

The Master of Science (MS) in Information Systems program is designed to prepare graduates for leadership roles in the planning, design, development, deployment, and management of information systems. This program is grounded in accepted business and technical standards with a focus on theory and methods of building effective information systems. The MS IS program begins with a series of core courses and extends through topics specifically related to aligning information systems to meet enterprise needs.

For gainful employment disclosures about this program, visit <http://west.edu/etc/west/gainful-employment/msis/Gedt.html>

## Program Learning Outcomes

1. Evaluate the role of the information systems professional in an information-driven society.
2. Create appropriate solutions to management issues within an industry that is continually redesigned.
3. Organize relationships that meet the enterprise's mission, objectives, and goals effectively.
4. Develop and implement new and innovative technologies to meet the expanding demands and global opportunities.
5. Measure the effectiveness of diverse technologies meeting individual and organizational needs.
6. Appraise the value of technology to the enterprise within the local, national, and global context.
7. Evaluate the role of malicious technology in the current organizational environment.

## Required Course of Study

*MS Information Systems Core - 24 credits*

*Major Requirements - 15 credits*

*Credits Required for Degree: 39*

## MS Information Systems Core Course Descriptions

*MS Information Systems Core – 24 credits*

### CUL 623 Global Communication for Professionals

This course provides an overview of critical topics related to professional communication in the global economy and prepares students to develop strategies for successful intercultural exchanges. Students evaluate verbal and non-verbal communication models as they are manifested across cultures and create research-based analyses of cross-cultural scenarios. Course content addresses the application of intercultural communication skills to organizational structures and decision-making, negotiations, and ethics.

### IT 550 Foundations of Information Systems

This course is designed to provide essential knowledge required throughout the program beginning with basic concepts of data, information, and knowledge; common development methodologies; and the phases of information systems deployment. The course also covers the types of programming languages and basic data structures, and concludes with an introduction to program design and logic, and programmatic control structures.

### IT 620 Information Resource Management

This course includes the techniques and methodology of managing data, information, and knowledge at all levels of an organization. Students describe the business environment within the structures of the information age and how information management informs organizational strategies. Themes include information systems planning, systems development, outsourcing, and leadership.

### IT 630 Technology Project Management

This course highlights the importance of project management skills in the delivery of complex information technology projects. Students learn the process of project management at all levels, from defining requirements to successfully closing out projects. Themes include time and cost management, quality management, human resources and communications management, and risk management.

### IT 638 Economics of Information Systems and Proposal Management\*

This course offers students the opportunity to develop the skills needed to manage IT within an organization, and acquire resources from prospective IT providers.

Students focus on the planning and implementation of information systems using internal and external human resources for determining value, benefits, and improved performance at the functional level. Topics include strategic planning, organizational economic determination, project planning, and interpretation of requirements, knowledge management, resource management, and IT management for sound decision-making from an organizational and global perspective.

\*Prerequisite: IT 550 or equivalent

### **IT 645 Internet Business Strategy**

This course permits the student to explore how new technology enables a competitive advantage by transforming relationships with customers, suppliers, and business partners. Students demonstrate the transition from current business approaches to e-business strategies with the preparation of an e-business plan. Subjects include e-commerce, supply chain management (SCM), Enterprise Application Integration (EAI), and customer relationship management (CRM).

### **IT 654 Integrated Data Resource Management\***

This course permits the student to analyze the organizational needs, technology, and management necessary to store and manipulate data with an emphasis on databases in client/server, distributed, and service-oriented environments. Students compare common database architectures. Topics include “big data” in the context of Internet-based, object-oriented, and enterprise databases and the query languages and database management systems (DBMS) that support them.

\*Prerequisite: IT 550 or equivalent

### **RES 600 Graduate Research Methods**

This course provides graduate students with the tools necessary for completing the in-depth research, reading, writing, and speaking activities central to all coursework at West. Students advance their studies of research design and methodology and apply these skills to their programs of study. Subjects include primary and secondary research, descriptive and inferential statistics, regression and correlation analysis, and research presentation.

## **Major Course Descriptions**

*Major Requirements – 15 credits*

### **IT 644 Telecommunication Systems**

This course provides a local-to-global perspective on telecommunications technologies and standards. Students create a business/technology network-oriented plan to support a particular organizational strategy. Themes include wireless, broadband, and optical networking, mobile technology, and competing services.

### **IT 651 Software Design Methodology\***

This programming language-independent course permits the student to explore formal methods and principles of modern software engineering. Students design medium-sized software projects from specifications while applying key principles to ensure the software is accurate, efficient, modular, reusable, structured, and well documented. Topics include software tools, object-oriented design, and project management.

\*Prerequisite: IT 309 and IT 654

### **IT 661 Security Systems**

This course concentrates on how security can be integrated into systems, applications, and communications. Students learn the importance of planning and implementing defenses that meet the various levels of confidentiality and security required for business data. Subjects include cryptography, database and data mining security, privacy in computing, and legal and ethical issues in computer security.

### **IT 672 Integrated Business Intelligence and Data Analytics\***

This course offers students insight to concepts and processes associated with business intelligence (BI). Particular emphasis is placed on an issue confronting all types of organizations; the transformation of growing amounts of data into information that will permit enterprise decision-makers to drive changes that attain business value in a timely manner. This course is designed for advanced graduate students and includes current topics in BI related to “big data.”

\*Prerequisite: IT 654



**IT 680 Intrusion Detection and Analysis: Security Beyond  
the Firewall\***

This course examines enterprise security needs and suggests necessary security procedures. Students explore the use of intrusion detection system tools to recognize normal vs. abnormal network behavior. Topics include Internet Protocol, network traffic analysis, Internet attacks, network intelligence procedures, and future trends in network security and intrusion detection.

\*Prerequisite: IT 661