495, 496, 497, 498 Individual Study
See the description of these courses at the beginning of the "Departments and Curricula" section of this catalog.

Film
See Department of Theater.

Financial Management
See Division of Business.

French
See Department of Moden and Classical Languages.

Geography (GEOG)
Werner (chair), Lorah, Filloon*, Loesch*, Lynn*

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.

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

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 330 Geography for Business and Planning
GEOG 430 North American City
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

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 Human Diversity requirement 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 Human Diversity requirement 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 (202)
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.

240 Geography of East and Southeast Asia (302)
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 PCARC/INFO 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: 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 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.
Prerequisite: 111 or 113 or consent of instructor

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 ARC/INFO 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: 321

430 North American City
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. 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.
Prerequisite: four geography courses, including one methods course

481 Advanced Field Study in Geography (formerly 484)
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.

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)

Farnham (chair), Brownstein

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.

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