MASTER OF APPLIED GEOGRAPHY (M.A.GEO.), MAJOR IN GEOGRAPHY

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.

Admission Policy
For information regarding application requirements and deadlines, please visit our website at http://www.gradcollege.txstate.edu/geo.html.

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/ and choose Financing Your Graduate Education from the Prospective Students menu.

Degree Requirements
The Department of Geography offers a M.A.Geo. degree that requires 33 semester hours. All candidates must complete a required core and six hours of graduate electives in geography. Students are allowed to take up to six hours of those electives from any discipline outside the department. The remaining 15 hours of the degree are taken in one of the following specializations:

- General Geography
- Geographic Education

In summary, the M.A.Geo. requires:

<table>
<thead>
<tr>
<th>Course Work Requirements</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Course Work</td>
<td>12</td>
</tr>
<tr>
<td>Specialization Course Work</td>
<td>15</td>
</tr>
<tr>
<td>Elective Course Work</td>
<td>6</td>
</tr>
<tr>
<td>Comprehensive Examination</td>
<td>33</td>
</tr>
</tbody>
</table>

Specialization Courses

**General Geography Option**
- Advisor-approved Electives in Geography 15

**Geographic Education Option**
- GEO 5340 Practicum in Geographic Education 3
- Prescribed Electives (Choose 6 hours) 6
  - GEO 5308 Regional Field Studies
  - GEO 5313 Environmental Management
  - GEO 5315 Advanced Regional Studies
  - GEO 5323 Location Analysis
  - GEO 5341 Contemporary Issues in Geographic Education
  - GEO 5342 Seminar: Theory and Methods of Geographic Education
  - GEO 5343 Computer Technology in Geographic Education
  - GEO 5344 Seminar in Geographic Curriculum
  - GEO 5349 Population Geography
  - GEO 5370 Seminar in Applied Physical Geography
  - GEO 5395 Problems in Applied Geography
- Advisor-approved GEO Electives 6

| Total Hours | 15 |

**Elective Courses**
Six hours of electives in geography or from outside the department 6

Master’s level courses in Geography: GEO

Courses Offered

Geography (GEO)
GEO 5150. Practicum in Teaching Geography.
An introduction to key concepts and practices in teaching Geography. Provides regular in-service training and planned periodic evaluations of instructional responsibilities. Required for first-year instructional assistants in the Geography Department. This course does not earn graduate degree credit. Graded on a credit (CR), no-credit (F) basis.

1 Credit Hour. 1 Lecture Contact Hour. 0 Lab Contact Hours.
Course Attribute(s): Graduate Assistantship|Exclude from Graduate GPA

Grade Mode: Leveling/Assistantships
about Practicum in Teaching Geography

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
about Independent Study
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. Graded on a credit (CR), progress (PR), no-credit (F) basis. About Thesis
1 Credit Hour. 1 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit
About Thesis

GEO 5250. Practicum in Teaching Geography.
An introduction to key concepts and practices in teaching Geography. Provides regular in-service training and planned periodic evaluations of instructional responsibilities. Required for first-year instructional assistants in the Geography Department. This course does not earn graduate degree credit. Graded on a credit (CR), no-credit (F) basis. About Practicum in Teaching Geography
2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Course Attribute(s): Graduate Assistantship|Exclude from Graduate GPA
Grade Mode: Leveling/Assistantships
About Practicum in Teaching Geography

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. About Independent Study
2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Independent Study

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. Graded on a credit (CR), progress (PR), no-credit (F) basis. About Thesis
2 Credit Hours. 2 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Credit/No Credit
About Thesis

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. About Applied Research Design and Techniques
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Applied Research Design and Techniques

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. About Multivariate Quantitative Methods
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Multivariate Quantitative Methods

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. About Regional Field Studies
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Regional Field Studies

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. About Geographical Analysis
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Geographical Analysis

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. About Managing Urbanization
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Managing Urbanization

GEO 5313. Environmental Management.
An analysis of the major causes of environmental deterioration together with the basic strategies of dealing with these problems. About Environmental Management
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Environmental Management

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. About Geographic Elements of Environmental Law
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Geographic Elements of Environmental Law

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. About Advanced Regional Studies
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
About Advanced Regional Studies
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
about Applied Physical Geography

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
about Seminar in Applied Human Geography

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
about Environment Problems of the U.S.-Mexico Border

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
about Seminar in Nature and Heritage Tourism

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
about Interpretive Environmental Geography

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.

about Location Analysis
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Location Analysis

GEO 5324. GPS and GIS.
Students will learn to plan and conduct fieldwork using the 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 client(s). Prerequisite: GEO 2426 or GEO 5418 with a grade of "C" or higher.

about GPS and GIS
3 Credit Hours. 2 Lecture Contact Hours. 2 Lab Contact Hours.
Grade Mode: Standard Letter
about GPS and GIS

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.

about Parks and Protected Places
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Parks and Protected Places

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.

about Historical Geography of the Environment
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Historical Geography of the Environment

GEO 5330. Geography of Natural Hazards.
There are five areas of hazards that this course covers: (1) the interdisciplinary nature of natural hazards with emphasis on the role of geography and planning; (2) the geophysical causes of natural hazards; (3) human impact and response to natural disasters; (4) planning and management of hazards; and (5) issues and challenges facing the Third World.

about Geography of Natural Hazards
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.
Grade Mode: Standard Letter
about Geography of Natural Hazards
GEO 5331. Geography of the Hazards of Technology.
An investigation of the theories, methods, issues, and concepts of the major themes in geographic research on technological hazards. This course will focus on the study of spatial problems associated with technologies and the application of research to real-world management of hazards.

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

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.

GEO 5333. 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.

GEO 5334. 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. Group research is encouraged. Topics should be selected that involve library research and field investigation. Progress is monitored regularly by the supervising professor.

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

GEO 5335. 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.

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.

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.

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.

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.

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.

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.
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. 
about Population Geography  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Population Geography

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. 
about Regional Waste Management  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Regional Waste Management

GEO 5352. Air Quality Management.  
about Air Quality Management  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Air Quality 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. 
about Emergency Management  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Emergency Management

GEO 5360. Seminar in Planning Problems.  
A critical and in-depth examination of several problem areas currently facing the planner. 
about Seminar in Planning Problems  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Seminar in Planning Problems

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. 
about Seminar in Applied Physical Geography  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Seminar in Applied Physical Geography

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. Graded on a credit (CR), no credit (F) basis. 
about Internship  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Credit/No Credit  
about Internship

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. 
about Independent Study  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Independent Study

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 credit. Repeatable with different emphasis. Prerequisite: Approval of graduate advisor in Geography. 
about Foundation Studies 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  
about Foundation Studies in Geography

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. 
about Problems in Applied Geography  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Standard Letter  
about Problems in Applied Geography

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. Graded on a credit (CR), progress (PR), no-credit (F) basis. 
about Thesis  
3 Credit Hours. 3 Lecture Contact Hours. 0 Lab Contact Hours.  
Grade Mode: Credit/No Credit  
about Thesis
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. Graded on a credit (CR), progress (PR), no-credit (F) basis.

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 higher.

4 Credit Hours. 2 Lecture Contact Hours. 4 Lab Contact Hours.
Course Attribute(s): Lab Required
Grade Mode: Standard Letter

Students will focus on Geographic applications of the principles and practices of digital image processing, classification, and modeling using satellite images. Prerequisite: GEO 3411 or equivalent.

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 5419. 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