GPHY - Geography

GPHY 121D. Human Geography. 3 Credits. (3 Lec) F
Global geographies of population and economic development; patterns of language and religion; global distributions of agriculture, industry, and urban landscapes; use of human geography to analyze selected world problems.

GPHY 141D. Geography of World Regions. 3 Credits. (3 Lec) F,S,Su
Resume of major world regions; their cultures, populations, resources, utilization of land; emphasis on regions outside Anglo-America.

GPHY 262. Spatial Sci Tech & Application. 3 Credits. (2 Lec, 1 Lab) S
Fundamentals of GPS, GIS, and remote sensing, and their application in a wide range of disciplines. Exploration of the increasing use of geospatial technologies in our world and their impact on our lives. Students will gain hands-on experience with GPS receivers, and GPS, GIS and remote sensing software.

GPHY 284. Intro to GIS Science & Cartog. 3 Credits. (2 Lec, 1 Lab) S
Concepts of spatial thinking; understanding spatial relationships and interaction in the natural and built environment. Spatial data principles, data models, relational database concepts, contemporary digital cartography, map design and composition, spatial data conversion, introduction to spatial analysis and synthesis.

GPHY 290R. Undergraduate Research. 1-6 Credits. (1-6 Ind; max unlimited) F,S,Su
May be repeated. Directed undergraduate research/creative activity which may culminate in a written work or other creative project. Course will address responsible conduct of research.

GPHY 291. Special Topics. 1-4 Credits. (1-4 Lec; 12 cr max) On Demand Max 12 cr. PREREQUISITE: None required but some may be determined necessary by each offering department. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

GPHY 321. Urban Geography. 3 Credits. (3 Lec) S alternate years, to be offered odd years.
PREREQUISITE: GPHY 121D or STAT 216Q. Historical evolution and spatial patterns of urban places in the U.S. and the world; human-environment relationship in urban areas; analyses of urban economy and land use in the city; spatial structure of urban system in national and regional background; some important methods and theories in urban geographical research.

GPHY 322. Economic Geography. 3 Credits. (3 Lec) F alternate years, to be offered odd years.
PREREQUISITE: GPHY 121D and STAT 216Q. Contemporary research questions and methodologies in economic geography; spatial patterns and processes of main economic activities; principles of spatial interaction; application of locational theory in urban and rural settings.

GPHY 325. Cultural Geography. 3 Credits. (3 Lec) F alternate years, to be offered odd years.
PREREQUISITE: GPHY 121D American cultural landscape evolution; origins and diffusions of American culture traits; evolution of American culture regions.

GPHY 326. Geography of Energy Resources. 3 Credits. (3 Lec) S
PREREQUISITES: GPHY 121 OR GPHY 141 pre-industrial and contemporary energy systems; global distribution of energy resources; implications of energy resource distribution for contemporary geopolitics and development; metrics of energy consumption.

GPHY 329. Environment and Society. 3 Credits. (3 Lec) F
This course introduces students to the study of relationships between people and the environment from a social science perspective. It explores the social causes and consequences of environmental change and examines the different approaches to decision-making about environmental issues.

GPHY 357. GPS Fund/App in Mapping. 3 Credits. (1 Lec, 2 Lab) F
PREREQUISITE: GPHY 284. Theory and application of the global positioning system Global Positioning System (GPS) to mapping in natural resource and land management sciences. Mapping issues and accuracy assessment are emphasized. Labs and term mapping project include hands-on experience with GPS receivers and work with Pathfinder Office and ArcGIS ArcGIS software. Students must be proficient with the latest version of ArcGIS.

GPHY 358. GPS Mapping Svc Learning. 1 Credit. (1 Rct) F
COREQUISITE: GPHY 357 Participation in one of two established GPHY 357 service-learning projects: E 911 mapping of high density housing developments to aid in emergency response (section 1); AAGI canal mapping to update the Gallatin Valley inventory of water resources (section 2).

GPHY 365. Geographical Planning. 3 Credits. (3 Lec) S
PREREQUISITE: GPHY 121D. Planning history in the U.S.; Main factors, elements, organization, and issues of urban and rural planning in a geographical context; main principles, methods and tools of geographical planning; integration of physical and human variables into the planning process.

GPHY 384. Adv GIS and Spatial Analysis. 3 Credits. (2 Lec, 1 Lab) F,S

GPHY 402. Water and Society. 3 Credits. (3 Lec) F, odd years
PREREQUISITE: Junior, senior, or graduate student standing. This course introduces students to the study of relationships between people and the environment from a social science perspective. It explores the social causes and consequences of environmental change and examines the different approaches to decision-making about environmental issues.

GPHY 411. Biogeography. 3 Credits. (3 Lec) S
Offered odd years. PREREQUISITE: GPHY 121D or BIOB 170IN. Factors affecting the geography of plants and animals in space and time.

GPHY 425. Geographic Thought. 3 Credits. (3 Lec) S
PREREQUISITE: Senior standing in Geography program. A senior capstone course for the geography option. The exploration of the history of geographic thought; the emergence and evolution of modern academic and applied geography. Contemporary trends and issues in geography.

GPHY 426. Remote Sensing. 3 Credits. (2 Lec, 1 Lab) S
PREREQUISITE: Junior standing or consent of instructor. Theory and application of remote sensing, the electromagnetic spectrum, earth-energy interactions, and operation of multispectral sensors. Applications include satellite image analysis for agriculture, environmental assessment, forestry, geology, rangeland, urban, wildlife, and others. This course is intended for students not in geospatial or GIS majors.

GPHY 429R. Applied Remote Sensing. 3 Credits. (2 Lec, 1 Lab) S
PREREQUISITE: Senior standing or consent of instructor. Applications of remote sensing, including advanced studies of multispectral and hyperspectral sensors and image processing algorithms. Emphasis is on using remote sensing technologies for solving applied land resource issues. This course is intended for students in geospatial and GIS majors. Dept of Land Resources & Environmental Science.

GPHY 431. Historical Geography. 3 Credits. (3 Lec) S alternate years, to be offered odd years.
PREREQUISITE: GPHY 121 Past geographies of North America. Political, cultural, economic, and urban evolution of North American regions from the colonial era to 1900.

GPHY 441R. Mountain Geography. 4 Credits. (2 Lec, 2 Lab) F alternate years, to be offered odd years.
PREREQUISITE: ERTH 101IN and ERTH 303. Local, regional, and global importance of mountains. Geomorphology, climatology, and hydrology of mountain environments, and their relationship to human activities.

GPHY 445. Adv. Regional Geography. 3 Credits. (3 Lec; 6 cr max) On Demand PREREQUISITE: Two of the following: ERTH 101IN, GPHY 141D, or GPHY 121D. A topical and regional analysis of related political subdivisions or other geographical areas. Course may be taken twice if regional emphases differ.

GPHY 446. East Asia in the Global System. 3 Credits. (3 Lec) S alternate years, to be offered even years.
PREREQUISITE: ERTH 101IN, GPHY 141D. Physical environments, history, cultures, demography, economics, politics, international relationships and urban developments of East Asia as a geographical region and inside independent countries; main position and development tendency of East Asia in the world system.

GPHY 457. Adv GPS Mapping for GIS. 3 Credits. (3 Lab) F
PREREQUISITE: GPHY 284 and GPHY 357. Advanced topics and techniques in GPS/GIS mapping, emphasizing high accuracy data collection, data quality and documentation. Advanced datalogging options, carrier phase and dual-frequency data collection, GPS photo-link, and mobile GIS are some of the topics explored. Course includes topic research and presentation, and service-learning project work.

GPHY 461. Tourism Planning. 3 Credits. (3 Lec) S alternate years, to be offered even years.
PREREQUISITE: GPHY 284 and GPHY 365. Concepts and components of tourism system; types and geographical patterns of main tourism resources; methods and theories in tourism geography studies; case analyses of tourism planning at site, regional and national scale.
GPHY 484R. Applied GIS & Spatial Analysis. 3 Credits. (2 Lec, 1 Lab) S
PREREQUISITE: GPHY 384 and either STAT 217 or STAT 332. Advanced spatial analysis, synthesis and modeling concepts and methods. Semester projects apply theory and concepts to a project related to student’s discipline. Students learn to develop GIS applications to address a variety of issues.

GPHY 490R. Undergraduate Research. 1-6 Credits. (1 Ind; 12 cr max) F,S,Su
Directed undergraduate research which may culminate in a research paper, journal article, or undergraduate thesis. Course will address responsible conduct of research. May be repeated.

GPHY 491. Special Topics. 1-4 Credits. (1-4 Lec; 12 cr max) On Demand
PREREQUISITE: Course prerequisites as determined for each offering. Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand.

GPHY 492. Independent Study. 1-3 Credits. (1-3 Ind; 6 cr max) On Demand
PREREQUISITE: Junior standing, consent of instructor, and approval of department head. Directed research and study on an individual basis.

GPHY 494. Seminar. 1 Credit. (1 Sem; 4 cr max) On Demand
PREREQUISITE: Junior standing and as determined for each offering. Topics at the upper division level not covered in regular courses. Students participate in preparing and presenting discussion material.

GPHY 495. Bioclimatography. 3 Credits. (3 Sem) On Demand
PREREQUISITE: GEO 211 or BIOE 370. The distribution of plants, as controlled by climate, geologic history and geographic location. Changes over time in distribution patterns as related to climate change and other human activities.

GPHY 497. Geography Instruction. 1-2 Credits. (5 Lab; 4 cr max) F,S,Su
PREREQUISITE: Junior or senior standing in geography and consent of instructor and Department Head. Student works as a tutor and undergraduate teaching assistant in a teaching laboratory under close academic supervision. Weekly meeting focuses on geography teaching, organization of class materials, and student supervision. Weekly lab emphasizes applying active learning concepts in a geography laboratory context.

GPHY 498. Internship. 2-12 Credits. (2-12 Ind; 12 cr max) On Demand
PREREQUISITE: Junior standing, consent of instructor, and approval of department head. An individualized assignment arranged with an agency, business or other organization to provide guided experience in the field.

GPHY 502. Water and Society. 3 Credits. (3 Lec) F, odd years
PREREQUISITE: Graduate student standing. This course introduces students to the study of relationships between people and the environment from a social science perspective. It explores the social causes and consequences of environmental change and examines the different approaches to decision-making about environmental issues.

GPHY 503. Settlement Geography. 3 Credits. (3 Sem) F alternate years, to be offered even years.
PREREQUISITE: Graduate standing. Settlement history and contemporary land use in the trans-Mississippi west. Evolution of cultural landscapes in the Mountainous West.

GPHY 504. GIS Research Fundamentals. 3 Credits. (2 Lec, 1 Lab) F
PREREQUISITE: Graduate standing. Geographic Information Science Fundamentals in the context of developing a research program. Spatial data principles, data models, conversion and sampling strategies, analysis methods and cartography. Lab exercises use GIS software. Students specialty area explored through literature review and individual project.

GPHY 505. Bioclimatography. 3 Credits. (3 Sem) On Demand
PREREQUISITE: GEO 211 or BIOE 370. The distribution of plants, as controlled by climate, geologic history and geographic location. Changes over time in distribution patterns as related to climate change and other human activities.

GPHY 520. Land Use Planning. 3 Credits. (3 Sem) F alternate years, to be offered odd years.
PREREQUISITE: Graduate standing. History and philosophy of land use planning; application of geographical skills to contemporary land use planning issues. Selected topics include population pressure and land requirement, law, eminent domain, property right, public control over private land use, institution, and economics in land use planning.

GPHY 545. Adv Regional Geography. 3 Credits. (3 Lec) F alternate odd years
PREREQUISITE: Two of the following: ERTH 101, GPHY 121, or GPHY 141. A topical and regional analysis of related political subdivisions or other geographical areas. Course may be taken twice if regional emphases differ.

GPHY 591. Special Topics. 1-4 Credits. (1-4 Lec; 12 cr max) On Demand
PREREQUISITE: Upper division courses and others as determined for each offering. Courses not required in any curriculum for which there is a particular one time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.