ITM THEORY AND TECHNOLOGY (ITMT)

ITMT 330
Introduction to Information Systems and the IT Profession
Introduces students to concepts of systems, systems theory and modeling, information systems, and system integration. Examines the steps necessary to analyze a business problem and identify and define the computing and information requirements appropriate to its solution, with a focus on how to design, implement, and evaluate a technology-based system to meet desired needs. Students learn to analyze the local and global impact of computing on individuals, organizations, and society. Leads students to recognize of the need for continuing professional development, and imparts an understanding of professional, ethical, legal, security and social issues and responsibilities in information technology. Students write and present, building their ability to communicate effectively with a range of audiences, and using standard planning methodologies design an information system to meet the information needs of a small business. This course meets the university Introduction to the Profession Core Course requirement.
Prerequisite(s): (ITM 301 and ITM 311) or ITM 312 or ITM 313 or CS 116 or CS 201
Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 430
System Integration
In this capstone course, students will identify, gather, analyze, and write requirements based on user needs and will then design, construct, integrate, and implement an information system as a solution to a business problem. Students will document integration requirements using business process models and will learn and apply key systems integration architecture, methodologies, and technologies using industry best practices. User needs and user centered design will be applied in the selection, creation, evaluation, and administration of the resulting system. The system design process will take into account professional, ethical, legal, security, and social issues and responsibilities and stress the local and global impact of computing on individuals, organizations, and society. Discussion will also cover the need to engage in continuing professional development.
Prerequisite(s): ITMD 411 and ITMD 321 and ITMM 471 and ITMO 356 and ITMD 362 and ITMO 340
Lecture: 2 **Lab:** 2 **Credits:** 3
Satisfies: Communications (C), Ethics (E)

ITMT 491
Undergraduate Research
Undergraduate research. Written consent of instructor is required.
Credit: Variable

ITMT 492
Introduction to Smart Technologies
This course covers reconfigurable intelligent devices programmed with modern high level languages focusing on design and integration to modern environments. The course will also cover the topic and deployment of wireless sensor networks and the use of rapid prototyping for commercial application. Students will discover hardware, software and firmware design trade-offs as well as best practices in current embedded systems development. A final project will integrate course topics into a system using an embeddable single-board microcontroller.
Prerequisite(s): ITM 311 or ITM 312
Lecture: 2 **Lab:** 2 **Credits:** 3

ITMT 495
Topics in Information Technology
This course will cover a particular topic varying from semester to semester in which there is particular student or staff interest.
Credit: Variable

ITMT 514
Enterprise Application Architecture
This course examines current enterprise application architectures from the perspective of senior technology planners and managers. Topics such as models and patterns of enterprise application architecture, application virtualization, cloud application architectures, integration of custom application infrastructure with major vendor products, and full systems integration issues will be addressed.
Prerequisite(s): ITMD 510 with min. grade of C
Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 531
Object-Oriented System Analysis, Modeling, and Design
This course will cover object oriented approaches to system analysis, data modeling and design that combine both process and data views of systems. Emphasis is given to practical problems and the techniques needed to create solutions in systems design.
Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 533
Operating System Design Implementation
This course introduces students to the fundamental principles of operating systems design and gives them hands-on experience with real operating systems installation, design, and implementation. The students apply what they learn about operation systems design to practical implementation by modifying and extending the MINIX Operating System. MS Windows and LINUX are briefly discussed as case studies.
Prerequisite(s): ITMD 512 with min. grade of C
Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 535

Data Center Architecture

The course deals with building integrated data center information infrastructures, including facility, hardware, software, and network components as solutions to particular enterprise information management needs and requirements. Students will learn critical elements of modern data center design including physical plant construction; network infrastructure; data storage technologies; power provisioning and conditioning; environmental controls and HVAC; system and physical security; modular component use; and planning for growth.

Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 537

Instructional Technologies

In this course students will create, assess, and deploy current technologies used for K-College instruction and corporate training environments. Topics covered include developing training materials, courses, individualized instruction, websites, multimedia projects, and on-line instruction in educational settings. focus will be given to modern programming environments and models for developing instructional materials.

Lecture: 3 **Lab:** 0 **Credits:** 3

ITMT 591

Independent Study and Research

Research and Thesis for Masters' degrees. Instructor permission required.

Credit: Variable

ITMT 593

Embedded Systems

This course introduces embedded systems concepts and technology, illustrates the trade-offs which occur as part of embedded systems design, as well as providing practical applications of embedded systems technology. Particular emphasis is given to embedded systems hardware, software and development tools. The course labs include hands-on development of several stand-alone embedded applications using development tools such as compilers, simulators and evaluation boards. Prerequisite: ITM 301 or equivalent computer architecture course; C/C++ programming experience.

Lecture: 2 **Lab:** 2 **Credits:** 3

ITMT 594

Special Projects in Information Technology

Special projects.

Credit: Variable

ITMT 595

Topics in Information Technology

This course will cover a particular topic, varying from semester to semester, in which there is particular student or staff interest.

Credit: Variable

ITMT 596

Graduate Honors Studies in Information Technology

Graduate honors project, thesis or whitepaper. Prerequisites: Graduate honors status and consent of the instructor.

Credit: Variable

ITMT 597

Special Problems in Information Technology

Independent study and project.

Credit: Variable