Graduate Course Offerings

GE 502. **Problems in Political Geography.** 3 semester hours. The role of geographic factors in influencing the political structure of nations.

GE 503. **Nature and Society Interactions.** 3 semester hours. This course involves a global analysis of human-environmental issues including human’s impact on the environment and the environment’s impact on humans. Topics addressed may include, but are not limited to, global warming, over-population, environmental degradation, environmental hazards and disasters, and effective natural resources use. Fieldwork required.

GE 504. **Environmental Hazards.** 3 semester hours. Natural and technological events continue to impact people and places across the globe. This course draws upon hazard and disaster experiences to address the nature, impact, and social responses to environmental hazards. Course focus is on the relationship between nature, society, and technology and analyzes how people and places experience, cope with, and recover from environmental hazards.

GE 510. **Integration of Geography and History.** 3 semester hours. The integration of the spatial concepts of geography with the chronological concepts of history.

GE 513. **Geography of Asia.** 3 semester hours. An analysis of the distribution of resources and people of Asia, relationships to each other and to the rest of the world.

GE 520. **Principles of Urban and Regional Planning.** 3 semester hours. This course introduces planning both as a profession and also as an important element of city, county, and regional government. Focusing on American planning experience, GE 520 covers the fundamentals of spatial decision-making at various levels of government. Substantive areas covered in the course include, the legal basis of planning, organizational structure of planning agencies in the US, comprehensive planning, social issues in planning, tools of land use regulation, growth management techniques, smart growth, transportation planning, environmental planning and urban design. Cross-listed as GE 420 but creditable only in field in which enrolled. (Fall)

GE 535. **Geomorphology.** 3 semester hours. This course is designed to provide a deeper study of the regional landscapes of North America and other world regions and to provide an increased understanding of the geomorphic and tectonic processes that shape the landscape. Understanding the differences in landscape features and processes will be enhanced by direct contact and observation with the features and processes. Field trips are required. Pre-requisite: GE 112 or ES 121. Course fee: $30.00.

GE 554. **Remote Sensing.** 4 semester hours. This course expands upon concepts and methods of remote sensing through the digital interpretation of satellite imagery. The interpreted information (data and findings) will support the understanding of the processes involved in land use and land cover analysis, change detection, and the map update process. The course includes lecture and discussion related to remote sensing and image processing theory with associated practical laboratory exercises.
and applications for satellite image analysis and digital image processing. Three class periods; one 2-hour laboratory period per week. Course fee: $30.00.

GE 560. **Advanced Cultural Geography.** 3 semester hours. A conceptual approach to the study of human environment systems, cultural landscape, ecological perspectives, environmental perception and behavior, and environmental stress. Prerequisite: GE 102 or departmental approval.

GE 572. **Historical Geography of the United States.** 3 semester hours. The role of geographic conditions in the exploration, settlement, and development of the United States.

GE 584. **Applied Geospatial Analysis.** 3 semester hours. The course encompasses advanced reading and discussion of state-of-the-art projects and techniques in Geographic Information Systems, remote sensing, computer cartography, and image processing. Projects required for this class include but are not limited to urban, environmental, and human geography problems. Students will conduct a detailed data-base development project including database design, data-base population, data management, and the application of spatial modeling techniques. Course fee: $30.00.

GE 595. **Geography Internship.** 1-3 semester hours. Open to graduate students in the Department of Geography. A work-related experience with a public or private organization in which the graduate student gains experience in the professional geography field.

GE 597. **Special Topics.** 1-4 semester hours. A study of one or more selected topics in applied or theoretical geography. Topics vary according to the needs of the students and the current professional environment. May be repeated for credit if the topic is different.

GE 599. **Independent Study-Practicum.** 3 semester hours. Open to graduate students on approval of the department chair. Provides for independent study and research under departmental determination, supervision, and evaluation.

GE 600. **Geographic Thought.** 3 semester hours. A study of the history and development of geographic thought, the evolution of the discipline of geography, and contemporary geographic philosophies, paradigms, and debates.

GE 601. **Physical Geography for Teachers.** 3 semester hours. Considers the spatial aspects of climate, vegetation, soils, and landforms with special emphasis given to map use and map interpretation skills.

GE 602. **Cultural Geography for Teachers.** 3 semester hours. Considers the spatial aspects of human culture including location, population, migration, economics, politics, and global interdependence with special emphasis on map and atlas interpretation skills.

GE 603. **Regional Geography for Teachers.** 3 semester hours. An examination of the spatial distribution of physical and cultural attributes which give uniqueness and diversity to world regional patterns on the Earth’s surface.

GE 604. **Methods and Materials of Geographic Education.** 3 semester hours. The examination and application of instructional
procedures and materials focusing upon current geographic objectives, concepts, and methods of learning appropriate to the needs of teachers of geography.

GE 605. Field Experience in Geography. 3 semester hours. A field-oriented approach to the study of environmental concepts, including man-Earth relationships. Designed to be offered as a Saturday course during the regular school year or as a short summer course to allow for an adequate block of time to engage in field work.

GE 609. Geographic Methods and Design. 3 semester hours. This course presents the core competencies required to perform professional level research in geography. The course will review methods of research design and methodology, with a focus on appropriate geographic and statistical techniques required.

GE 610. Seminar in Geospatial Science. 3 semester hours. Geospatial science delves into determining the correct data and technology to address today’s issues related to humans and their environment. An understanding of geospatial science provides a distinct perspective on the world, a unique lens through which to examine and interpret events, patterns, and processes that operate on or near the surface of Earth. The Seminar in Geospatial Science builds upon students’ progression through a series of techniques courses in Geographic Information Science, remote sensing, and applications in urban, environment, and nature and society interaction.

GE 620. Planning Theory and Process. 3 semester hours. This course is designed to provide an overview of the development of planning theory as it applies to the field of Urban and Regional Planning in the United States. The course will critically evaluate trends in planning theory with a focus on the evolution of main ideas and people who have influenced the field of planning in the U.S. To accomplish this goal, emphasis will be placed on normative conceptual, methodical issues and various roles planners play, and also the ethical dilemmas they face in practice.

GE 624. Advanced Remote Sensing. 3 semester hours. This course provides students with advanced topics in remote sensing and image processing including change detection, image fusion, principle components analysis, spectral signatures, fuzzy classification, and pattern recognition. This course includes classroom instruction, videos, laboratory exercises, fieldwork, and state-of-the-art digital image processing techniques, all to support the interpretation of satellite imagery for extraction of land use and land cover information. One field trip is required. Prerequisite: GE 554 or graduate image processing course. Course fee: $50.00.

GE 625. Cartographic Design and Visualization. 3 semester hours. This course is concerned with advanced map communication concepts; cartographic visualization; designing graphic solutions to geographic situations and needs; illustrating spatial patterns; and considering cartographic representations in terms of aesthetics. Prerequisite: cartography or equivalent undergraduate cartography class. Course fee: $50.00.

GE 684. Spatial Modeling and Analysis in Geographic Information Science. 3 semester hours. This course focuses on advanced problem solving in the spatial environment including GIS system planning, and design, error handling and quality control,
decision support techniques, exploratory data analysis, and spatial statistics and geostatistical analysis. Course labs and projects will focus on current issues, events, and opportunities in GIScience. Prerequisites: GE 554 and GE 584. Course fee: $50.00.

GE 692. Research. 3 semester hours. This course involves the selection of a research topic, collection and analysis of primary and secondary sources, fieldwork, and composition of research paper under faculty supervision. May be taken more than once. A grade of "SP" indicating satisfactory progress or a grade of "UP" for unsatisfactory progress will be recorded on the transcript. This course may be used to maintain continuous enrollment. Permission of supervising faculty and graduate director required.

GE 695. Thesis. 3-6 semester hours. This course involves the selection of a thesis topic, collection and analysis of primary and secondary sources, fieldwork, and composition of thesis and thesis defense under faculty supervision. May be taken more than once. A grade of "SP" indicating satisfactory progress or a grade of "UP" for unsatisfactory progress will be recorded on the transcript. This course may be used to maintain continuous enrollment. Permission of supervising faculty and graduate director required.

GE 697. Advanced Topics. 3 semester hours. Selected topics in geospatial science offered by faculty. May be repeated for credit if the topic is different. Prerequisite: permission of instructor required in order to enroll.

GE 699. Thesis and Research Defense. 0 semester hours. This course serves as an orientation to and administration of an oral examination for the M.S. in Geospatial Science program. A non-credit course required of all candidates for the thesis and non-thesis options. The course is to be taken during the last term in which the student is expected to complete all other program requirements. A grade of "S" indicating satisfactory performance or a grade of "U" for unsatisfactory performance will be recorded on the transcript. A grade of "S" is required for graduation; the course may be repeated once. Prerequisite: student must have completed all other program requirements or be enrolled in the last course for program completion.