

ISYS • INFORMATION SYSTEMS

ISYS 150 • Applied Math for Information Systems 3 Credits

Introduction to mathematical concepts that are frequently used in computer science and information systems. Students analyze and solve mathematical problems related to information systems through the application of logic and critical thinking skills.

ISYS 200 • Introduction to Information Systems 3 Credits

This course provides students with an overview of computer information systems including computer hardware, software, networking, programming, databases, the Internet, security, systems analysis, ethics, and problem solving using business applications.

ISYS 210 • Hardware and Software 3 Credits

Knowledge and skills necessary for computer configuration, maintenance, repair, and administration. The course investigates hardware and software installation, systematic troubleshooting, and integration of peripherals. Students explore methodologies for installing system enhancements and upgrades.

ISYS 220 • Object-Oriented Programming 3 Credits

This course provides students with the knowledge and skills necessary to design, code, and test computer applications. The course focuses on learning to design and write syntactically and logically correct code using an industry-relevant programming language and integrated development tools to develop business applications. Topics include object-oriented programming concepts such as classes, objects, methods, interfaces, packages, inheritance, encapsulation, and polymorphism.

ISYS 230 • Introduction to Systems Analysis 3 Credits

Introduction to systems analysis and design using case diagrams, domain models, interaction diagrams, and design class diagrams. Coursework focuses on understanding the system development life cycle and its role in systems analysis.

ISYS 310 • Server Management 3 Credits

This course introduces students to Microsoft Windows Server and enterprise networks. Students learn an overview of the Windows environment, installing and administering servers, domain management, and networking. Emphasis is placed on managing a Windows network, setting up user accounts and user access, and managing resources.

ISYS 320 • Business Communication Systems 3 Credits

This course provides students with a survey of business data communications systems, including the features, operations, and limitations of a variety of communications and network systems. Topics covered include: fundamentals of digital communications, telecommunications systems, wired and wireless media, the Internet, and communication systems security. Students gain practical knowledge and skills for interacting with and administering such systems.

ISYS 330 • Network Administration 3 Credits

This course is an introduction to basic concepts in the application, design, and implementation of computer and telecommunication networks. It includes an overview of various network topics including network architecture and protocols, network management, routing, security, hardware, and basic programming principles. Students analyze common problems in network implementation, maintenance, and repair and management of network systems.

ISYS 340 • Database Design and Administration 3 Credits

Database design and administration are foundational components of all information systems. This course equips students to design and administer relational databases, emphasizing such topics as functional analysis, data modeling, conceptual and physical design, normalization, database security, and permission models. Students also develop a basic understanding of SQL and its use in querying and managing databases.

ISYS 350 • Ethical Hacking 3 Credits

Exploration of the hacker mindset and use of various hacker tools. Due to today's rapidly changing security landscape, by ethically applying hacker tools and techniques, students propose practical information technology defenses for the purpose of safeguarding and protecting legitimate resources.

ISYS 370 • Principles of Digital Forensics 3 Credits

Introduction to the application of forensic science principles including topics from the legal, forensic, and information technology fields. Students explore practices of collecting, preserving, examining, and presenting digital evidence.

ISYS 380 • Information Systems Management 3 Credits

This course provides an introduction to the functions of information systems and how systems aid firms on creating value while maximizing efficiency and increasing competitiveness. Students evaluate systems design, database management, networking communications, security, privacy, policy, legal and ethics issues associated with technology.

ISYS 381 • Management for Information Systems Professionals 3 Credits

This course provides an introduction to the functions of information systems and how systems aid firms on creating value while maximizing efficiency and increasing competitiveness. Students evaluate systems design, database management, networking communications, security, privacy, policy, legal and ethics issues associated with technology. Intended for Information Systems students.

ISYS 400 • Web Development 3 Credits

This course explores website development methods, principles, concepts, standards, and programming applications (e.g., PHP, javascript) in response to business needs. Students gain practical web development, implementation, maintenance, and analysis skills, in order to apply them to a real world web-based solution.

ISYS 410 • Operating Systems Analysis and Design 3 Credits

Basic functions of modern operating systems including installation, configuration, administration, use, and analysis of leading operating systems. Students develop practical skills, including the use of command language scripting, file systems, security, and user rights.

ISYS 420 • Enterprise Architecture 3 Credits

This course introduces students to enterprise architecture, the system for relating business needs to IT structures, tools, guiding principles, and software development projects. Students determine appropriate enterprise architecture models in response to a variety of business information needs, making recommendations for business processes, information, applications, and technology in order to reduce costs while improving performance, agility, and alignment of information systems to business goals.

ISYS 440 • Data Analysis and Warehousing**3 Credits**

Data analysis for business intelligence and data warehousing applications. Students examine the specific data storage, retrieval, and analysis challenges introduced by big data, and how to overcome these challenges. Particular focus is given to the development of efficient data storage and retrieval methods designed for large datasets.

Prerequisite: ISYS 340.

ISYS 450 • Mobile Applications and Computing in Business**3 Credits**

Concepts, trends, and roles of mobile computing in business. Students examine usability, platform transferability, and ease of deployment. The course exposes students to development tools for mobile applications. Coursework emphasizes mobile development platform, frameworks, and tools for designing, constructing, and testing mobile applications.

ISYS 460 • Data Analytics and Business Intelligence**3 Credits**

Examination of data analytics and business intelligence technologies and how they inform decision making across a variety of business sectors. Students analyze how these tools provide business leaders with the information they need to shape business strategies, corporate policies, and performance optimization. Students focus on business intelligence concepts, tools, and applications, and the use of data warehousing for business reporting and online analytical processing, for creating visualizations and dashboards, and for business performance management and descriptive analytics.

Prerequisite: ISYS 340.

ISYS 465 • Business Information Systems Ethics**3 Credits**

Exploration of ethical issues related to business information systems, including information privacy, intellectual property rights, malicious technologies, workplace access to inappropriate content, and ethical codes of conduct. Students are presented with ethical theory and decision-making models to help them determine appropriate responses to ethical issues.

ISYS 470 • Information Security and Compliance**3 Credits**

Introduction to the basics of information security in the workplace with an emphasis on the role of compliance with regulatory bodies. Students explore how information technology assets are protected to meet the growing demand for information security and compliance.

ISYS 480 • Advanced Data Management**3 Credits**

Information and skills needed for understanding business information needs, practicing data cleaning methods, and formulating robust algorithms for analyzing data. Students explore methods for optimizing data structures, indices, queries, and stored procedures for rapid data retrieval.

Prerequisite: ISYS 340.

ISYS 485 • Data Modeling and Architecture**3 Credits**

Examination of various data modeling and architecture options available to database administrators. Students will identify the best options for particular business information needs, taking into consideration complex factors such as performance, scalability, adaptability and database platforms.

ISYS 490 • Information Systems Capstone**3 Credits**

Cumulative information systems project. Students apply business and information systems knowledge and skills acquired in the major and concentration courses to a real-world information systems project. The capstone project includes an information systems needs analysis, research, design of a solution, and presentation of a proposal.

Prerequisites: BUSN 395, ISYS 230, ISYS 310, ISYS 320, ISYS 330, ISYS 340, ISYS 380, ISYS 400, ISYS 410, ISYS 420, ISYS 440, and ISYS 450; or assistant dean permission.

ISYS 495 • Enterprise Risk Management**3 Credits**

Application of risk management principles to protect the organization's information security assets. Students acquire the skills necessary to identify and analyze information security risk, develop risk management processes and remediation plans, and explore models used in information security risk management practice.