

will execute and present a substantial critical or interpretive essay.

Prerequisites: completion of five English courses beyond the freshman level including 380; or, for non-majors, permission of the instructor and the department chair.

483, 484, 485, 486 Seminar

See the description of these courses at the beginning of the “Departments and Curricula” section of this catalog.

487, 488, 489, 490 Topics

The subject matter of these courses, announced in the annual *Class Schedule*, will vary from year to year, but will not duplicate existing courses. See the description of these courses at the beginning of the “Departments and Curricula” section of this catalog.

Prerequisites: 111 and 112 or 190

491, 492, 493, 494 Research

See the description of these courses at the beginning of the “Departments and Curricula” section of this catalog.

495, 496, 497, 498 Individual Study

See the description of these courses at the beginning of the “Departments and Curricula” section of this catalog.

Prerequisites: 111 and 112 or 190

Entrepreneurship

See Division of Business

Environmental Studies

See Interdisciplinary Programs

Family Studies

See Interdisciplinary Minors

Film

See Department of Theater

Financial Management

See Division of Business

French

See Department of Modern and Classical Languages

Geography (GEOG)

Werner (chair), Lorah; Filloon, Loesch

Geography is an interdisciplinary study that offers a rich body of knowledge about the character of diverse places in the world, their cultures and environments. Geography ranges from a broad and comprehensive understanding of the world to the specifics of computer-generated maps and geo-demographic analysis. Geographers make extensive use of computer skills to analyze a wide range of problems, from regional studies to urban structure and habitats.

With training in both the natural and social sciences, geographers have a wide range of careers in government, the private sector, and education. Geographers create digital maps, work with census data, help locate retail and service stores, work in local, state, and federal parks, analyze land use and urban planning, teach, and hold a wide variety of other jobs.

Students graduating with a major in geography will use the perspectives of many disciplines to demonstrate a general and comprehensive understanding of major world problems. They will be adequately prepared for a professional career that is related to geography.

Geography Honor Society

The honor society in geography at St. Thomas is Mu Alpha Pi. The purpose of the society is to further the professional development of geographers through research and academic experiences outside the classroom and laboratory. Students are eligible for membership when they have taken three courses in geography with at least a B average and rank in the upper 35 percent of their class.

Major in Geography

111 Human Geography

112 Physical Geography

113 World Geography

480 Seminar in Geography

Departments

Plus eight credits in methods courses:

- 221 Computer Skills in Geography
- 222 Geographical Analysis
- 321 Geographic Information Systems
- 421 Advanced Geographic Information Systems

Plus four credits in a topical course:

- ECON 333 Urban and Regional Economics
- GEOG 230 Weather and Climate
- GEOG 330 Geography for Business and Planning
- GEOG 430 Urban Geography
- GEOL 252 Geomorphology

Plus four credits in a regional course:

- 240 Geography of East and Southeast Asia
- 340 Geography of the U.S. and Canada
- 384 Field Study in Geography

Plus:

Eight elective geography credits

Teacher Licensure

- Elementary Education with a Specialty in Social Studies (5-8)
- Co-major in Social Studies (5-12) and a Co-major in Secondary Education
- See Department of Teacher Education*

Minor in Geography

- Eight credits in core courses
- Eight credits in methods courses
- Eight elective geography credits

111 Human Geography

This course explores the effects of social, economic, environmental, political, and demographic change from a geographic perspective. It introduces students to a broad range of topics, including the effects of population growth, human impact on the environment, economic development, and globalization. Usually offered every semester. This course fulfills the Social Analysis and Human Diversity requirements in the core curriculum.

112 Physical Geography

This course asks why the natural environment is the way it is and addresses the interrelationships between weather, soils, water, plants, animals and landforms. Because the "natural" environment includes people, the course looks at the role of humans in altering the environment. Usually offered spring semester.

113 World Geography

A country-by-country study of the world. The goal of this course is to emphasize whatever best explains the character of each country. This may be population, economics, resources, or any aspect of nature or humanity that gives an insightful understanding of each country. Usually offered every semester. This course fulfills the Social Analysis and Human Diversity requirements in the core curriculum.

221 Computer Skills in Geography

A course with an emphasis on useful computing, especially computer-generated maps. Topics include the basic operation of a computer, operating systems, spreadsheets, graphic representation of data, map projections and coordinate systems, thematic maps, and map design. An applications-oriented course using ArcView. This course fulfills the second-level Computer Competency requirement in the core curriculum. Usually offered fall semester.

222 Geographical Analysis

This course uses quantitative methods to explore questions of geographic concern. It focuses on collecting, organizing, analyzing and presenting spatial data. Statistical methods are applied in a real-world context - in the spheres of population, production, pollution, and climate change. This course fulfills the second-level Computer Competency requirement in the core curriculum. Usually offered alternate years.
Recommended: 221 or consent of instructor.

230 Weather and Climate

The causes and consequences of weather and climate, from global-scale processes of climate dynamics, the greenhouse effect and El Niño to regional and local-scale processes of fronts, thunderstorms, hurricanes and tornadoes.

Students are introduced to weather map analysis and simple forecasting and observational techniques.

240 Geography of East and Southeast Asia

A regional study of East and Southeast Asian countries with special emphasis on China and Japan. The course examines the resources and physical geography but emphasizes the population, culture and economy in this dynamic region of the world. Usually offered alternate years.

295, 296, 297, 298 Topics

The subject matter of these courses, announced in the annual *Class Schedule*, will vary from year to year, but will not duplicate existing courses. See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

321 Geographic Information Systems

A sequel to 221, the theme of this course is how to perform data analysis using vector-based geographic information systems. Specific topics include spatial database operations, buffers, map overlay and address matching. The course illustrates the principles of Geographic Information Systems using workstation ArcInfo and a variety of real-world applications from demography to environmental studies. This course fulfills the second-level Computer Competency requirement in the core curriculum. Usually offered spring semester.

Prerequisite: A minimum grade of C- in 221

330 Geography for Business and Planning

Geographic techniques for business and planning applications include demographic analysis of customer characteristics, consumer's geographic behavior, trade areas, patterns of retailing, store location problems, site appraisals, optimal routing, and using census data.

340 Geography of the U.S. and Canada

What does the notion of "America" mean? How is this different from other global regions? This course examines the historical creation and expansion of North America from European, African and Asian influences. It then explores the contemporary geography of the continent: different cultural regions, economic characteristics, political variations, and places both special and commonplace that help define the North American experience. Usually offered alternate years.

384 Field Study in Geography

A geographic analysis through field experience. Includes study-abroad courses.

Prerequisite: consent of instructor

421 Advanced Geographic Information Systems

A sequel to 321, this course uses Spatial Analyst to illustrate advanced uses of computers in raster-based spatial analysis. Principles of geographic information systems will be implemented in a wide variety of applications using Spatial Analyst. This course fulfills the second-level Computer Competency requirement in the core curriculum. Usually offered fall semester.

Prerequisite: A minimum grade of C- in 321

430 Urban Geography

This course will focus on themes in the development of contemporary cities with special attention to patterns and trends within the Twin Cities metropolitan area e.g. ethnicity, housing, transportation, historical evolution, and urban growth. Usually offered alternate years.

Prerequisite: 111 or 113 or consent of instructor

475, 476, 477, 478 Experiential Learning

See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

480 Seminar in Geography

In this seminar, we will explore the nature of geography as a discipline. The areas to be covered: history of geographic thought, the position of geography relative to the arts and sciences, different ways of interpreting geographical phenomena, and geography as a vocational and academic career. Research projects will cover these themes and be tailored to the student's interests. Usually offered alternate years.

Prerequisites: four geography courses, including one methods course

481 Advanced Field Study in Geography

A geographic analysis through field experience. Designed for advanced students in geography. Includes study-abroad courses.

Prerequisite: consent of instructor

483, 484, 485, 486 Seminar

See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

Departments

487, 488, 489, 490 Topics

The subject matter of these courses, announced in the annual *Class Schedule*, will vary from year to year, but will not duplicate existing courses. See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

491, 492, 493, 494 Research

See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

495, 496, 497, 498 Individual Study

See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

Geology (GEOL)

(chair to be appointed); Chaplin, director of Division of Natural Sciences and Mathematics

Geology is the science of the earth, and, like other disciplines, it is subdivided into specific studies. The department offers a variety of courses basic to an undergraduate geology curriculum in order to provide the student with a sound foundation.

Those majoring in geology are required to take courses in the allied sciences (biology, chemistry and physics) and in mathematics because of their importance to the study of earth science.

The aims of the Department of Geology are to provide a major program for students who will continue their study of geology in graduate school; to prepare students to do geological work in industry and government; to offer a program that prepares students to teach earth science at the secondary-school level; and to permit interested students to broaden their liberal arts education.

Students graduating with a major in geology will demonstrate a broad general knowledge of the fundamental principles of geology that will include, but not be limited to, the areas of physical, historical, and structural geology, mineralogy, petrology, geomorphology, and stratigraphy or geophysics.

The department also offers courses for non-majors to fulfill the laboratory science component of the core curriculum.

Major in Geology

- 111 Introductory Geology I
- 112 Introductory Geology II
- 211 Mineralogy
- 252 Geomorphology
- 311 Petrology
- 322 Structural Geology
- 421 Geophysics

Plus:

- MATH 113 Calculus I
- MATH 114 Calculus II

Plus two of the sequences:

- BIOL 201 Diversity and Adaptation *and* 202 Genetics and Population Biology

or

- CHEM 111 General Chemistry I *and* 112 General Chemistry II

or

- PHYS 111 Introduction to Classical Physics I *and* 112 Introduction to Classical Physics II

The department recommends that students planning to do graduate work take additional courses in the allied sciences and in mathematics. The department also recommends that students take a summer field course at a recognized geology field camp, preferably between the junior and senior years.

Teacher Licensure

Elementary Education with a Co-major in Science *and* Mathematics for Elementary Education

Elementary Education with a Specialty in Science (5-8)

Co-major in Science (5-8) – Earth and Space (9-12) and a Co-major in Secondary Education

See Department of Teacher Education.

Minor in Geology

- 111 Introductory Geology I
- 112 Introductory Geology II
- 252 Geomorphology
- 322 Structural Geology*

*Prerequisite of 311 is waived for students minoring in geology.