

in matrix algebra. This course provides a theoretical foundation for the numerical solution of mathematical problems. Offered in spring semester.

Prerequisites: MATH 210 or permission of instructor

MATH 400 Dynamical Systems and Chaos (4 credits)

An introduction to discrete and continuous dynamical systems and applications with topics including: iterated mappings in one and two dimensions, phase-plane theory, nonlinear differential equations, and chaos. Additional topics will be chosen from among bifurcations, stability, attractors, Lyapunov functions, Julia sets and Mandelbrot sets.

Prerequisite: MATH 210 or 317 or permission of instructor

MATH 419 Complex Variables (4 credits)

Analytic functions; theorems of Cauchy; Laurent series; residue calculus; entire and meromorphic functions; conformal mapping.

Prerequisite: MATH 317

MATH 420 Topology (4 credits)

Properties of Euclidean spaces; general spaces; mappings; separation properties; connectedness; compactness; metrizable spaces.

Prerequisite: MATH 317

MATH 450 Advanced Mathematics: Exploration and Exposition (4 credits)

This course gives students a sense of the history, applicability and currency of one or more mathematical ideas and serves as a capstone mathematics course for students seeking to teach secondary mathematics. In the course, students make substantial oral and written presentations on topics carefully selected to have a strong relationship to secondary school mathematics. Topics are included from discrete mathematics and from continuous mathematics. Students use publications, e.g. The American Mathematical Monthly, Mathematics Magazine, Mathematical Intelligencer and Scientific American, as well as standard texts, as sources for their work.

Prerequisite: one of 301 or 317 with concurrent registration in the other; senior or graduate standing and declared intent to complete secondary licensure in mathematics. Other students having the course prerequisites may be admitted, but it is their responsibility to determine the relationship of this course to their program of study.

MATH 475, 476 Experiential Learning (2 credits)

MATH 477, 478 Experiential Learning (4 credits)

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

MATH 483, 484 Seminar (2 credits)

MATH 485, 486 Seminar (4 credits)

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

MATH 487, 488 Topics (2 credits)

MATH 489, 490 Topics (4 credits)

The subject matter of these courses will vary from year to year, but will not duplicate existing courses. Descriptions of these courses are available at www.stthomas.edu/registrar/onlineschedule/.

MATH 491, 492 Research (2 credits)

MATH 493, 494 Research (4 credits)

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

MATH 495, 496 Individual Study (2 credits)

MATH 497, 498 Individual Study (4 credits)

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

Middle Eastern Studies (ACTC)

College of Arts and Sciences

Interdisciplinary Program

Nice (Center for Faculty Development/English), coordinator and UST campus representative

The Middle Eastern Studies Program through the Associated Colleges of the Twin Cities (ACTC) offers an interdisciplinary minor focusing on the Middle East. The term “Middle East” includes the geographic regions of southwest Asia and North Africa, extending from Turkey to the Sudan and from Afghanistan to Morocco. The minor in Middle Eastern Studies considers the following concepts:

1. the Middle Eastern has global significance and is vital to the national interests of many countries, including the United States;
2. increasing numbers of Americans have some Middle Eastern ethnic or cultural background;
3. the region offers numerous opportunities for business and the professions;
4. it is the birthplace of several of the world’s major civilizations and religions.

The minor in Middle Eastern Studies enables students to bring together several courses in different disciplines

Middle Eastern Studies – Modern and Classical Languages

to constitute a program of area study. This area specialization offers students the opportunity to learn about the religions, economics, historical and political developments, literature, philosophy and culture of Middle Eastern peoples and countries. Such an interdisciplinary approach permits students to apply the theory and methodology of several disciplines to a common subject matter and allows a greater mastery of the Middle East area than could normally be attained through strictly disciplinary majors or minors.

A Middle Eastern Studies minor provides valuable preparation for careers in government service, research, non-governmental organizations, journalism, education, and consulting in international business. Acquiring some Middle Eastern expertise will make ACTC students more credible candidates for internships with organizations related to the Middle East.

The minor is offered by combining courses already in place at the ACTC institutions. Courses with a focus on the Middle East are being offered regularly in political science (with historical components), sociology, women's studies and theology. Arabic language classes through the third semester are offered every year at the University of St. Thomas. For higher levels of Arabic, students may enroll at the University of Minnesota through the ACTC language contract. Elementary and intermediate Hebrew are offered at Macalester College.

Consult the MES web site for the offered courses for each academic year (<http://www.associatedcolleges-ctc.org/Majors&minors/middleeast.htm>). The next year's courses are listed before registration opens in the spring.

Minor in Middle Eastern Studies

Requirements

A. Foundational course:

POLS 3580H Politics and Society in the Middle East (Hamline)

B. Five area courses:

2 courses selected from the social sciences

2 courses selected from the humanities

1 elective chosen from either area

Language courses

Students may substitute two courses in a Middle Eastern language for two of the five area studies courses above. Some acquaintance and experience with the Arabic and/or Hebrew languages is highly desirable, particularly for students combining the Middle Eastern Studies minor with a major in business, journalism, or political science.

Internships and Study Abroad

Internships and opportunities for study abroad are strongly recommended and are accepted for credit toward the minor. No more than one course may be an independent study or internship. Study abroad, internships and independent study are subject to the approval of the student's campus advisor for the minor.

Modern and Classical Languages

College of Arts and Sciences

Department of Modern and Classical Languages

Miller, D., (chair); **Arabic** – Khalek; **French** – Bibbee, Dziekowicz (coordinator), Shams; Hartlaub, Pelletier-Skoog; **German** – Fullard, Schons (coordinator); **Spanish** – Badessich (coordinator), Chavarría-Mendoza, Córdova Jr., Pinto, Raschio, Sandmann, Scham, Tar; Johnston, Milstein, Pelletier-Skoog; Rios-Freund, Sanchez-Schwartz; **Classics** –Quartarone; **Irish Gaelic** – Moore; **Japanese** – Heberlein; **Russian** – Grinberg

The Department of Modern and Classical Languages offers major and minor concentrations in classical languages, French, German, Latin and Spanish, with additional minors in Greek and Japanese. A Russian major and minor and a Japanese major are available through the Associated Colleges of the Twin Cities. Language classes are also available in Arabic. In cooperation with the ACTC, courses also are available in Chinese and Italian.

The department also offers major concentrations in language with business (international business – language intensive) and language with English (literary studies).

Students graduating with a major in Classical languages will have acquired a working vocabulary and a knowledge of the structures of Greek and/or Latin adequate to read the works of Greek and/or Latin authors. They will have gained experience in reading major authors in the languages, and will perceive the relationship between the authors and their cultural context.

Students graduating with a major in French will have a solid understanding of the French language and the ability to use the language effectively in speaking, comprehension, reading, and writing. They will have developed the skills necessary for the study, analysis, and interpretation of a wide range of cultural texts, including literary texts.

Students graduating with a major in German will have acquired a command of the German language for use in academic and/or professional life. They will have become acquainted with the culture of the German-speaking countries and with the role these countries and their culture have historically played and continue to play in the world today.

Students graduating with a major in international business – language intensive will be able to demonstrate a command of the appropriate language for use in business and professional life, will understand the historical and cultural development of the countries of that language, and will understand the business practices and economic structure of those countries.