

DEPARTMENT OF GEOGRAPHY AND PLANNING

Patrick Lawrence, Chair

Neil Reid, M.A. Program Director and M.A. Graduate Advisor

Degrees Offered

- Graduate Certificate in GIS and Applied Geography (<https://catalog.utoledo.edu/graduate/arts-social-sciences-education/departments-schools/geography-planning/certificate-gis-applied-geography/>)
- Graduate Certificate in Urban and Regional Planning (<https://catalog.utoledo.edu/graduate/arts-social-sciences-education/departments-schools/geography-planning/certificate-urban-regional-planning/>)
- M.A. in Geography (<https://catalog.utoledo.edu/graduate/arts-social-sciences-education/departments-schools/geography-planning/ma-geography-planning/>)

GEPL 5040 Geography Education Strategies

[3 credit hours]

Graduate level preparation for K - 12 educators with geography specialization. Integrates social studies and standard geography curricula in response to state and federal mandates.

Term Offered: Fall

GEPL 5110 Geographic Information Systems

[3 credit hours]

Introduction to computerized methods for the capture, storage, management, analysis and display of spatially-referenced data for the solution of planning, management and research problems.

Term Offered: Spring, Summer, Fall

GEPL 5160 Patterns Of World Development

[3 credit hours]

Examination of contemporary global economic patterns and trends. Topics receiving special attention include population problems, the spread of multinational corporations, and the causes and consequences of the emergence of postindustrial economics.

Term Offered: Fall

GEPL 5180 Geographic Information Systems Applications

[3 credit hours]

Advanced applications in geographic information systems (GIS) with an emphasis on advanced GIS analysis techniques, Global Positioning System applications in GIS, database design, and a survey of vector- and raster-based GIS software and databases. Research project required.

Prerequisites: GEPL 5110 with a minimum grade of D- or GEPL 4110 with a minimum grade of D-

Term Offered: Spring

GEPL 5210 Land Use Planning

[3 credit hours]

A broad review of urban and regional planning in the US and Western Europe, introducing land use planning concepts and practices and their role in shaping the direction of urban development.

Term Offered: Spring

GEPL 5300 GIS Programming

[3 credit hours]

Introduction to computer programming languages that can customize and expand the capability of geospatial science and technology (GIS&T). Major topics include programming fundamentals, Python, ArcPy, Jupyter, and their applications.

Prerequisites: GEPL 2020 with a minimum grade of D- and GEPL 4110 with a minimum grade of D-

Term Offered: Spring

GEPL 5310 Geography of Gypsies (Romanies) and Travelers

[3 credit hours]

Explorations into identities and distributions of Gypsies (Romanies) and Travelers (GR&T peoples) worldwide and the challenges that their study presents to Geography and to other social science disciplines.

Term Offered: Spring, Summer, Fall

GEPL 5400 GeoAI and Machine Learning

[3 credit hours]

Introduction to the concepts, principles, methods, and tools of artificial intelligence (AI), machine learning (ML), and deep learning (DL) in the geosciences. As an advanced GIS&T programming course, this course exhibits wide applications and promising potentials of AI, ML, and DL in solving real-world problems.

Prerequisites: GEPL 4110 with a minimum grade of D- and GEPL 4300 with a minimum grade of D-

Term Offered: Fall

GEPL 5420 Quantitative Methods in Geographic Research

[3 credit hours]

An examination of quantitative methods commonly used in geographic research with an emphasis on spatial statistics and cartographic analysis.

Term Offered: Fall

GEPL 5490 Remote Sensing Of The Environment

[3 credit hours]

Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition. Recommended: GEPL 3550.

Term Offered: Fall

GEPL 5500 Digital Image Analysis

[3 credit hours]

Using imagery captured by earth orbiting satellites, students will document changes on the surface of the earth addressing environmental issues. Students will have the opportunity to learn applications of this technology including project based work in the classroom.

Prerequisites: GEPL 4490 with a minimum grade of D- or EEES 4490 with a minimum grade of D- or GEPL 5490 with a minimum grade of C or EEES 5490 with a minimum grade of C

Term Offered: Spring

GEPL 5520 Analytical And Computer Cartography

[3 credit hours]

The theoretical and mathematical foundations of the mapping process in a digital environment. An introduction to the structure and manipulation of graphic and nongraphic geographical data to produce maps.

Prerequisites: GEPL 4110 with a minimum grade of D- and GEPL 5110 with a minimum grade of C

Term Offered: Spring

GEPL 5530 Principles Of Urban Planning

[3 credit hours]

Elaborations on planning theory. The planner's role in land use regulation, economic development, housing and social service delivery is reviewed.

Term Offered: Fall**GEPL 5540 Weather And Climate**

[3 credit hours]

Survey analysis of meteorology and climatology. The physical processes of weather and the pattern of climate provide the basis for this course.

Term Offered: Summer, Fall**GEPL 5570 Land Development And Planning**

[4 credit hours]

The exploration of theoretical location analysis, pragmatic land development issues and analytic feasibility tools, and the consequences of land use policies that affect development.

Term Offered: Spring**GEPL 5580 Location Analysis**

[4 credit hours]

The application of geographic location theory, spatial interaction modeling, optimization techniques and geographic information system processing to the solution of facility location problems.

Prerequisites: GEPL 5570 with a minimum grade of D-**Term Offered:** Spring**GEPL 5600 Urban Design**

[3 credit hours]

Concepts and procedures for the organization, design and development of public and private urban forms and spaces at the micro-level, including a survey of intraurban elements, cultural, ecological and aesthetic considerations, historic preservation, and interdisciplinary collaboration. Research project required.

Term Offered: Fall**GEPL 5650 Geography of Earth Systems**

[3 credit hours]

Using an Earth System Science approach linking the hydrosphere, biosphere, atmosphere, and lithosphere, students will explore the relationship and spatial characteristics of events such as hurricane landfall, volcanic eruptions and climate change.

Term Offered: Spring**GEPL 5700 Community Planning Workshop**

[3 credit hours]

This course introduces the skills and techniques used by practitioners in the planning process. Assignments will focus on the collection, analysis and communication of information by following community planning approaches.

Term Offered: Spring**GEPL 5710 Urban Geography**

[3 credit hours]

Geographic perspectives on the social, political and economic functions of cities. Issues of land use, redevelopment, residential and commercial geographies are examined in contemporary North American cities.

Term Offered: Spring, Fall**GEPL 5750 Transportation Geography**

[3 credit hours]

The role of transportation and communication in the economic development of places. Theories of geographic interaction, location of transport routes and the developmental implications of transport investments are explored.

Term Offered: Spring, Fall**GEPL 5800 Geospatial Science Research**

[3 credit hours]

A seminar/capstone course to guide students in integrating Geographic Information Science and Technology (GIS&T) knowledge, exploring research questions, conducting research projects, and composing journal-standard articles.

Prerequisites: GEPL 4110 with a minimum grade of D- and GEPL 4300 with a minimum grade of D- and GEPL 4400 with a minimum grade of D-**Term Offered:** Spring**GEPL 5810 Political Geography**

[3 credit hours]

Space and place facets of population size, growth, migration, distribution and composition with emphasis on the population trends and patterns in both developing and developed nations.

Term Offered: Spring, Fall**GEPL 5910 Directed Research**

[1-3 credit hours]

GEPL 5920 Readings in Geography

[1-3 credit hours]

GEPL 6100 Philosophy & General Methodology

[3 credit hours]

Past and current trends in geographic thought and related methodological implications, with elaborations by current faculty members.

Term Offered: Fall**GEPL 6150 Seminar In Research Methods**

[3 credit hours]

A computer-based course in geographic research methodology. The course includes an introduction to research design, data measurement, spatial sampling and multivariate approaches to the study of areal networks and spatial distributions.

Term Offered: Spring**GEPL 6530 Seminar-Urban/Regional Planning Applications**

[3 credit hours]

The course applies forecasting and projection techniques to urban and regional problems. Population, economic base, land use, retail and fiscal impact analyses are examined.

GEPL 6550 Seminar In Environment Planning

[3 credit hours]

Intensive group study of major goals and methodologies of environmental planning. Major emphasis is placed upon individual student research projects oriented toward specific environmental planning problems.

GEPL 6700 Teaching Practicum In Geography

[1-6 credit hours]

Methods of teaching geography in a university of college setting. Supervision of labs or discussion.

Term Offered: Spring, Summer, Fall

GEPL 6890 Professional Development in Geography and Planning

[3 credit hours]

Study of professional practices, knowledge, and skills required for pursuing opportunities in the public or private sector in geography and planning, including important issues of considering career planning, networking, ethics, writing and publishing.

Term Offered: Spring**GEPL 6910 Comprehensive Exam Preparation**

[2 credit hours]

The course is used for the completion of the comprehensive exam requirement for M.A. candidates.

Prerequisites: (GEPL 6100 with a minimum grade of D- and GEPL 6150 with a minimum grade of D-)

Term Offered: Spring, Fall**GEPL 6920 Research Design**

[3 credit hours]

The course will have students prepare all the main components of a thesis proposal leading to the completion presentation of the proposal to their thesis advisory committee.

Term Offered: Spring**GEPL 6930 General Seminar**

[3 credit hours]

GEPL 6940 Internship In Planning

[1-6 credit hours]

Professional work experience with a Greater Toledo planning organization related to academic education.

Term Offered: Spring, Summer, Fall**GEPL 6950 Applied Geographic Workshop**

[3 credit hours]

Capstone course for GIS/Applied Geographics certificate program to provide hands-on experience in applying GIS, remote sensing and desktop mapping systems to spatially-oriented problems that are unique to their individual disciplines.

Term Offered: Spring, Fall**GEPL 6960 Thesis**

[1-6 credit hours]

Work on a thesis is the culmination of graduate education and occupies most of the second year.

Term Offered: Spring, Summer, Fall