

Service Systems Engineering

SSE 2100 - Introduction to Service Systems Engineering

Introductory course covers the evolution of service systems engineering within the broader context of the engineering disciplines. Careers and professional practice within the discipline will be explored. Topics include systems analysis and design, introduction to quality tools and service systems engineering examples.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall

SSE 2300 - Service Systems Dynamics and Design

Introduces system dynamics principles and explores the effect of system structure and variable interactions on system behavior. Waiting line theory is introduced. Other topics include simulation, mental models, socio-technical systems, rational decision-making, and design.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Spring

Pre-Requisite(s): MA 3710(C) or MA 2720(C)

SSE 3200 - Analysis and Design of Web-based Services

The strategy behind developing web-based service systems will be the focus of the course. Topics will include flowcharting, cost estimating, performance measurement, database management, and alpha and beta testing. A semester project will illustrate the use of these tools.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Spring

Pre-Requisite(s): (CS 1121(C) or CS 1131(C)) and SSE 2300(C)

SSE 3400 - Human Interactions in Service Systems

Service system customers and employees can benefit from user-centered design. This course explores both the psychological and physical characteristics of human beings, as well as cultural influences on their behavior. It introduces data collection methods such as surveys, focus groups, and structured interviews. It then presents how to apply human factors principles to the design process.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall

Pre-Requisite(s): PSY 2000 and (MA 3710(C) or MA 2720(C))

SSE 3500 - Service System Operations

Focuses on the operation of service systems in a customer-focused environment. Topics will include work measurement, performance management, and process evaluation and improvement. Supply chain, demand management and lean practices will also be introduced.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall

Pre-Requisite(s): MA 3710 or MA 2720

SSE 3600 - Optimization and Adaptive Decision Making

Techniques in optimization and adaptive decision making will be introduced. The fundamentals in linear, integer, and goal programming will be applied to real-world problems with a service systems focus. Adaptive decision making techniques including Bayesian analysis, fuzzy systems, and neural networks will also be investigated.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Spring

Pre-Requisite(s): (MA 2320 or MA 2321 or MA 2330) and (MA 2720 or MA 3710)

SSE 4300 - Project Planning and Management for Engineers

The various stages in a project life cycle will be defined and explored such as planning, metrics, execution, completion, and maintenance. Basic tools such as CPM, PERT, Gantt, and budgeting will be introduced. Change assimilation in the context of project management will also be discussed. Not open to students with credit in BA3620.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall

Pre-Requisite(s): MA 2720 or MA 3710

SSE 4600 - Managing Risk

Risk definition and identification in terms of financial, human, legal, and physical constraints will be introduced. Techniques for analyzing and managing risk such as FMEA and Reliability studies will be covered. Other topics will include risk elimination, mitigation, and tolerance.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall

Pre-Requisite(s): MA 2720 or MA 3710

Surveying

SU 1500 - Data Collection Systems

Familiarization to modern data collectors used in conjunction with total stations, GPS receivers, and digital levels. Transferring and displaying survey data within various systems. To include job creation, file types, feature codes, data entry, and COGO routines.

Credits: 1.0

Lec-Rec-Lab: (0-0-2)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Major(s): Surveying Engineering

SU 2000 - Intro to Surveying

Surveying topics will include distance measurements, leveling, angles, directions, traversing, horizontal and vertical curves, percent grade, and coordinate geometry. GIS topics will include sources of GIS data, spatial data models, GIS data structures, GIS topology, as well as query and feature selection in GIS.

Credits: 2.0

Lec-Rec-Lab: (0-1-2)

Semesters Offered: Fall, Spring

SU 2150 - Fundamentals of Surveying

Introduction to surveying principles as applied to the measurement of distances, directions, and elevations. Topics include taping, leveling, traversing, topographic surveys, construction surveys, U.S. public land surveys, the use of modern instrumentation, and computer applications.

Credits: 4.0

Lec-Rec-Lab: (0-2-6)

Semesters Offered: Fall

SU 2220 - Route and Construction Surveying

Study of the geometry and field stake-out techniques of circular curves, spiral curves, compound curves, reverse curves, equal-tangent vertical curves, and unequal-tangent vertical curves. Other topics include horizontal and vertical alignment design, earthwork quantities and mass diagrams.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Pre-Requisite(s): SU 2150

SU 2260 - Survey Computations

Introduction to the PLSS system and cadastral management software. Utilizing Mathcad software to perform survey related computations for coordinate forms, intersections, resections, conformal transformations and Least Squares adjustment.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Pre-Requisite(s): SU 2150

SU 3110 - Surveying Field Practice

Survey projects from field to finish using current surveying equipment and software. Basic statutes and ethics governing the practice of surveying. Projects cover level networks, horizontal control, design surveys, construction layout, section subdivision, map and report preparation.

Credits: 4.0

Lec-Rec-Lab: (0-2-6)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 2260 and SU 2220

SU 3180 - Boundary Surveying Principles

Interpretation of property descriptions used to establish land boundaries. Resolving conflicts in boundary descriptions as well as conflicts in evidence. Review doctrines pertaining to transferring title, the role of the surveyor in issuing opinions on boundary location in boundary disputes.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 2260

SU 3250 - Geodetic Adjustments Theory

Presents errors in surveying measurements and their effect on computed values. Discusses analysis of measurements and errors based on statistical principles and presents adjustment techniques based on least squares principle.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall, Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): (MA 2320 or MA 2321 or MA 2330) and (MA 2720 or MA 2710 or MA 3710) and MA 3160 and SU 2260

SU 3540 - Geospatial Information Technology with Elements of Field Cartography

Application of GIS technology methods for processing surveying data obtained in the field. Concepts of interoperability and metadata organization are considered. Includes map projection review and 2D and 3D cartographic data visualization.

Credits: 4.0

Lec-Rec-Lab: (0-3-3)

Semesters Offered: Spring

Pre-Requisite(s): MA 3710

SU 3560 - Geospatial Imaging Interpretation

Remote sensing methods applied to interpretation of topographic features from aerial and satellite imagery. Accuracy and applicability of remote sensing tools, imagery domains, operational work flows of remotely sensed imagery in field reconnaissance, map renovation, change detection and various essential applications.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Spring

Restrictions: Permission of department required

Pre-Requisite(s): PH 2200

SU 4003 - GIS Technology Fundamentals

Course provides review of Geographic Information Systems applications and analysis. Includes core concepts such as data acquisition and management, topology, accuracy, metadata, output, quality control, analysis methods, new and traditional software options, web mapping, and GIS implementation/management for research and production.

Credits: 1.0

Lec-Rec-Lab: (1-0-0)

Semesters Offered: On Demand

SU 4010 - Geospatial Concepts, Technologies, and Data

High level review of geospatial data acquisition systems, sensors, and associated processing technologies. Course considers geospatial metadata generation principles, interoperability, and major tools for manipulation with geospatial data. Course may help in transition of non-geospatial majors to geospatial field.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Surveying Engineering

SU 4060 - Geodesy

Concepts of astronomy and geodesy that are relevant to the practice of surveying. Covers theory, field techniques, and computations involved in the determination of true north, an introduction to the figure of the earth and its geometric and physical characteristics, geodetic datums, and coordinate systems.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall, Spring

Restrictions: Must be enrolled in one of the following Major(s): Surveying Engineering; Must be enrolled in one of the following Class(es): Senior

Pre-Requisite(s): SU 3250

SU 4100 - Geodetic Positioning

Introduces the instruments and procedures used in surveying projects that require a high order of accuracy. Discusses some conventional instruments and techniques but the greater emphasis is on GPS techniques.

Credits: 3.0

Lec-Rec-Lab: (0-2-3)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 4060(C)

SU 4140 - Photogrammetry

Basic principles of photogrammetry and its role as a technology for spatial data collection. Use of photogrammetry in the fields of surveying, engineering, and geographic information management will be discussed.

Credits: 3.0

Lec-Rec-Lab: (0-2-3)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 2260

SU 4180 - Land Subdivision Design

Introduces the physical, economic, and social aspects of optimum land use within the framework of state and local regulations of land divisions, condominiums, mobile home parks, and residential subdivisions.

Credits: 3.0

Lec-Rec-Lab: (0-2-1)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): SU 3180 and CMG 3200

SU 4900 - Capstone Design Project

An engineering design project which integrates multiple aspects of previous surveying coursework while working with an industry partner. Includes project description, project planning, field work, office analysis, computer-aided design, final project completion and oral presentation skills.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Fall, Spring

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Surveying Engineering; Must be enrolled in one of the following Class(es): Senior

SU 4996 - Special Topics in Geospatial Technologies

Selected additional topics of interest in Geospatial Technologies based on student and faculty demand and interest. May be a tutorial, seminar, workshop, project, or class study.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Surveying Engineering; Must be enrolled in one of the following Class(es): Senior

SU 4997 - Independent Study in Geospatial Technologies

Independent study of an approved topic under the guidance of a Surveying Engineering faculty member. May be either an academic, design, or research problem/project.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Surveying Engineering; Must be enrolled in one of the following Class(es): Senior

SU 4998 - Undergraduate Research in Geospatial Technologies

An undergraduate research experience in Geospatial Technologies. Under the guidance of a Surveying Engineering faculty member, students work on a selected/approved research problem or work directly with faculty on active research projects/grants. May require more than one semester to complete.

Credits: variable to 6.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following Major(s): Surveying Engineering; Must be enrolled in one of the following Class(es): Senior

SU 4999 - Professional Practice Seminar

A review of all elements of the NCEES Fundamentals of Land Surveying examination, which leads to licensure as a professional land surveyor.

Credits: 1.0; Graded Pass/Fail Only

Lec-Rec-Lab: (0-1-0)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Technology

TE 1020 - Technology Computer Applications

Introductory course intended to develop knowledge of computer modeling techniques such as solid modeling, spreadsheet, word processing, presentation, and project time line software utilized throughout the technology curriculum.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Fall, Summer

TE 2000 - Directed Study in Technology

Students undertake a directed study in an approved technology topic under the guidance of a School of Technology faculty member. The course of study will be academic in nature and is decided upon between the student and the faculty member.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor and department required; Must be enrolled in one of the following College(s): School of Technology; Must be enrolled in one of the following Class(es): Freshman, Sophomore

TE 3600 - Quality Techniques

This course offers an in depth examination of the key elements of quality systems used by organizations. Topics will include cause and effect analysis, loss prevention, process control, vendor management, advanced quality planning and policy analysis.

Credits: 3.0

Lec-Rec-Lab: (0-2-1)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): MA 2720(C)

TE 3956 - Industrial Safety Management

Occupational safety and health standards and codes. Hazard recognition, accident costs, accident prevention, ethics and administration.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

TE 4200 - Leadership in Complex Organizations

This senior level course explores the traditional and emerging models of leadership as they exist in contemporary organizations. Topics will include organizational theory, critical theory, leadership development, and organizational learning.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

TE 4580 - Facilities Planning, Layout and Process Flow

This course examines the methods used to collect and analyze the necessary data in designing an efficient manufacturing facility. Attention will be given to site and equipment selection, layout and flow analysis.

Credits: 3.0

Lec-Rec-Lab: (0-2-2)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Senior

TE 4590 - Production Planning and Control

This course studies the modern methods for the systematic planning and control of operations necessary to produce a product or service.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Senior

TE 4996 - Special Topics in Technology

Selected additional topics of interest in Technology based on student and faculty demand and interest. May be a tutorial, seminar, workshop, project, or class study.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following College(s): School of Technology; Must be enrolled in one of the following Class(es): Senior

TE 4997 - Independent Study in Technology

Independent study of an approved topic under the guidance of a School of Technology faculty member. May be either an academic, design, or research problem/project.

Credits: variable to 3.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following College(s): School of Technology; Must be enrolled in one of the following Class(es): Senior

TE 4998 - Undergraduate Research in Technology

An undergraduate research experience in Technology. Under the guidance of a School of Technology faculty member, students work on a selected/approved research problem or work directly with faculty on active research projects/grants. May require more than one semester to complete.

Credits: variable to 6.0; Repeatable to a Max of 6

Semesters Offered: On Demand

Restrictions: Permission of instructor required; Must be enrolled in one of the following College(s): School of Technology; Must be enrolled in one of the following Class(es): Senior

University Wide**UN 1000 - Frameworks for Success**

An introduction to University life, exploring ways to become a more effective student focusing on personal and professional habits necessary for success. Topics include academic skill development, time management, and university resources.

Credits: 1.0

Lec-Rec-Lab: (0-0-2)

Semesters Offered: Fall, Summer

UN 1001 - Perspectives on Inquiry

Writing-intensive course which engages students in college level inquiry. Students develop fundamental intellectual habits, understand how to integrate various perspectives on knowledge, and begin to learn how to meet the changing needs of a global, technological, diverse, and environmentally sensitive society.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall, Spring, Summer

Restrictions: Must be enrolled in one of the following Class(es): Freshman

UN 1002 - World Cultures

Examines diversity and change around the globe from perspectives of social sciences, humanities, and arts; explores human experience from prehistory to present. Classroom lectures accompanied by films, live performances, and guest speakers. One complete year of a single foreign language plus World Cultures (UN1003, 1-credit-activities) substitutes for World Cultures.

Credits: 4.0

Lec-Rec-Lab: (3-0-3)

Semesters Offered: Fall, Spring, Summer

Restrictions: Must be enrolled in one of the following Class(es): Freshman

UN 1003 - World Cultures Activities

Activities portion of World Cultures. Limited to enrollment by students choosing the modern language option of one full year of a single foreign language to fulfill their World Cultures requirement.

Credits: 1.0

Lec-Rec-Lab: (0-0-2)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Freshman

UN 1010 - Creating Your Success

Introduction to strategies for creating academic, professional and personal success. Emphasis is on determining individual priorities, improving self-management and developing critical thinking skills. Guided journal writing will be used to explore these strategies.

Credits: 1.0; Repeatable to a Max of 3; Graded Pass/Fail Only

Lec-Rec-Lab: (0-0-2)

Semesters Offered: Fall, Spring, Summer

UN 1100 - Foundations of Global Leadership

Seminar course designed for participants in the Pavlis program. Offers an introduction to theories of communication relevant to leadership in a global context and examines the relationships among globalization, diversity, culture, communication, and the practices of effective leadership.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Fall

Restrictions: Permission of instructor required

UN 1200 - Foundations of Environmental Leadership

Seminar course designed for students in the Pavlis program. Builds upon theories of communication covered in UN1100 with particular emphasis on their application to global environmental issues. Examines the role of environmental ethics and sustainability in effective leadership.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Spring
Pre-Requisite(s): UN 1100

UN 1995H - Honors Institute Contract
Credits: 0.0; Graded Pass/Fail Only
Semesters Offered: On Demand

UN 2001 - Revisions: Oral, Written, and Visual Communication

Oral, Written, and Visual Communication. Writing-intensive course which builds on students' previous courses by providing advanced, direct instruction in communication. Students look closely at the communication practices of civic groups and apply what they learn to their own spoken, written, and visual work. Class projects ask students to fit the communications they make to interesting, sometimes difficult, situations and audiences.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Fall, Spring, Summer

Restrictions: Must be enrolled in one of the following Class(es): Freshman, Sophomore

Pre-Requisite(s): UN 1001 and (UN 1002 or UN 1003)

UN 2002 - Institutions

From families to governments, to markets, to our interactions with the natural environment, institutions organize collective human action. Introduces students to the nature and role of institutions in shaping today's world. Specific topics will vary by section, but all sections address a set of core questions and concepts.

Credits: 3.0

Lec-Rec-Lab: (3-0-0)

Semesters Offered: Fall, Spring, Summer

Restrictions: Must be enrolled in one of the following Class(es): Sophomore

UN 2100 - Foundations of Technological Leadership

Seminar course designed for students in the Pavlis program. Builds upon communication and leadership topics covered in UN1200 with an emphasis on technology in a globalized world. Also theorizes and develops skills essential for effective innovation, entrepreneurship, and creativity.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Fall

Pre-Requisite(s): UN 1200

UN 2525 - Career Development Foundations

Students will learn the process of career development and planning, which includes self-assessment, decision-making, job search strategies, and awareness of workplace issues.

Credits: 1.0

Lec-Rec-Lab: (0-1-0)

Semesters Offered: Fall, Spring

Restrictions: May not be enrolled in one of the following Class(es): Freshman

UN 2600 - Fundamentals of Nanoscale Science and Engineering

Team-taught introduction to the fundamentals of nanotechnology, emphasizing the interdisciplinary nature of this field. Modern instrumentation, key scientific foundations, and current and potential applications will be discussed. Real and potential societal implications of nanotechnology will be explored.

Credits: 2.0

Lec-Rec-Lab: (1-1-0)

Semesters Offered: Spring - Offered alternate years beginning with the 2007-2008 academic year

UN 2990 - Special Topics - Interdiscip.

The study of interdisciplinary special topics as specified by section title.

Credits: variable to 6.0; Repeatable to a Max of 97

Semesters Offered: On Demand

Restrictions: Permission of instructor required

UN 2995H - Honors Institute Contract

Credits: 0.0; Graded Pass/Fail Only

Semesters Offered: On Demand

UN 3002 - Undergraduate Cooperative Education Laboratory

Credits may count as free or technical electives based on student's academic department. Requires 2.20 GPA or better, registration with the Office of Cooperative Education, and acceptability by a recognized employer. Transfer students must have completed at least one full-time semester on the MTU campus.

Credits: variable to 2.0; May be repeated

Semesters Offered: Fall, Spring, Summer

Restrictions: Permission of instructor and department required; May not be enrolled in one of the following Level(s): Graduate; Must be enrolled in one of the following Class(es): Sophomore, Junior, Senior

UN 3100 - Foundations of Ethical Leadership

Seminar course designed for participants in the Pavlis program. Builds

upon topics covered in UN2100 with an emphasis on the principles of ethical leadership. Covers topics of ethics in communication, technology, the environment, and economics in today's interconnected, globalizing world.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Fall

Pre-Requisite(s): UN 2100

UN 3200 - Global Technological Leadership

This course, designed for students in the Pavlis program, covers topics of leadership including personality traits, interpersonal skills, leadership styles, teamwork, situational leadership, and decision making. Offers practical experience in project development, communication, and leadership development.

Credits: 3.0

Lec-Rec-Lab: (0-3-0)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): UN 3100

UN 3404 - Cultural Awareness

This course, designed for students in the Pavlis program, allows students to explore the culture of their international experience. Students will gain insight into working with and learning from different cultures to see the world and their leadership roles in new ways.

Credits: 2.0

Lec-Rec-Lab: (0-1-1)

Semesters Offered: Summer

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Co-Requisite(s): UN 3405, UN 3406

Pre-Requisite(s): UN 3200

UN 3405 - Language Fundamentals

This course, designed for students in the Pavlis program, provides an opportunity for students to explore the basic and essential elements of language spoken in the host country using online resources and native speakers to facilitate leadership development abroad.

Credits: 2.0

Lec-Rec-Lab: (0-0-6)

Semesters Offered: Summer

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Co-Requisite(s): UN 3404, UN 3406

Pre-Requisite(s): UN 3200

UN 3406 - Language of Business, Technology, and the Environment

This course, designed for students in the Pavlis program, will allow students to explore 1) business and management culture, 2) engineering & technology tools, tactics, and processes associated with design and development of new products and technological systems, and 3) topics of environmental stewardship associated with the location of their international experience.

Credits: 2.0

Lec-Rec-Lab: (1-0-1)

Semesters Offered: Summer

Restrictions: Must be enrolled in one of the following Class(es): Junior, Senior

Co-Requisite(s): UN 3404, UN 3405

Pre-Requisite(s): UN 3200

UN 3995H - Honors Institute Contract

Credits: 0.0; Graded Pass/Fail Only

Semesters Offered: On Demand

UN 4000 - Remote Sensing Seminar

A seminal series that covers topical issues in remote sensing, ecosystem research, and global change. Required for all students with a minor in remote sensing.

Credits: 1.0; Repeatable to a Max of 2

Lec-Rec-Lab: (0-1-0)

Semesters Offered: Fall, Spring

Restrictions: May not be enrolled in one of the following Class(es): Freshman, Sophomore

UN 4050 - Global Leadership Practicum

Students in the Pavlis program will spend time abroad participating in a variety of leadership experiences including at least one major leadership project. Upon returning, students will spend two weeks on campus writing reports and hosting an on-campus leadership institute.

Credits: 7.0

Lec-Rec-Lab: (0-0-12)

Semesters Offered: Summer

Restrictions: Permission of department required; Must be enrolled in one of the following Class(es): Junior, Senior

Pre-Requisite(s): UN 3404 and UN 3405 and UN 3406

UN 4100 - Leadership Capstone Project I

This course, designed for students in the Pavlis program, is the first in a two part leadership capstone experience. Students engage in discussions

and make oral presentations, outline a senior project report, mentor other students and apply their leadership skills by taking on leadership roles.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Fall

Restrictions: Must be enrolled in one of the following Class(es): Senior

Pre-Requisite(s): UN 4050

UN 4200 - Leadership Capstone Project II

This course, designed for students in the Pavlis program, is the second in a two part leadership capstone experience. Students engage in discussions and make oral presentations, write a senior project report, mentor other students and apply their leadership skills by taking on leadership roles.

Credits: 1.0

Lec-Rec-Lab: (0-0-3)

Semesters Offered: Spring

Restrictions: Must be enrolled in one of the following Class(es): Senior

Pre-Requisite(s): UN 4100

UN 4990 - Special Topics - Interdisciplinary

Study of interdisciplinary special topics as specified by section title.

Credits: variable to 6.0; May be repeated

Semesters Offered: On Demand

Restrictions: Permission of instructor required

UN 4995H - Honors Institute Contract

Credits: 0.0; Graded Pass/Fail Only

Semesters Offered: On Demand

Michigan Technological University
Registrar's Office
1400 Townsend Dr, Houghton, Michigan 49931-1295
Email: registrar@mtu.edu
Phone: (906) 487-2319
Fax: (906) 487-3343
[Webmaster](#)