GEOG 105 Introduction to Human Geography
3 cr. Undergraduate.
How humans interact with and alter the Earth through cultural, political, and economic processes; how these processes are dependent on and affect Earth's natural resources. 2 hrs lec, 1 hr dis.
Prerequisites: none.
General Education Requirements: SS
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 110 The World: Peoples and Regions
3 cr. Undergraduate.
Introduction to regional cultural geography through a study of representative and significant areas of the earth.
Prerequisites: none.
General Education Requirements: SS
Last Taught: Summer 2021, Spring 2021, Fall 2020, Summer 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 114 Geography of Race in the United States
3 cr. Undergraduate.
Contemporary geographic issues of segregation, assimilation, belonging, and exclusion facing African-American, white, Asian, Latino, Native American and either groups in the U.S. 2 hrs lec, 1 hr dis.
Prerequisites: none.
General Education Requirements: CD, SS
Last Taught: Spring 2021, Fall 2020, Spring 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 115 Globalization and Economic Development
3 cr. Undergraduate.
Geographic perspectives on world economy: geographic organization of contemporary production and consumption around the world; historical development of capitalist economy; economic geography of globalization processes.
Prerequisites: none.
General Education Requirements: SS
Last Taught: Fall 2020, Fall 2019, Fall 2018, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 120 Our Physical Environment
3 cr. Undergraduate.
Characteristics and significance of world land form, climate, soils, vegetation, and mineral and water resources. 2 hrs lec, 2 hrs lab/dis.
Prerequisites: none.
Course Rules: Not open for cr to students w/cr in Geog 121(ER), 122(ER).
General Education Requirements: NS+
Last Taught: Summer 2021, Spring 2021, Fall 2020, Summer 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 125 Introduction to Environmental Geography
3 cr. Undergraduate.
Introduction to environmental geography and related environmental problems aimed at understanding of the earth's systems in our daily encounter with them.
Prerequisites: none.
General Education Requirements: NS
Last Taught: Summer 2021, Spring 2021, Fall 2020, Summer 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 128 Introduction to Caves and Caving
3 cr. Undergraduate.
An introduction to the science of speleology, to the underground world of caves, and to the techniques and history of caving.
Prerequisites: none.
General Education Requirements: NS
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 140 Our Urban Environment: Introduction to Urban Geography
3 cr. Undergraduate.
Site and situation, central functions, spatial patterns of socio-economic and demographic characteristics of urban population. Spatial patterns of urban economy.
Prerequisites: none.
General Education Requirements: SS
Last Taught: Fall 2020, Fall 2019, Fall 2018, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 193 First-Year Seminar:
3 cr. Undergraduate.
The specific topics are announced in the Schedule of Classes each time the class is offered.
Prerequisites: none.
Course Rules: Open only to freshmen. Students may earn cr in just one L&S First-Year Sem (course numbers 192, 193, 194).
General Education Requirements: SS
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 194 First-Year Seminar:
3 cr. Undergraduate.
Specific topics are announced in the Schedule of Classes each time the class is offered.
Prerequisites: none.
Course Rules: Open only to freshmen. Students may earn cr in just one L&S First-Year Sem (course numbers 192, 193, 194).
General Education Requirements: NS
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 199 Independent Study
1-3 cr. Undergraduate.
For further information, consult dept chair.
Prerequisites: 2.0 GPA; consent of instructor, department chair, and Assistant Dean for Student Academic Services.
Course Rules: May be retaken to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 213 Geography of Asia
3 cr. Undergraduate.
Population, resources, development, and diversity. Regions discussed are East Asia, Southeast Asia, South Asia, and Central Asia.
Prerequisites: soph st.
General Education Requirements: SS
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 215 Introduction to Geographic Information Science
3 cr. Undergraduate.
Geographic objects, their representation and analysis. Topics include special nature of spatial data; concepts of space, mapping, spatial relationships; and use of geographic information systems. 2 hrs lec, 2 hrs lab.
Prerequisites: none.
Last Taught: Summer 2021, Spring 2021, Fall 2020, Summer 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 231 Muslim Geographies: Identities and Politics
3 cr. Undergraduate.
Origin and main features of Islam and the diversity of Muslim cultures in various geographical, social, cultural, and political contexts.
Prerequisites: none.
General Education Requirements: SS
Last Taught: Spring 2019, Spring 2017, Fall 2015, Fall 2014.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 247 Quantitative Analysis in Geography
3 cr. Undergraduate.
Application of quantitative measures to geographic problems. Topics include descriptive statistics, statistical inference, and bivariate relationships.
Prerequisites: Satisfaction of GER Quantitative Literacy - Part A.
Course Rules: 2 hrs lec, 2 hrs lab.
General Education Requirements: QLB
Last Taught: Fall 2020, Fall 2019, Fall 2018, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 289 Internship in Geography, Lower Division
1-6 cr. Undergraduate.
Application of basic principles of geography in a business, organizational, educational, political, or other appropriate setting.
Prerequisites: intro course in Geog; 2.25 gpa; cons supervising faculty member.
Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 296 UROP Apprenticeship
1-3 cr. Undergraduate.
Undergraduate research participation in a project developed with a supervising member of the faculty or staff.
Prerequisites: acceptance into UROP; prior or conc reg in UROP seminar.
Course Rules: One credit for 45 hrs research. May be retaken to 9 cr max in any combination of UROP apprenticeship courses. Not open to jrs & srs.
Last Taught: Fall 2005.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 297 Study Abroad:
1-12 cr. Undergraduate.
Designed to enroll students in UWM sponsored program before course work level, content and credits are determined and/or in specially prepared program course work.
Prerequisites: acceptance for Study Abroad Prog.
Course Rules: May be retaken w/chg in topic.
Last Taught: Fall 2020, Spring 2020, Fall 2019, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 299 Ad Hoc:
1-6 cr. Undergraduate.
Course created expressly for offering in a specified enrollment period. Requires only dept & assoc dean approval. In exceptional circumstances, can be offered in one add'l sem.
Prerequisites: none; add'l prereqs may be assigned to specific topic.
Course Rules: May be retaken w/chg in topic.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 304 Human Impact on the Environment
3 cr. Undergraduate.
Geographical and temporal distribution of human effects on land and resources; historical background of human concern for deleterious effects of impacts on environments.
Prerequisites: jr st; intro course in Geog or a life sci recom.
General Education Requirements: NS
Last Taught: Spring 2021, Fall 2020, Spring 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 306 Natural Hazards
3 cr. Undergraduate.
An introduction to processes and conditions responsible for natural hazards, reasons for geographic patterns of hazards' occurrence, and modes of adjustment to natural hazards.
Prerequisites: jr st; a physical geog course recom.
General Education Requirements: NS
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 309 Nationalities and Nations of the World
3 cr. Undergraduate.
Prerequisites: junior standing or one of the following: GEOG 110(P), GEOG 114(P), ETHNIC 101(P), or ETHNIC 102(P); or consent of instructor.
Last Taught: Fall 2020, Fall 2019, Fall 2018, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 310 General Climatology
3 cr. Undergraduate.
Global patterns of climate and the processes that shape them. Climatic elements, upper-atmospheric waves, internet data, Midwest climate, climate classification, and climate change.
Prerequisites: jr st; Geog 120(R), Atm Sci 100(R), or Atm Sci 240(R).
Last Taught: Fall 2020, Fall 2019, Fall 2018, Fall 2017.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 325 Introduction to Data Science with R, Python, and GIS
4 cr. Undergraduate.
Basic concepts and practices in data science using R; introduction to practical skills for using Python and ArcGIS. 2.5 hrs lec, 2 hrs lab.
Prerequisites: jr st.
Last Taught: Spring 2019.
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 330 Europe: East and West
3 cr. Undergraduate.
Europe's lands and peoples, physical and cultural diversities and similarities.
Prerequisites: jr st.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 340 Biogeography
3 cr. Undergraduate.
An introduction to the geography of the biosphere, the earth's surface, and the plants and animals which live there.
Prerequisites: jr st; a physical geog or a biology course recom.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 350 Conservation of Natural Resources
3 cr. Undergraduate.
Analysis of environmental ethics; the positive and negative consequences of resource development with emphasis on strategies designed to resolve environmental conflicts.
Prerequisites: jr st or a geog course.
General Education Requirements: SS
Last Taught: Summer 2021, Spring 2021, Fall 2020, Summer 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 381 Honors Seminar
3 cr. Undergraduate.
Selected topics in geography.
Prerequisites: soph st; Honors200(P); cons Honors College dir.
Course Rules: May be retaken w/chg in topic to 9 cr max.
General Education Requirements: SS
Last Taught: Fall 2019, Fall 2016, Spring 2014, Spring 2012.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 400 Population, Environment, Development
3 cr. Undergraduate/Graduate.
Population processes and policies in different geographical contexts: fertility, mortality, migration, and policies affecting these; population-environment relations; interactions of population and economic development.
Prerequisites: jr st; Geog 105(P), 110(P), 114(P), or 140(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 400G Population, Environment, Development
3 cr. Undergraduate/Graduate.
Population processes and policies in different geographical contexts: fertility, mortality, migration, and policies affecting these; population-environment relations; interactions of population and economic development.
Prerequisites: jr st; Geog 105(P), 110(P), 114(P), or 140(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 405 Cartography
4 cr. Undergraduate.
Thematic cartography; map communication, design principles, illustration and mapping software. 3 hrs lec, 2 hrs lab.
Prerequisites: jr st & Geog 215(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 410 Gendered Geographies
3 cr. Undergraduate/Graduate.
Various ways feminist geographers have analyzed gender in relation to phenomena such as the body, home, work, the nation, colonization, and globalization.
Prerequisites: jr st & one of Geog 105(P) or 110(P) or Wmns 200(P) or 201(P) or equiv; or grad st.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 410G Gendered Geographies
3 cr. Undergraduate/Graduate.
Various ways feminist geographers have analyzed gender in relation to phenomena such as the body, home, work, the nation, colonization, and globalization.
Prerequisites: jr st & one of Geog 105(P) or 110(P) or Wmns 200(P) or 201(P) or equiv; or grad st.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 415 Hydrogeography
3 cr. Undergraduate/Graduate.
Role of water in geographic systems. Interaction of water with physical and human systems, key hydrological processes, spatial and temporal variations of water, data collection, modeling.
Prerequisites: junior standing and GEOG 120(P) or GEOG 125(P); or graduate standing.
Last Taught: Fall 2020, Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 415G Hydrogeography
3 cr. Undergraduate/Graduate.
Role of water in geographic systems. Interaction of water with physical and human systems, key hydrological processes, spatial and temporal variations of water, data collection, modeling.
Prerequisites: junior standing and GEOG 120(P) or GEOG 125(P); or graduate standing.
Last Taught: Fall 2020, Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 420 Methods and Principles in Land Form Geography
3 cr. Undergraduate/Graduate.
Geographic qualitative and quantitative methods in land form analysis and principles of landscape evolution.
Prerequisites: jr st & Geog 120(P) or 121(P) or Geo Sci 100(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 420G Methods and Principles in Land Form Geography
3 cr. Undergraduate/Graduate.
Geographic qualitative and quantitative methods in land form analysis and principles of landscape evolution.
Prerequisites: jr st & Geog 120(P) or 121(P) or Geo Sci 100(P).
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 421 Geography of Latin America
3 cr. Undergraduate/Graduate.
Topical and regional analysis of physical features, discovery and exploration, processes of settlement, evolution of the landscape, and problems of development through modern times.
Prerequisites: jr st & Geog 110(P) or 120(P) or 125(P); or grad st.
Last Taught: Spring 2015, Fall 2011.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 421G Geography of Latin America
3 cr. Undergraduate/Graduate.
Topical and regional analysis of physical features, discovery and exploration, processes of settlement, evolution of the landscape, and problems of development through modern times.
Prerequisites: jr st & Geog 110(P) or 120(P) or 125(P); or grad st.
Last Taught: Spring 2015, Fall 2011.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 430 Geography of Transportation
3 cr. Undergraduate.
Geographic analysis of transportation, with emphasis on commodity flows and traffic patterns.
Prerequisites: jr st; Geog 115(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 437 Qualitative Methods in Geography
3 cr. Undergraduate.
Research design, interview, focus group, ethnography, survey, and discourse analysis; epistemological debates and the methodological and ethical issues that arise throughout the research process.
Prerequisites: jr st; Geog 105(P), 110(P), 114(P), or 140(P).
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 441 Geography of Cities and Metropolitan Areas
3 cr. Undergraduate/Graduate.
Extent, localization, and geographic relations of land uses, facilities, and internal circulation, with particular reference to large North American cities.
Prerequisites: jr st & intro course in geog or acceptable course in an urban related field, e.g. Econ, UrbPlan, Urb Std, or grad st.
Last Taught: Fall 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 441G Geography of Cities and Metropolitan Areas
3 cr. Undergraduate/Graduate.
Extent, localization, and geographic relations of land uses, facilities, and internal circulation, with particular reference to large North American cities.
Prerequisites: jr st & intro course in geog or acceptable course in an urban related field, e.g. Econ, UrbPlan, Urb Std, or grad st.
Last Taught: Fall 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 443 Cities of the World: Comparative Urban Geography
3 cr. Undergraduate/Graduate.
Geographic analysis of world urban systems with emphasis on the cultural traditions, form, function and socio-economic development of cities.
Prerequisites: jr st & Geog 110(P), 115(P), or 140(P).
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 443G Cities of the World: Comparative Urban Geography
3 cr. Undergraduate/Graduate.
Geographic analysis of world urban systems with emphasis on the cultural traditions, form, function and socio-economic development of cities.
Prerequisites: jr st & Geog 110(P), 115(P), or 140(P).
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 445G Applied Climatology
3 cr. Undergraduate/Graduate.
Applications of climate processes and data. Solar energy, wind energy, food production, water usage, building design, urban environments, ecological assessment, and land form development.
Prerequisites: jr st, Geog 120(P) or Atm Sci 100(P) or 240(P), & Geog 310(R); or grad st.
Last Taught: Fall 2012, Spring 2006.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 450 Climates of the Past and Climate Change
3 cr. Undergraduate/Graduate.
Climatic history of the earth and climate models. Milankovitch theory, quaternary climates, temporal-spatial scales of change, general circulation, and earth system models.
Prerequisites: jr st, Geog 120(P) or Atm Sci 100(P) or 240(P), & Geog 310(R); or grad st.
Last Taught: Fall 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 450G Climates of the Past and Climate Change
3 cr. Undergraduate/Graduate.
Climatic history of the earth and climate models. Milankovitch theory, quaternary climates, temporal-spatial scales of change, general circulation, and earth system models.
Prerequisites: jr st, Geog 120(P) or Atm Sci 100(P) or 240(P), & Geog 310(R); or grad st.
Last Taught: Fall 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 455 Applied Climatology
3 cr. Undergraduate/Graduate.
Applications of climate processes and data. Solar energy, wind energy, food production, water usage, building design, urban environments, ecological assessment, and land form development.
Prerequisites: jr st, Geog 120(P) or Atm Sci 100(P) or 240(P), & Geog 310(R); or grad st.
Last Taught: Fall 2012, Spring 2006.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 455G Applied Climatology
3 cr. Undergraduate/Graduate.
Applications of climate processes and data. Solar energy, wind energy, food production, water usage, building design, urban environments, ecological assessment, and land form development.
Prerequisites: jr st, Geog 120(P) or Atm Sci 100(P) or 240(P), & Geog 310(R); or grad st.
Last Taught: Fall 2012, Spring 2006.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 464 Environmental Problems
3 cr. Undergraduate/Graduate.
General discussion and case studies of geographical contexts and historical roots of modern environmental problems. History of human concern over adverse environmental impacts.
Prerequisites: jr st & an intro course in a life science or environmental science.
Last Taught: Spring 2021, Fall 2020.
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 464G Environmental Problems
3 cr. Undergraduate/Graduate.
General discussion and case studies of geographical contexts and historical roots of modern environmental problems. History of human concern over adverse environmental impacts.
Prerequisites: jr st & an intro course in a life science or environmental science.
Last Taught: Spring 2021, Fall 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 470 Geography of South Asia
3 cr. Undergraduate/Graduate.
Survey of the historical, cultural and economic geography of South Asia, including India and adjacent countries.
Prerequisites: jr st; intro Geog, Anthro, or Econ course.
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 470G Geography of South Asia
3 cr. Undergraduate/Graduate.
Survey of the historical, cultural and economic geography of South Asia, including India and adjacent countries.
Prerequisites: jr st; intro Geog, Anthro, or Econ course.
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 489 Internship in Geography, Upper Division
1-6 cr. Undergraduate.
Application of advanced principles of geography in a business, organizational, educational, political, or other appropriate setting.
Prerequisites: jr st; 300-level or above course in Geog; 2.25 gpa; cons supervising faculty member.
Course Rules: One cr earned for academic work based on 40 hours in internship. May be retaken to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 496 UROP Apprenticeship, Upper Level
1-3 cr. Undergraduate.
Undergraduate research participation in a project developed with a supervising member of the faculty or staff. One credit for 45 hrs research.
Prerequisites: jr st; acceptance to UROP.
Course Rules: May be retaken to 9 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 497 Study Abroad:
1-12 cr. Undergraduate/Graduate.
Designed to enroll students in UWM sponsored program before course work levels, content, and credits are determined and/or in specially prepared program course work.
Prerequisites: jr st; acceptance for Study Abroad Prog.
Course Rules: May be retaken w/chg in topic.
Last Taught: Fall 2019, Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 497G Study Abroad:
1-12 cr. Undergraduate/Graduate.
Designed to enroll students in UWM sponsored program before course work levels, content, and credits are determined and/or in specially prepared program course work.
Prerequisites: jr st; acceptance for Study Abroad Prog.
Course Rules: May be retaken w/chg in topic.
Last Taught: Fall 2019, Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 499 Ad Hoc:
1-6 cr. Undergraduate.
Course created expressly for offering in a specified enrollment period. Requires only dept & assoc dean approval. In exceptional circumstances, can be offered in one add’l sem.
Prerequisites: jr st; add’l prereqs may be assigned to specific topic.
Course Rules: May be retaken w/chg in topic.
Last Taught: Fall 1999.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 515 Watershed Analysis and Modeling
3 cr. Undergraduate.
Theories and applications of analytical and modeling techniques for watershed processes, including geographic information systems (GIS), statistics, and computer simulations.
Prerequisites: junior standing; working knowledge of GIS; GEOG 415(R), GEO SC 463(R), or GEOG 562(R).
Last Taught: Spring 2020, Fall 2016, Spring 2014.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 520 Physical Geography of the City
3 cr. Undergraduate/Graduate.
Spatial aspects and interactions of plants, animals, climate, soils, and water resources relevant to human activities in the urban environment.
Prerequisites: jr st & Geog 120(P) or 125(P); or grad st.
Last Taught: Fall 2019, Spring 2013.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 520G Physical Geography of the City
3 cr. Undergraduate/Graduate.
Spatial aspects and interactions of plants, animals, climate, soils, and water resources relevant to human activities in the urban environment.
Prerequisites: jr st & Geog 120(P) or 125(P); or grad st.
Last Taught: Fall 2019, Spring 2013.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 525 Geographic Information Science
4 cr. Undergraduate.
Geographic and information theoretical foundations of geographic information science (GIS). Use of macro languages in a software project to expand GIS functionality. 3 hrs lec, 2 hrs lab.
Prerequisites: jr st, & Geog 215(P).
Last Taught: Spring 2021, Fall 2020, Spring 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/
**GEOG 531 Insurgent Cities - Global Geographies of Urban Social Movements**
3 cr. Undergraduate.
Current and past social movements, activism, resistance, and revolution and their multiscalar geographies, from the urban, to the national, to the global.
**Prerequisites:** jr st.
**Last Taught:** Spring 2018.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 540 Globalization and the City**
3 cr. Undergraduate/Graduate.
Spatial aspects of globalization and their impact on the city. Topics include emergence of global cities, impacts on urban development, and global era urban strategies.
**Prerequisites:** jr st.
**Last Taught:** Fall 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 540G Globalization and the City**
3 cr. Undergraduate/Graduate.
Spatial aspects of globalization and their impact on the city. Topics include emergence of global cities, impacts on urban development, and global era urban strategies.
**Prerequisites:** jr st.
**Last Taught:** Fall 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 547 Spatial Analysis**
4 cr. Undergraduate.
Advanced analysis techniques, including multivariate relationships and spatial modeling.
**Prerequisites:** jr st; Geog 247(P) or dept-approved equiv.
**Last Taught:** Spring 2021, Fall 2019, Fall 2018, Fall 2017.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 548G Urban Environmental Change and Social Justice**
3 cr. Undergraduate/Graduate.
Spatial aspects of contributors to urban environmental change affecting social justice. Inequitable distribution of environmental risks and benefits; challenge of developing policies.
**Prerequisites:** jr st.
**Last Taught:** Spring 2021.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 564 Urban Environmental Change and Social Justice**
3 cr. Undergraduate/Graduate.
Spatial aspects of contributors to urban environmental change affecting social justice. Inequitable distribution of environmental risks and benefits; challenge of developing policies.
**Prerequisites:** jr st.
**Last Taught:** Spring 2021.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 564G Urban Environmental Change and Social Justice**
3 cr. Undergraduate/Graduate.
Spatial aspects of contributors to urban environmental change affecting social justice. Inequitable distribution of environmental risks and benefits; challenge of developing policies.
**Prerequisites:** jr st.
**Last Taught:** Spring 2021.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 565 Intermediate Geographic Information Science**
4 cr. Undergraduate.
Concepts and techniques of geographic information science (GIS), with emphasis on GIS-based spatial analysis, associated applications, and technology. 3 hrs lec, 2 hrs lab.
**Prerequisites:** jr st; Geog 525(P) or UrbPlan 591(P) or 791(P); or cons instr.
**Last Taught:** Fall 2020, Fall 2019, Fall 2018, Fall 2017.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 625 ArcGIS Programming with Python**
4 cr. Undergraduate.
Fundamentals of Python programming language; focus on programming designed to automate ArcGIS geoprocessing tasks, manipulate spatial data (including geometries and rasters), and create customized tools.
**Prerequisites:** jr st; C+ or better in Geog 525(P) or cons instr.
**Last Taught:** Fall 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 647 GIS/Cartography Internship**
1-6 cr. Undergraduate.
Practical GIS/cartography experience with government agency or private firm under supervision of working expert and faculty member. Intern’s contract specifies duties and duration.
**Prerequisites:** jr st; declared geography major; writ cons instr.
**Last Taught:** Spring 2021, Spring 2020, Spring 2019, Spring 2018.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 660 Perspectives on Geography**
3 cr. Undergraduate.
Seminar on concepts, methods, and approaches to geographic inquiry. Discussion of professional geographic materials, bibliographic procedures and methodologies.
**Prerequisites:** sr st; declared geography major; writ cons instr.
**Last Taught:** Spring 2021, Spring 2020, Spring 2019, Spring 2018.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 650G Geography Field Work**
3 cr. Undergraduate/Graduate.
Geographic field techniques and field problems; classroom preparations and field projects.
**Prerequisites:** jr st; writ cons instr.
**Course Rules:** Students will pay fieldwork expenses. May be retaken w/ chg in topic to 9 cr max.
**Last Taught:** Summer 2021, Summer 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 650G Geography Field Work**
3 cr. Undergraduate/Graduate.
Geographic field techniques and field problems; classroom preparations and field projects.
**Prerequisites:** jr st; writ cons instr.
**Course Rules:** Students will pay fieldwork expenses. May be retaken w/ chg in topic to 9 cr max.
**Last Taught:** Summer 2021, Summer 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 656G Geography Field Work**
3 cr. Undergraduate/Graduate.
Geographic field techniques and field projects; classroom preparations and field projects.
**Prerequisites:** jr st; writ cons instr.
**Course Rules:** Students will pay fieldwork expenses. May be retaken w/ chg in topic to 6 cr max.
**Last Taught:** Spring 2017, Spring 2015, Fall 2012, Spring 2012.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 696 Independent Work in Physical Geography**
1-3 cr. Undergraduate.
Independent reading or project on a physical geography topic under the supervision of a geography faculty member.
**Prerequisites:** jr st; 2.5 GPA; writ cons instr, dept chair, & asst dean for SAS.
**Course Rules:** May be retaken w/chg in topic to 6 cr max.
**Last Taught:** Spring 2017, Spring 2015, Fall 2012, Spring 2012.
**Current Offerings:** https://catalog.uwm.edu/course-search/

**GEOG 698 GIS/Cartography Internship**
1-6 cr. Undergraduate.
Practical GIS/cartography experience with government agency or private firm under supervision of working expert and faculty member. Intern’s contract specifies duties and duration.
**Prerequisites:** jr st; Geog 215(P); writ cons instr & dept chair.
**Course Rules:** May be retaken to 6 cr max.
**Last Taught:** Spring 2021, Fall 2020, Summer 2020, Spring 2020.
**Current Offerings:** https://catalog.uwm.edu/course-search/
GEOG 699 Independent Work
1-3 cr. Undergraduate.
Independent reading or project. See Advanced Independent Study.
Prerequisites: jr st, 2.0 GPA, consent of instructor, department chair, and Assistant Dean for Student Academic Services.
Course Rules: May be retaken with change in topic to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 704 Remote Sensing: Environmental and Land Use Analysis
4 cr. Graduate.
Use of aerial photographs and digital imagery in environmental and land use analysis, including urban areas. 3 hrs lec; 2 hrs lab
Prerequisites: PC/Windows familiarity recom. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 405. Not open for cr to students w/grad cr in Geog 405.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 705 Cartography
4 cr. Graduate.
Thematic cartography; map communication, design principles, illustration and mapping software. 3 hrs lec, 2 hrs lab.
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 405. Not open for cr to students w/grad cr in Geog 405.
Last Taught: Spring 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 716 Watershed Analysis and Modeling
3 cr. Graduate.
Theories and applications of analytical and modeling techniques for watershed processes, including geographic information systems (GIS), statistics, and computer simulations.
Prerequisites: grad st; working knowledge of GIS. 3 cr. Graduate.
Course Rules: Not open for cr to students w/grad cr in Geog 515.
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 726 Geographic Information Science
4 cr. Graduate.
Geographic and information theoretical foundations of geographic information science (GIS). Use of macro languages in a software project to expand GIS functionality. 3 hrs lec, 2 hrs lab.
Prerequisites: grad st. 4 cr. Graduate.
Course Rules: Not open for cr to students w/ grad cr in Geog 515.
Last Taught: Spring 2021, Fall 2020, Spring 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 730 Geography of Transportation
3 cr. Graduate.
Geographic analysis of transportation, with emphasis on commodity flows and traffic patterns.
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Not open for cr to students w/ grad cr in Geog 430.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 731 Insurgent Cities - Theorizing geographies of social movements
3 cr. Graduate.
Investigation into how social movements use and produce various spatialities, in relation to state forms, other social movements and forces, media assemblages, the built environment
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 703.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 732 Urban and Regional Dimensions of Globalization
3 cr. Graduate.
Geographic perspectives on urban and regional change as 'developed' and 'less developed' parts of the world become more interconnected by wider international processes of change.
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 405.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 741 Cities, Regions, and Globalization
3 cr. Graduate.
Globalization process and impact on cities and regions, including emergence of global cities and regions, impact on uneven development, and global era urban strategies.
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 703.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 744 Cities, Regions, and Globalization
3 cr. Graduate.
Globalization process and impact on cities and regions, including emergence of global cities and regions, impact on uneven development, and global era urban strategies.
Prerequisites: grad st. 3 cr. Graduate.
Course Rules: Counts as repeat of Geog 703.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 747 Spatial Analysis
4 cr. Graduate.
Advanced analysis techniques, including multivariate relationships and spatial modeling.
Prerequisites: grad st. 4 cr. Graduate.
Course Rules: Counts as repeat of Geog 405.
Last Taught: Fall 2020, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 748 ArcGIS Programming with Python
4 cr. Graduate.
Fundamentals of Python programming language; focus on programming designed to automate ArcGIS geoprocessing tasks, manipulate spatial data (including geometries and rasters), and create customized tools.
Prerequisites: grad st; Geog 726(P). 4 cr. Graduate.
Course Rules: Not open for cr to students w/ grad cr in Geog 647.
Last Taught: Spring 2021, Fall 2019.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 798 GIS/Cartography Internship
1-4 cr. Graduate.
Practical GIS/cartography experience with government agency or private firm under supervision of working expert and faculty member. Intern's contract specifies duties and duration.
Prerequisites: grad st; writ cons instr & dept chair
Course Rules: May be retaken to 8 cr max.
Last Taught: Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 804 Advanced Remote Sensing
3 cr. Graduate.
Advanced techniques of image processing and analysis, including classification, georegistration, and spatial modeling.
Prerequisites: grad st; Geog 704(P) 3 cr. Graduate.
Course Rules: Counts as a repeat of Geog 703.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 810 Introduction to Techniques of Research and Presentation
3 cr. Graduate.
Proseminar on the scholarly use of materials in all aspects of geography; training for effective presentation in both written and oral form.
Prerequisites: grad st.
Last Taught: Fall 2019, Fall 2017, Fall 2014, Fall 2013.
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 826 Intermediate Geographic Information Science
4 cr. Graduate.
Concepts and techniques of geographic information science (GIS), with
emphasis on GIS-based spatial analysis, associated applications, and
technology. 3 hrs lec, 2 hrs lab.
Prerequisites: grad st; Geog 525(P) or Geog 726(P) or UrbPlan 591(P) or
UrbPlan 791(P).
Course Rules: Counts as a repeat of Geog 625. Not open for cr to
students w/grad cr in Geog 625.
Last Taught: Fall 2020, Fall 2019, Fall 2018.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 827 Qualitative Research
3 cr. Graduate.
Qualitative research as applied in geography, including the relationship
between quantitative and qualitative approaches, issues of interpretation,
and ethics of field work.
Prerequisites: grad st.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 834 GIS and Society
3 cr. Graduate.
Interconnected relationship between Geographic Information Science
(GIS) and society, including hidden impacts and implications of such a
relationship.
Prerequisites: grad st.
Last Taught: Fall 2020, Fall 2018, Spring 2014, Fall 2012.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 870 Contemporary Geographic Approaches:
3 cr. Graduate.
Foundations of geographic inquiry, with emphasis on the roles of sub-
disciplines, and generalist/specialist approaches in the development of
geographic science.
Prerequisites: grad st.
Course Rules: Retakable w/chg in topic to 6 cr max.
Last Taught: Fall 2020, Fall 2018, Fall 2016, Fall 2014.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 880 Urban Sustainability
3 cr. Graduate.
Urban sustainable challenges and opportunities that impact the built
environment. Includes review of traditional and innovative sustainable
practices and regulations
Prerequisites: grad st.
Course Rules: Jointly-offered w/& counts as repeat of UrbPlan 880.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 888 Candidate for Degree
0 cr. Graduate.
Available for graduate students who must meet minimum credit load
requirements.
Prerequisites: graduate standing.
Course Rules: Fee for 1 cr assessed; unit does not count towards credit
load for Fin Aid. Repeatable. Satisfactory/Unsatisfactory only.
Last Taught: Spring 2021, Summer 2015, Summer 2014, Fall 2013.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 889 Internship in Geography
1-6 cr. Graduate.
Application of advanced principles of geography in a business,
organizational, educational, political, or other appropriate setting. Intern’s
contract specifies duties and duration.
Prerequisites: grad st; Geog 810(P); writ cons instr & dept chair.
Course Rules: Retakable to 6 cr max.
Last Taught: Summer 2021, Summer 2020, Spring 2015, Fall 2014.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 890 Research and Master Thesis
1-6 cr. Graduate.
Research connected with master thesis.
Prerequisites: grad st.
Course Rules: Retakable to 6 cr max.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 904 Remote Sensing and Urban Analysis
3 cr. Graduate.
Seminar in remote sensing technologies and applications in urban
analyses, including land use/land cover analysis, socio-economic
information estimation, heat-island effect, sprawl monitoring, and growth
modeling.
Prerequisites: grad st; Geog 403(P) or Geog 704(P); Geog 525(P) or Geog
726(P) or UrbPlan 591(P) or 791(P).
Last Taught: Spring 2020, Fall 2015, Spring 2012.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 905 Seminar: Selected Topics in Geography:
3 cr. Graduate.
Prerequisites: grad st.
Course Rules: Retakable w/topic chg to 9 cr max.
Last Taught: Fall 2019, Fall 2017, Fall 2016, Spring 2015.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 910 Techniques of Research and Presentation
3 cr. Graduate.
Seminar on theoretical and practical aspects of geographic research,
funding, presentation, and publication.
Prerequisites: grad st in Geog Ph.D. program.
Last Taught: Fall 2019, Fall 2017, Fall 2014, Fall 2013.
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 926 Advanced Geographic Information Science: Geographic
Modeling
3 cr. Graduate.
Advanced spatial modeling with both GIS and other tools of geo-
computation, including examination of conceptual models aimed at an
analysis of their possible implementation.
Prerequisites: grad st; Geog 826(P).
Course Rules: Counts as a repeat of Geog 725.
Last Taught: Spring 2020.
Current Offerings: https://catalog.uwm.edu/course-search/
GEOG 932 Seminar: Economic Geography:  
3 cr. Graduate.  
Analysis in depth of significant topics in advanced economic geography specializations: agricultural geography, geography of manufacturing, and geography of transportation.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 934 Seminar: Urban Geography:  
3 cr. Graduate.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 940 Seminar: Physical Geography:  
3 cr. Graduate.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 941 Seminar: Climatology:  
3 cr. Graduate.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 942 Seminar: Geography of Land Form:  
3 cr. Graduate.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 945 The Internal Structure of the City  
3 cr. Graduate.  
The interaction of forces responsible for the evolution of the city as a spatial form and the allocation of economic and social activity within the spatial configuration.  
Prerequisites: grad st.  
Course Rules: Geog 945 & Urb Std 945 are jointly-offered; they count as repeats of one another.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 960 Seminar: Geographic Techniques:  
3 cr. Graduate.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 9 cr max.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 990 Research and Doctoral Dissertation  
1-12 cr. Graduate.  
Research projects connected with dissertation.  
Prerequisites: grad st.  
Course Rules: Retakable to 12 cr max.  
Last Taught: Summer 2021, Spring 2021, Fall 2020, Spring 2020.  
Current Offerings: https://catalog.uwm.edu/course-search/

GEOG 999 Independent Work  
1-6 cr. Graduate.  
Independent reading or project.  
Prerequisites: grad st.  
Course Rules: Retakable w/chg in topic to 12 cr max.  
Last Taught: Summer 2021, Spring 2021, Fall 2020, Spring 2020.  
Current Offerings: https://catalog.uwm.edu/course-search/