotely sensed imagery.
QA: GEO 206L

GEO 224. Introduction to Cartography
Fall, Spring. 4(2-4)
Cartographic principles and techniques of making maps. Cartographic decision-making and methods for both conventional and computer mapping.
QA: GEO 223

GEO 224. Introduction to Remote Sensing
Fall, Spring. 4(2-4)
R: Not open to freshmen.
Conventional airphoto characteristics and interpretation techniques. Basic features of radar, thermal, and multispectral imagery. Applications in professional fields such as agriculture, archaeology, forestry, geography, planning, wildlife.
QA: GEO 224

GEO 225. Introduction to Geographic Information Systems
Fall, Spring. 4(3-0)
QA: NONE

GEO 230. Geography of the United States and Canada
Fall, Spring. Summer. 3(3-0)
Regional analysis. Evolution and status of environmental, demographic, economic, and sociocultural patterns and processes.
QA: GEO 300

GEO 233. Geography of Michigan
Fall. 3(3-0)
Physical and cultural geography of Michigan.
QA: GEO 407
Courses are subject to revision and final approval.

GEOGRAPHY

259. Geography of Recreation and Tourism
Fall. 3(3-0)
Cultural, physical, and biotic factors affecting the distribution of recreation and tourism resources and participation. U.S. and international examples and case studies.
QA: GEO 306

330. United States and Canada
Fall. 3(3-0)
R: Sophomores or above
Regional analysis of United States and Canada; evolution and status of environmental, demographic, economic, and sociocultural patterns and processes.
QA: GEO 300 GEO 408

335. Geography of Latin America
Fall. 3(3-0)
R: Not open to freshmen.
Physical and human geography of Latin America. Current development issues, especially people-environment interaction in urban and rural areas. Topics include migration, urbanization, and industrialization.
QA: GEO 315 GEO 316

336. Geography of Europe
Fall. 3(3-0)
R: Not open to freshmen.
Major regions and nations, including their physical resources, peoples, political structures, and economies.
QA: GEO 340 GEO 342

337. Geography of East Asia
Spring. 3(3-0)
R: Not open to freshmen.
Spatial patterns and processes of physical and human geography in China, Japan, Korea, and Taiwan. Emphasis on development problems, especially since 1850.
QA: GEO 354 GEO 365

338. Geography of Africa
Fall. 3(3-0)
R: Not open to freshmen.
Physical and human geography of Africa. Current development issues, especially people-environment interaction in urban and rural areas. Topics include drought, agricultural patterns, hunger, rural development, migration, and urbanization.
QA: GEO 321 GEO 322

401. Plant Geography
Spring of even-numbered years. 3(3-0)
R: not open to freshmen or sophomores
NONE NONE NONE
GEOGRAPHY OF FORESTS IN NORTH AMERICA WITH EMPHASIS ON THE EAST. RELATED ECOLOGICAL PRINCIPLES, SOILS, AND POST-CUSTODIAL GEOLOGIC HISTORY. SOME FIELD INSTRUCTION.
QA: GEO 432

402. Agricultural Climatology
Fall of even-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Agricultural Engineering.
P: MTH 116 R. NO FRESHMEN; NO SOPHOMORES
RELATIONSHIPS BETWEEN CLIMATE & AGRICULTURE AS RELATED TO RESOURCE ASSESSMENT; WATER BUDGET; ANALYSIS, METEOROLOGICAL HAZARDS; PESTS, CROP-YIELD MODELING, AND IMPACTS OF GLOBAL CLIMATE CHANGE.
QP: MTH 106 OR MTH 111

404. Synoptic Climatology
Fall. 4(0-06)
P: GEO 203
GLOBAL CLIMATE PATTERNS AND THEIR CONTROL; EMPIRICAL ON THE RELATIONSHIP BETWEEN UPPER-AIR FLOW AND WEATHER IN THE NORTHERN HEMISPHERE.
QP: GEO 206 GEO 311 QA: GEO 451

405. Applied Synoptic Climatology: Principles and Methods
Spring. 3(3-0)
P: GEO 203, Math 116
Dynamic and thermodynamic principles of atmospheric science applied to the development and evolution of extratropical cyclones. Laboratory sessions include analysis of current observations and satellite imagery.
QP: GEO 351 AND MTH 1090RMTH 111 QA: GEO 452

406. Environmental Geomorphology
Spring. 3(3-0)
Interdepartmental with the Department(s) of Geological Sciences.
P: GEO 106, GEO 406, ICSP 203, GLG 201, or GLG 301
Relationships of running water, weathering, gravity, ice, waves, wind, and biota to terrain and soils. Evolution of landscapes. Classical and modern interpretations. Field study optional.
QP: GEO 206 OR GLG 201 OR GLG 200 QA: GEO 431

407. Regional Geomorphology of the United States
Fall. 3(3-0)
P: GEO 106 or GEO 406 or GLG 201 or GLG 301 or ISP 203
Geomorphic characteristics of physiographic regions of the United States, with emphasis on development issues, especially people-environment interaction in urban and rural areas. Topics include migration, urbanization, and industrialization.
QP: GEO 206 OR GLG 200 OR GLG 210 QA: GEO 429

408. Soil Geomorphology Field Study
Fall. 4(3-4)
P: GEO 106 or GLG 201 or CSS 210. R: Not open to freshmen or sophomores.
Common geomorphic relationships among soils, landforms, and vegetation in lower Michigan. Description, analysis, and genesis of soils and landscapes. Surficial processes. Required field trips, incurring some student expenses.
QP: GEO 206 OR GLG 200 OR GLG 210 QA: GEO 420

413. Urban Geography
Fall. 3(3-0)
P: GEO 113
Theories and models of urban spatial form. Underlying structures and processes. Socio-spatial dimensions of modern urbanites. Differentiation and locational conflict in residential, commercial, and industrial space.
QP: GEO 213 QA: GEO 403

414. Geography of Transportation
Spring. 3(3-0)
P: GEO 113. R: Not open to freshmen.
Spatial perception of transportation. Theories of interaction, network structures, and location-alloca­ tion models. Role of transport and transport planning.
QP: GEO 213 QA: GEO 409

415. Location Theory and Land Use Analysis
Fall. 3(3-0)
P: GEO 113. R: Not open to freshmen.
Classical and nonclassical, static and dynamic models of industrial location and spatial organization. Land rent theory. Central place theory. Multi-locational organization. Growth transmission.
QP: GEO 213 QA: GEO 435

416. Principles of Regional Planning
Spring of even-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Urban Planning.
P: GEO 113 or approved equivalent R: no freshmen, no sophomores
Will develop the principles and theoretical issues of regional planning; scope and definition, applied spatial analysis techniques, research on policies and procedures.
QP: GEO 213 OR GEO 451
Emergence of transnational corporations and their impact on economic development and the international division of labor.
QP: GEO 213

418. The Ghetto
Fall. 3(3-0)
Analysis of the ghetto including its spatial organization, structure and distribution of nonwhite and ethnic populations with an emphasis on U.S. cities.
QA: GEO 401

430. Map Production and Design
Spring. 3(2-4)
P: GEO 223.
Manual and automated techniques. Design solutions, map planning, overlay construction, layer issues, typography, color theory, and color selection.
QP: GEO 223 QA: GEO 446 GEO 456

424. Advanced Remote Sensing
Fall. 4(2-3)
P: GEO 224 R: Not open to freshmen and sophomores.
Interception of solar radiation with the atmosphere, lithosphere, hydrosphere, and biosphere. Introductory digital image processing. Earth-resource satellite sensors, data products, and applications. Radar and thermal remote sensing.
QP: GEO 224 QA: GEO 424

425. Advanced Geography Information Systems
Spring. 4(0-02)
P: GEO 225.
Technical and theoretical issues in the design, evaluation, and implementation of geographic information systems for research and application.

430. Topics in Cartographic Research
Fall. 3(3-0)
P: GEO 223.
QP: GEO 223 QA: GEO 447

435. Geography of Health and Disease
Fall. 3(3-0)
R: Not open to freshmen, sophomores, or above.
Spatial and environmental concepts and techniques applied to health problems. Disease transmission cycles, community nutrition, and health-care planning.
QA: GEO 470

452. Population and Development
Spring of odd-numbered years. 3(3-0)
P: GEO 401, GEO 411, OR GEO 223, OR GEO 335, OR GEO 336, OR GEO 337
214GRAPHIC ISSUES RELATED TO ECONOMIC DEVELOPMENT AND ENVIRONMENTAL SUSTAINABILITY IN SELECTED WORLD REGIONS.
QP: GEO 201 GEO 213 GEO 300 GEO 315 GEO 316 GEO 385 OR GEO 407 QA: GEO 320

453. Environment and Development Policy
Spring of even-numbered years. 3(3-0)
Interdepartmental with the Department(s) of Resource Development.
P: GEO 401, OR GEO 415, OR GEO 330, OR GEO 223, OR GEO 335, OR GEO 336, OR GEO 337
INTERACTION BETWEEN ENVIRONMENTAL AND DEVELOPMENT POLICIES AND PROCESSES IN SELECTED WORLD AREAS.
QA: RD 429

Courses with an asterisk (*) have not been approved by the University Committee on Curriculum. E-75
454*. Spatial Aspects of Regional Development
Spring of odd numbered years. 3(3-0)
P: GEO 119, or GEO 151, or GEO 230, or GEO 233, or GEO 235, or GEO 236, or GEO 237.

Spatial patterns and processes associated with regional development in selected world areas.
QP: GEO 201 GEO 213 GEO 290 GEO 315 GEO 316 GEO 364 OR GEO 385 QA: GEO 440

459*. Tourism in Development
Fall. 3(3-0)
Analysis of the distribution, nature, and impacts of tourism. Environmental considerations and the role of tourism in regional development. Examples from Michigan, the United States and other nations.

465*. Introduction to Quantitative Methods for Geographers and Planners
Fall. 3(0-3) Interdisciplinarity with the Department(s) of Urban Planning. P: GEO, UP, LA
Basic quantitative techniques in the analysis and classification of geographic data.
QA: GEO 427

489*. Senior Seminar
Spring. 3(0-3)
R: Open only to seniors in Geography. History, philosophy, and methodology of the geographic discipline as it has evolved within academic and social contexts.
QA: GEO 425

491*. Readings in Geography
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits.
Research on selected aspects of Geography.

492*. Geographic Research Problems
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 16 credits.
Research on selected aspects of Geography.

493*. Field Study
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits.
Supervised field study in Geography.

499*. Internship in Geography
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits.
P: Approval of Department R: juniors and above
Individual experience in Geography at an approved agency, firm, or other entity.

809*. Seminar in Physical Geography
Fall, Spring, Summer. 3(3-0) May reenroll for a maximum of 8 credits.
P: Consent of instructor R: graduate standing
Research on topics in physical geography, specifically climatology, geomorphology, soils, and plant geography.
QA: GEO 834

813*. Seminar in Urban and Economic Geography
Fall. 3(3-0) P: Two of GEO 413, GEO 414, GEO 415, GEO 416, GEO 417, GEO 418 or equivalent.
Research on selected topics in urban and economic geography.
QP: TWG OF GEO 401 GEO 402 GEO 435 QA: GEO 805

816*. Seminar in Location Theory and Transportation Geography
Spring. 3(3-0) P: Two of GEO 413, GEO 414, GEO 415, GEO 416, GEO 417, GEO 418
Research on selected topics in location theory and transportation geography.
QP: TWO OF GEO 410 GEO 410 GEO 435 QA: GEO 835

823*. Map Automation
Fall. 3(0-2)
P: GEO 223 R: Graduate Students
The use of computers in cartography. Cartographic algorithms, interpolation, line generalization, program intelligence, cartographic data bases.
QA: GEO 429 QA: GEO 449

825*. Geoprocessing
Spring of even numbered years. 4(0-4)
P: GEO 225, GEO 424.
Integration of digital remote sensing data, geographic information systems, spatial analysis, and expert systems in solving research problems. Class research project.
QA: GEO 424

826*. Seminar in Cartography and Geoprocessing
Spring. 3(0-3) R: Graduate students
Research in cartography, geographic information systems, and remote sensing.
QA: GEO 846

860*. Regional Seminar
Fall, Spring. 3(3-0)
P: Approval of department R: Graduate students
Research on contemporary geographic issues in different world regions.
QA: GEO 840

865*. Advanced Quantitative Methods in Geography
Spring. 4(4-0)
P: GEO 465
Advanced methods applied to geographic data. Multiple regression, principle components and factor analysis, discriminant analysis, and related taxonomic methods.
QP: GEO 427 QA: GEO 811

886*. Research Design in Geography
Spring. 3(3-0)
P: graduate students GEO and UP Approval of the Dept
Research and writing in geography. Identification of geographic problems and their relative importance. Structuring and stating hypotheses. Data acquisition and tests for validity.
QA: GEO 829

891*. Advanced Readings in Geography
Fall, Spring, Summer. 1 to 8 credits. May reenroll for a maximum of 12 credits.
R: Graduate Students
QA: GEO 818

892*. Advanced Geographic Research
Fall, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 16 credits.
R: graduate status
Advanced research on selected aspects of geography.

899*. Master's Thesis Research
Fall, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 30 credits.
R: Open only to graduate students in Geography.
QA: GEO 899

898*. Theory and Methods in Geography
Spring. 3(3-0)
R: Ph.D. GEO
Historical development of the geographic discipline within social and intellectual contexts. Current methodological and philosophical approaches to geographic research.
QA: GEO 828 GEO 825

999*. Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 12 credits. May reenroll for a maximum of 56 credits.
R: Ph.D. students only Geography
QA: GEO 899

GEOLOGY

201. Earth Processes and History
Fall, Spring. 4(3-2)
Physical, chemical and biological processes related to the evolution of the Earth. The roles of solar energy, Earth's internal heat and the process of natural selection in controlling these processes.
QA: GLG 201 GLG 202 GLG 306

301. Engineering Geology
Fall. 4(3-2)
R: Not open to freshmen. Open only to College of Engineering students. Not open to students with credit in GLG 201.
Principles of geology applied to civil engineering practice. Minerals, rocks, surficial and internal processes, mitigation of destructive geological processes.
Air photos, topographic-geologic maps, cross sections.
QA: GLG 200 GLG 201 GLG 306

321. Mineralogy and Geochemistry
Fall. 4(3-2)
P: CEM 142 or CEM 152.
QP: CEM 141 OR CEM 151 OR HBS 181 QA: GLG 321 GLG 322 GLG 327

331. Vertebrate Life of the Past
Spring. 3(3-0) Interdepartmental with the Department(s) of Zoology.
P: BS 110 or BS 111 or junior and above
R: Not open to students with credit in GLG 433.
Evolution and diversity of fossil vertebrates from fish to humans with emphasis on dinosaurs and Pleistocene events.
QA: GLG 320