**MSIST Curriculum Overview**

The MS-Information Systems Technology program curriculum offers an innovative mix of information technology management, applied technology courses, and specialized electives. All courses are 3.0 credits.

**Foundation Courses**

**ISTM 3119 Introduction to Programming**

Computer programs play a significant role in business operations and organizational decision making. It is important for future IT professionals to be familiar with programming language and basic programming concepts in order to plan, analyze, design, test and maintain business applications. This course teaches students how to conduct data analysis using the Python programming language.

**ISTM 4121 Expert Database Systems**

Theory, architecture, and implementation of database management systems in corporate and organization information systems. Fundamental concepts of database management and processing. Hands-on experience with database management packages.

**ISTM 6290 Python Program/Database Applications**

This course has two primary objectives. The first is to teach students the programming techniques needed to develop small applications using Python and SQL. The second is to introduce students to basic concepts in both programming and database to provide a sufficient foundation for further coursework, independent studies, or self-motivated learning in related technologies or more advanced applications.

**Core Courses**

**ISTM 6201 Information Systems Development and Applications**

The information systems life cycle evaluated in terms of technologies, impact, and management. Structured and object-oriented analysis, prototyping, software reuse, testing, life-cycle costs, software development environments, and organizational and behavioral aspects of development projects.

**ISTM 6202 Relational Databases**

Introduces the theory of relational databases and commences an in-depth discussion of Relational database theory and design at the conceptual, logical, and physical levels. Structured query language (SQL) is covered in depth. *Prerequisite:* ISTM 4121 or 6290

**ISTM 6203 Telecommunications and Enterprise Networks**

The technologies and applications of telecommunication systems in the commercial and public sectors with emphasis on wireless, mobile, and Internet communication protocols. Systems technology and configurations to support business application requirements are evaluated. Functional characteristics of network technologies.

**ISTM 6204 Information Technology Project Management**

Project and program management practices with an emphasis on information technology projects. The basic tools of project management: work breakdown structure, cost, schedule and performance goal setting, and risk analysis.

**ISTM 6205 Internet Computing**

Concepts, architectures, frameworks, and technology of web application development. The Internet as hardware and software architecture for creating business applications. Web and web application servers, system development methods and techniques, client-side and server-side scripting. *Prerequisite:* ISTM 3119 or 6290

**ISTM 6206 Information Systems Security**

Comprehensive examination of computer security issues from the design, management, and business information system ownership perspectives. System security concepts, methods, and policies from the design and planning stages to multi-level system implementation. Design of risk assessment strategies to achieve security goals.

**ISTM 6210 Integrated Information Systems Capstone**

*Capstone project course in which students apply conceptual and technical knowledge in analyzing, planning, and designing an on-line information system. Culminates with system proposal/design presentations. Restricted to eligible students in their final semester. Prerequisite: ISTM 6201– ISTM 6209*

**Elective Courses**

**ISTM 6207 Information Resources Management**

Information resources management strategically assesses and exploits information technology assets for competitive advantage. The CIO role in information resources management, planning, security, information integration, enterprise model development, and data administration.

**ISTM 6211 Data Warehousing and Online Analytical Processing**

Introduction to the theory of data warehousing, dimensional data modeling, and online analytical processing (OLAP) through case studies, technology, and a design project. *Prerequisite:* ISTM 6202.

**ISTM 6213 Enterprise Web and Database Applications**

Enterprise applications concepts, architecture, and technologies for emerging technologies and IT frameworks. The Internet as a major resource for globally distributed applications using grid and utility computing. Web servers, development methods and techniques, data stores for massively distributed applications, and client/server side scripting. *Prerequisites:* ISTM 6202, ISTM 6205.

**ISTM 6215 Human–Computer Interaction**
Human–computer interaction as an interdisciplinary endeavor integrating theories and methodologies from computer science, cognitive psychology, design, and many other areas. Theory and practice in interface specification design and evaluation, and research.

**ISTM 6222 IS/IT Strategy and Implementation**
The development and implementation of information systems and technology strategies designed to align with and maximize business strategy applications and approaches in a challenging and increasingly global business environment.

**ISTM 6223 Technology Entrepreneurship**
Case studies on the innovation–entrepreneurship processes used to launch and build new ventures based on information technology and on technology more broadly. Organizing for innovation, raising venture capital, managing the small technology-based venture, marketing technology products and services, intellectual property considerations, and new venture proposal development.

**ISTM 6224 Management of Technology and Innovation**
Business, technological, economic, and political factors that influence the development and deployment of new technology products, processes, and services. Concepts and practices useful in managing technology and enhancing corporate innovation, corporate organizational alternatives, new approaches, and sources of competitive advantages.

**ISTM 6233 Emerging Technologies**
Case studies on the innovation–entrepreneurship processes used to launch and build new ventures based on information technology and on technology more broadly. Organizing for innovation, raising venture capital, managing the small technology-based venture, marketing technology products and services, intellectual property considerations, and new venture proposal development.

**ISTM 6234 New Venture Financing**
Fundamentals and practice of due diligence and screening of early-stage investment opportunities. Same as FINA 6234.

**ISTM 6239 Seminar: Technology Commercialization**
Capstone course integrating the field of management of science, technology, and innovation. Commercialization of technology in the private sector and the impact on competitiveness. Implementation of technology in the public sector. Technology development, from new product concept to utilization. Prerequisite: ISTM 6224 or MBAD 6253, or ISTM 6233, or permission of instructor.

**ISTM 6290 Cloud Computing Technology & Management**

This course explores the technology, management, and economic aspects associated with cloud computing. Students will examine the impact of Virtualization, Big Data systems, and other technologies on industry and business economies with a focus upon rapid provisioning, metered service, and trade-offs between operational and capital expenditures. Students will receive hands on experience with Virtualization technologies and available Cloud Service Offerings (CSOs). Students will study the Cloud Application Lifecycle (CAL), including development-to-operations (DevOps) and Security within the cloud. Student's will exercise learned skills to quickly program and provision working enterprise scale cloud solutions employing an array of National Institute of Standards and Technology (NIST) service and deployment models.

**ISTM 6290/6209 Web and Social Analytics**

This course introduces the concepts, techniques, and tools of collecting, analyzing, and reporting digital data on how users interface with an organization through the web and social media.

It will also cover general concepts and techniques in the Business Intelligence (BI) field and the internet and mobile technologies that provide the vast sources of user date that describe or imply their behaviors, experiences, and attitudes. The success of a website can be tracked through quantifiable Key Performance Indicators (KPIs). Today, Web Analytics technology uses a variety of methods to monitor website, social media, and social network usage. This course covers most current Web and Social Analytics techniques, mechanisms, and website optimization issues. Analyzing these web and social media data serves the purposes of strengthening customer relationship management, improving online marketing, and increasing the bottom line.

**ISTM 6298 Directed Readings and Research**