

MASTER OF APPLIED GEOGRAPHY (M.A.GEO.) MAJOR IN GEOGRAPHY RESOURCE AND ENVIRONMENTAL STUDIES

Major Program

The Master of Applied Geography (M.A.Geo.) degree program is designed to prepare geographers to use their skills and background knowledge to solve real-world problems with geographic dimensions. Applied Geography includes such sub-fields as Environmental Management, Geographic Education, GIS, Cartography, Land use Planning, Location Analysis, Land Management, Transportation Systems Planning, Applied Physical Geography, Geographic Aspects of Environmental Law, and Spatial Modeling.

Financial Assistance

Graduate assistantships are available to qualified candidates. Please contact the graduate program coordinator in the Department of Geography for more information about financial assistance and the degree programs. For scholarship information, please visit The Graduate College website at <http://www.gradcollege.txstate.edu/funding.html>.

Application Requirements

The items listed below are required for admission consideration for applicable semesters of entry during the current academic year. Submission instructions, additional details, and changes to admission requirements for semesters other than the current academic year can be found on The Graduate College's website (<http://www.gradcollege.txstate.edu>). International students should review the International Admission Documents webpage (<http://mycatalog.txstate.edu/graduate/admission-documents/international>) for additional requirements.

- completed online ApplyTexas application
- \$40 nonrefundable application fee
- \$50 nonrefundable international evaluation fee (if applicable)
- baccalaureate degree from a regionally accredited university
- official transcripts required from **each institution** where course credit was granted
- minimum 3.2 GPA in your last 60 hours of undergraduate course work (plus any completed graduate courses)
- background course work
- official GRE scores required with a preferred minimum of 300 (verbal and quantitative sections combined)
- resume/CV
- statement of purpose identifying the student's preferred degree and concentration and possible areas of research
- three letters of recommendation

TOEFL or IELTS Scores

Non-native English speakers who do not qualify for an English proficiency waiver:

- official TOEFL iBT scores required with a 78 overall
- official IELTS (academic) scores required with a 6.5 overall and
 - minimum individual module scores of 6.0

This program does **not** offer admission if the scores above are not met.

Degree Requirements

The Master of Applied Geography (M.A.Geo.) degree with a major in Geography Resource and Environmental Studies that requires 33 semester credit hours. Students who do not have the appropriate background course work may be required to complete leveling courses.

Course Requirements

Code	Title	Hours
Required Courses		
GEO 5300	Applied Research Design and Techniques	3
GEO 5301	Multivariate Quantitative Methods	3
GEO 5309	Geographical Analysis	3
GEO 5335	Directed Research	3
Concentration		
GEO 5313	Environmental Management	3
GEO 5314	Geographic Elements of Environmental Law	3
Choose 9 hours from the following:		9
GEO 5312	Managing Urbanization	
GEO 5316	Applied Physical Geography	
GEO 5317	Seminar in Applied Human Geography	
GEO 5330	Geography of Hazards	
GEO 5334	Applied Water Resources	
GEO 5336	Transportation Systems	
GEO 5339	The Geography of Land Management	
GEO 5349	Population Geography	
GEO 5351	Regional Waste Management	
GEO 5352	Air Quality Management	
GEO 5370	Seminar in Applied Physical Geography	
GEO 5390	Independent Study	
GEO 5418	Geographic Information Systems I	
GEO 5430	Field Methods	
Electives		
Choose 6 hours from the following:		6
GEO 5308	Regional Field Studies	
GEO 5312	Managing Urbanization	
GEO 5313	Environmental Management	
GEO 5314	Geographic Elements of Environmental Law	
GEO 5316	Applied Physical Geography	
GEO 5317	Seminar in Applied Human Geography	
GEO 5318	Environment Problems of the U.S.-Mexico Border	
GEO 5319	Seminar in Nature and Heritage Tourism	
GEO 5322	Interpretive Environmental Geography	
GEO 5323	Location Analysis	
GEO 5326	Parks and Protected Places	
GEO 5329	Historical Geography of the Environment	

GEO 5330	Geography of Hazards
GEO 5332	Environmental Geography of the Coastal Zone
GEO 5334	Applied Water Resources
GEO 5336	Transportation Systems
GEO 5339	The Geography of Land Management
GEO 5340	Active Learning in Geography
GEO 5341	Contemporary Issues in Geographic Education
GEO 5342	Seminar: Theory and Methods of Geographic Education
GEO 5343	Technology in Geographic Education
GEO 5344	Seminar in Geographic Curriculum
GEO 5349	Population Geography
GEO 5351	Regional Waste Management
GEO 5352	Air Quality Management
GEO 5353	Emergency Management
GEO 5360	Seminar in Planning Problems
GEO 5370	Seminar in Applied Physical Geography
GEO 5380	Internship
GEO 5390	Independent Study
GEO 5395	Problems in Applied Geography
GEO 5408	Web Mapping
GEO 5415	Geographic Applications of Remote Sensing
GEO 5417	Advanced Cartographic Design
GEO 5418	Geographic Information Systems I
GEO 5419	Geographic Information Systems II
GEO 5424	GPS and GIS
GEO 5430	Field Methods
GEO 5680	Internship

May choose 3 hours of advisor-approved electives from outside the department

Total Hours 33

Comprehensive Examination Requirements

All candidates for graduate degrees must pass one or more comprehensive examinations.

Master's level courses in Geography: GEO

Courses Offered Geography (GEO)

GEO 5190. Independent Study.

Individual study under direct supervision of a professor. May involve geographic field trips. GEO 5190, GEO 5290, and GEO 5390 may be taken for a total of six semester hours of credit. Enrollment requires consent of the instructor.

1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5199B. Thesis.

This course represents a student's continuing thesis enrollments. The student continues to enroll in this course until the thesis is submitted for binding.

1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5290. Independent Study.

Individual study under direct supervision of a professor. May involve geographic field trips. GEO 5190, GEO 5290, and GEO 5390 may be taken for total of six semester hours of credit. Enrollment requires consent of the instructor.

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5299B. Thesis.

This course represents a student's continuing thesis enrollments. The student continues to enroll in this course until the thesis is submitted for binding.

2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5300. Applied Research Design and Techniques.

Students will be introduced to appropriate research methods for applied geographers. Emphasis will be placed on the scientific method, productive library research, data collection and analysis, fieldwork, effective writing, and the nature of graphic representation.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5301. Multivariate Quantitative Methods.

The use of multivariate descriptive and inferential statistics as applied to geographic data and problems, beginning with the general linear model and including topics such as multiple regression, principal components analysis, discriminant analysis, and clustering algorithms. Prerequisite: GEO 3301 or equivalent.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5308. Regional Field Studies.

Study of geographic phenomena during field excursions to a particular site or region. Students will study the physical and/or cultural environments through off-campus field experience. Students will research, analyze, and report on major regional geographic features. Repeatable once for additional credit with a different site or region.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5309. Geographical Analysis.

A survey of typical spatial problems of interest to geographers, with emphasis on current research and application being undertaken by the faculty in the Department of Geography. Topics include environmental geography, geographic education, land use and regional development, and cartographic representation and geographic information theory.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5312. Managing Urbanization.

Survey methods and procedures related to managing and preparing for urban growth. Selected topics for examination include transportation planning, housing, historic preservation, and environmental design.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5313. Environmental Management.

An analysis of the major causes of environmental deterioration together with the basic strategies of dealing with these problems.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5314. Geographic Elements of Environmental Law.

A survey of environmental laws related to land, air, and water pollution. The nature of environmental problems will be studied as they relate to urbanization, industrialization, land development, noise, radiation and solid waste management, and the laws and guidelines that have been passed to alleviate such problems.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5315. Advanced Regional Studies.

Course focus is the region. Case studies will be selected from political and functional regions. Course content will include such information as demographics, economy, physical and social environments, transportation, and foreign trade. May be repeated for credit with a different topic.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5316. Applied Physical Geography.

This course is a survey of methods and techniques used in the collection, analysis, and evaluation of information relating to problems within the physical environment. Emphasis will be on problems characteristic of particular geographic locations or specific environmental settings. Repeatable once for additional credit with a different topic.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5317. Seminar in Applied Human Geography.

A focus on the methods and techniques used in the collection, analysis, and evaluation of information relating to problems within the human geographical environment. Emphasis will be on problems pertaining to particular geographic locations or special environmental settings. Repeatable once for additional credit with a different topic.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5318. Environment Problems of the U.S.-Mexico Border.

This course serves as an in-depth introduction to the physical, social, and environmental landscapes of the region of the U.S.-Mexico Border. The course applies an interdisciplinary perspective to geographic understanding of the environmental and health-related issues experienced by residents of the borderlands. Special attention is given to management and planning solutions to the region's problems.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5319. Seminar in Nature and Heritage Tourism.

This seminar focuses on the special geographic issues of nature and heritage tourism. Particular emphasis is placed on sites and activities, costs and benefits, commoditization and authenticity, resource protection, and substantive learning content of nature and heritage tourism activities.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5322. Interpretive Environmental Geography.

Students learn to use geographic theories and concepts to provide holistic and thematic interpretation of environmental information, as specified by interpretive principles. Students also learn advanced use of traditional and digital presentation techniques and research methods, which include audience assessment and program evaluation.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5323. Location Analysis.

Factors of importance in the decision-making process of locating both public and private sector facilities. Attention will be paid to the location of manufacturing activities, commercial enterprises, and a variety of social service facilities.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5326. Parks and Protected Places.

This course serves as an in-depth introduction to the philosophy, establishment, and operation of public parks, wildlife refuges, protected areas, non-governmental preserves and historic sites. Students will be introduced to the scientific and policy rationale for the creation of such areas as well as methods of classification and acquisition.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5329. Historical Geography of the Environment.

This course will introduce students to ideas, concepts, and literature in historical geography of the environment. It will explore methods used to document past environments and examine environmental changes, and it will analyze the distinctions between historical geography and related fields of study.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5330. Geography of Hazards.

This course focuses on understanding and advancing scholarship in hazards research – the threats to life, health, and welfare caused by natural, technological, and/or social processes, and disasters. Special emphasis is placed on understanding the complexities of the assessment and management of risks, hazards, and disasters at multiple geographic scales.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5332. Environmental Geography of the Coastal Zone.

Investigation of the physical geographic factors associated with the coastal zone and the role of human activities in problems and opportunities characteristic of this environment.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5334. Applied Water Resources.

Application of techniques employed in water management including flood hazards, water supply assessment, and water management strategies.

Students will apply principles to specific watersheds and water problems including the analysis of various physical, land use, and legal parameters.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5335. Directed Research.

A course designed to allow the student to pursue a topic of applied geographic research under the direct supervision of a professor.

Generally, the topic will be something that is not customarily dealt with in an organized class. Topics should be selected that involve library research and field investigation.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5336. Transportation Systems.

The principles and procedures of transportation planning and management will be examined. Transport theory will be discussed as well as the characteristics of various model systems. The effectiveness of federal, state, regional, and local programs and policies will be analyzed. Special emphasis will be placed on mass transit, particularly in view of changes in urban structure and the high costs of energy.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5339. The Geography of Land Management.

This course explores U.S. land management philosophies, techniques, and development approaches. Major topics include land ethics/philosophies, U.S. traditions in cadastral geography, urban sprawl and green development, land conservation techniques, the role of local/state/federal regulations in land management, and the human environmental impacts of land development.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5340. Practicum in Geographic Education.

The content and methods needed for teaching geography in the schools. Emphasis will be on those essential elements that will allow teachers to satisfy current public school curriculum requirements. Preparation of a grade-level specific teaching unit is required.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5341. Contemporary Issues in Geographic Education.

This course examines current approaches to teaching geography in American education. Specific attention will be given to new classroom materials, curriculum reform efforts, and research developments.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5342. Seminar: Theory and Methods of Geographic Education.

A critical analysis of previous and current literature concerning problems in pedagogy, philosophy, teaming theory, research methods, teaching methodologies, and techniques of geographic education. A research paper will be required of each student on a topic related to the course content.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5343. Computer Technology in Geographic Education.

The course emphasizes the applications and theoretical implications of computers in geographic education, particularly the interplay between instructional technology and educational purpose and practice in Geography.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5344. Seminar in Geographic Curriculum.

A survey and discussion of major curricula in geographic education.

Geography will be viewed as a school subject that is part of the social studies, as an element of interdisciplinary studies, and as a stand-alone subject.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5349. Population Geography.

An in-depth study of the spatial distribution and movement of human populations. Course will emphasize current issues and analytical techniques. Topics will include the impact of population growth, spatial diffusion processes, migration trends and theories, explanation of regional demographic differences, and techniques such as population projections.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5350. Practicum in Teaching Geography.

This course introduces key concepts in teaching geography and provides regular training and planned periodic evaluations of instructional responsibilities. Course topics include instructional and assessment strategies in geography and classroom management. This course is required for first-year instructional assistants in the Geography Department. Students do not earn graduate degree credit.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Graduate Assistantship|Exclude from Graduate GPA

Grade Mode: Leveling/Assistantships

GEO 5351. Regional Waste Management.

The principles of effective solid waste planning and management will be examined as they relate to such activities as waste generation, storage and collection, transfer and transportation, processing and volume reduction, resource conservation and recovery, the disposal of wastes, and the handling of special wastes, particularly those of a toxic and hazardous nature.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5352. Air Quality Management.

A geographic assessment of air quality management in the United States. Spatial distribution of the types, sources, and effects of air pollutants. Meteorology and physics of air pollution dispersion. Legislative and regulatory approaches to pollution management. National, state, regional, and local policy development procedures. Geographic methods for air pollution management.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5353. Emergency Management.

This course provides an overview of the most important aspects of emergency management at all geographic scales, with emphasis on local, regional, and federal levels. Best practices and proper methodologies are emphasized as well as ways that students can develop the skills and capabilities for a career in this field.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5360. Seminar in Planning Problems.

A critical and in-depth examination of several problem areas currently facing the planner.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5370. Seminar in Applied Physical Geography.

Critical analysis of theories, models, and techniques of physical geographic research with the focus on application to real-world problems. Repeatable once for additional credit with a different topic.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5380. Internship.

Application of techniques of applied geography in an actual on-the-job setting. Internships will be arranged and supervised by the Internship Director. May be repeated once for additional credit.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5390. Independent Study.

Individual study under direct supervision of a professor. May involve geographic field trips. GEO 5190, GEO 5290, and GEO 5390 may be taken for a total of six semester hours of credit.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5391. Foundation Studies in Geography.

Students develop knowledge and skills required for success in graduate-level coursework in Geography. Course content varies depending on academic preparation. This course does not earn graduate degree credit. Repeatable with different emphasis. Prerequisite: Approval of graduate advisor in Geography.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from Graduate GPA|Leveling

Grade Mode: Leveling/Assistantships

GEO 5393A. Qualitative Methods.

This course introduces the qualitative research paradigm, including appropriate research design, methods of data collection, types of inductive analysis and evaluation, as well as, standards of rigor for research that calls for a deeper understanding of more complex human relationships. The focus and application will be oriented towards human geography.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from 3-peat Processing|Topics

Grade Mode: Standard Letter

GEO 5393B. Biogeography in Mountain Environments.

This course examines how plants and animals interact with and affect geomorphological processes and landforms, and how geomorphological processes, landforms and geological factors affect spatial distribution of animals and plants; all within the environmental limitation and conditions of mountains. The role of humans in affecting these interrelationships will be emphasized.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from 3-peat Processing|Topics

Grade Mode: Standard Letter

GEO 5393C. Exploring Spatial Databases.

This course covers principles of spatial ontologies and spatial semantics to facilitate appropriate database conceptualization, design and implementation. Course assignments and projects will provide in-depth experience with database query languages. Many DBMSs will be reviewed, but practical work will be completed with RDBMSs. Prerequisite: GEO 5418 with a grade of "C" or better, or the equivalent.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from 3-peat Processing|Topics

Grade Mode: Standard Letter

GEO 5393D. Water Resource Planning.

This seminar presents case-studies related to water quality protection and mitigation and to the planning of water supply at the state and regional level from a policy practitioner's perspective. The objective of the course is to identify the components of the planning process and its outcomes, including water-use conservation.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from 3-peat Processing|Topics

Grade Mode: Standard Letter

GEO 5393E. Geomorphology in the Anthropocene.

This course will examine the ways in which humans interact with and affect geomorphological processes and landforms, and how humans directly act as geomorphological agents. The level at which human activities have transformed the surface of the Earth will be examined.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Course Attribute(s): Exclude from 3-peat Processing|Topics

Grade Mode: Standard Letter

GEO 5395. Problems in Applied Geography.

Designed to consider a selected topic relating to applied geography. Emphasis on the practical application of geographic tools, with individual or group participation in a specific project. Course topics may vary depending on student and faculty interests and may apply to any of the three graduate tracks: physical-environmental, land area development and management, or cartography. Repeatable for up to six hours.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5399A. Thesis.

This course represents a student's initial thesis enrollment. No thesis credit is awarded until student has completed the thesis in GEO 5399B.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5399B. Thesis.

This course represents a student's continuing thesis enrollments. The student continues to enroll in this course until the thesis is submitted for binding.

3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5408. Web Mapping.

This course introduces students to modern interactive and dynamic mapping and GIS techniques that allow internet-based cartographic representations of temporal and non-temporal geospatial objects and phenomena. Prerequisite: GEO 3411 or equivalent with a grade of "C" or better.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5415. Geographic Applications of Remote Sensing.

Students will focus on Geographic applications of the principles and practices of digital image processing, classification, and modeling using satellite images.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5417. Advanced Cartographic Design.

This advanced course in cartography focuses on thematic map design. The objective is to produce a series of well-designed, professional grade maps (or an atlas) that students can use to build a cartographic portfolio. Theoretical concepts and principles will be introduced using practical examples and written assignments. Prerequisite: GEO 3411 or equivalent or consent of instructor.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5418. Geographic Information Systems I.

Course is concerned with the analysis and interpretation of maps stored in digital form. Students are introduced to concepts and practices involving computerized cartographic and geographic data input, storage and retrieval, data manipulation and analysis, graphic and tabular report generation, and cartographic modeling.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5419. Geographic Information Systems II.

This course aims to develop more advanced GIS concepts and application issues, further spatial data manipulation and analysis skills, and provide hands-on experience with GIS hardware and software programs. The emphasis will be on practical application of skills to real world issues. Prerequisite: GEO 5418.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5424. GPS and GIS.

Students will learn to plan and conduct fieldwork using Global Positioning System (GPS) to differentially correct GPS data, and to build Geographic Information Systems (GIS) applications using GPS technology. The course is project-based and involves working with external clients(s). Prerequisites: GEO 2426 or GEO 5418, with a grade of "C" or better, or the equivalent.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Grade Mode: Standard Letter

GEO 5430. Field Methods.

Course will emphasize common field techniques necessary in the construction of accurate maps. Various kinds of data collection techniques will be presented that will facilitate geographic research. Prerequisite: GEO 3301 or equivalent.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.

Course Attribute(s): Lab Required

Grade Mode: Standard Letter

GEO 5599B. Thesis.

This course represents a student's continuing thesis enrollments. The student continues to enroll in this course until the thesis is submitted for binding.

5 Credit Hours. 5 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5680. Internship.

Application of techniques of applied geography in an actual on-the-job setting. Internships will be arranged and supervised by the Internship Director.

6 Credit Hours. 6 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit

GEO 5999B. Thesis.

This course represents a student's continuing thesis enrollments. The student continues to enroll in this course until the thesis is submitted for binding.

9 Credit Hours. 9 Lecture Contact Hours. 0 Lab Contact Hours.

Grade Mode: Credit/No Credit