Information Systems Department (IS)

College of Business Administration
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www.uwlax.edu/information-systems (http://www.uwlax.edu/information-systems/)

The Information Systems Department offers two majors: **information systems** and **business analytics**. In addition, the IS department offers minors in both information systems and business analytics. All programs prepare students to apply information systems to improve business performance.

Information systems majors: Discover how to improve business processes where people, information and technology come together.

Information systems (IS) involves the planning, analysis, design, and implementation of information systems. Students develop and use computer-based information systems in business environments in preparation for careers in information technology-related areas. In the IS programs at UWL, students learn how to plan, analyze, design, and implement computer-based information systems, such as computer networks and database applications. Students gain in-depth knowledge of IS concepts and applications, learn how to analyze business data and operations to create innovative solutions and gain management skills. Businesses worldwide depend heavily on advanced information systems for managing information and business operations competitively. This calls for IS professionals in careers such as business/systems analyst, business analytics, web developer, information specialist, applications software engineer, security specialist, project manager, network analyst, and database administrator. These are just a few of the prestigious and well-paid positions available to IS program graduates.

Business analytics majors: Succeed in a data-driven world by developing solutions to improve business performance.

Business analytics (BA) involves the collecting, storing and analyzing of data to shape and make business decisions. The BA programs feature a multi-disciplinary curriculum that focuses on developing new insights and understanding of business performance based on data and statistical methods. The undergraduate business analytics major will prepare students to succeed in a data-driven world, providing exposure to software platforms and techniques used to store, transform, manipulate, analyze and interpret small and large sets of data. BA is a growing field of study that can lead to a variety of career paths and opportunities within a range of businesses and organizations. Operational research analysts, market research analysts and management analysts are positions in high demand, and often offer salaries far above the national median.

Why minor in information systems? Learn how to apply the benefits of technology.

Can you think of a future career that will not use technology in some way? An **IS minor i**s a great way for students to enhance and complement their major with technology skills, business analytics, and knowledge that will make them more valuable in their chosen major field. An IS minor is a great way to make yourself more attractive to potential employers and prepare for a career that will include the use of IS.

Why minor in business analytics? Make an impact in today's data-driven business world.

BA is the ability to use statistics, quantitative analysis, and information modeling to shape and make business decisions. BA is a growing field of study that can lead to a variety of career paths and opportunities within a vast range of businesses and organizations. The **BA minor** provides students with introductory level business analytics knowledge and intermediate level skills development in technology and information systems needed to produce, manage, and apply the results for business decision making. The BA minor is a great complement to many areas of study.

2023-24 Faculty/Staff

The following is the department's faculty and staff as of the publication date of this catalog. This list will not be updated again until the next catalog is published in July.

Professor

Peter Haried (Department Chair)

Assistant Professor

Ye (Hannah) Han

Botong Xue

Associate Teaching Professor

David Annino

Assistant Teaching Professor

Nicholas Breidel

Administrative Support

Maureen Spencer

Majors

- Business analytics major - BS (http://catalog.uwlax.edu/undergraduate/informationsystems/businessanalytics/)
- Information systems major - BS (http://catalog.uwlax.edu/undergraduate/informationsystems/informationsystems/)

Minors

- Business analytics minor (http://catalog.uwlax.edu/undergraduate/informationsystems/businessanalyticsminor/)
- Information systems minor (http://catalog.uwlax.edu/undergraduate/informationsystems/informationsystemsminor/)

Health Information Management and Technology Courses

HIMT 301 Cr.3
Digital Literacy in Healthcare
This course provides an overview of medical clinical workflow with emphasis on inter-professional electronic documentation and functionalities of the electronic health record (EHR). Through hands-on experience, this course advances the students' understanding of the electronic health record, health IT policies, data and database management systems in support of the EHR. Consent of department. Offered Fall, Spring.

HIMT 310 Cr.3
Healthcare Systems and Organizations
This course provides an overview of how healthcare and public health are organized and how their services are delivered in the United States. Topics to be covered include public policy (including U.S. health reform initiatives); organization of healthcare systems; components and operation of healthcare organizations including e-health delivery; professional roles and accreditation; legal and regulatory issues, including licensure requirements. Consent of department. Offered Fall, Spring.

HIMT 320 Cr.3
Survey of Information Technology in Healthcare
In this course essential information technologies in healthcare (HITs) will be surveyed. Many important healthcare information systems (HISs) are built upon three categories of HITs: data processing technologies, information reporting technologies, and decision supporting technologies. Specific subjects pertaining to these technologies will be identified and introduced. Consent of department. Offered Fall, Spring.

HIMT 330 Cr.3
Healthcare I: Terminology and Body Systems
This course will examine specific terminology and vocabulary used by healthcare providers and support staff. The focus of this course is on medical terminology which covers human anatomy and physiology, body systems, and diagnoses and procedures. The structure of medical terms will be examined - such as prefixes, suffixes, roots, and combined forms. Topics will also include healthcare taxonomies and nomenclatures (ICD-9-CM, ICD-10, etc.). Prerequisite: UW Colleges BIO 101 Concepts of Biology or equivalent. Consent of department. Offered Fall, Spring.

HIMT 340 Cr.3
Ethical Issues, Security Management and Compliance
This course introduces three broad subjects: 1) evidence-based medical ethics pertaining to healthcare information management; 2) framework of healthcare information security management including security principles, policies and procedures, security management models, risk assessment, and protection mechanisms; and 3) healthcare regulations and compliance with focuses on the legislative systems, policies, and legal environment of healthcare in the US and the existing health information laws, regulations and standards. Also addressed are the elements and development of compliance programs. Prerequisite: Students cannot earn credit in both HIMT 340 and IS 340. Consent of department. Offered Fall, Spring.

HIMT 345 Cr.3
Programming for HIMT Professionals
Fundamental concepts of programming using a contemporary data analysis language. Topics include variables, conditional execution, functions and methods, iteration, strings, files, and data structures. Applications will be taken from the Healthcare Information Systems. Prerequisite: HIMT 300 or concurrent enrollment. Consent of department. Offered Fall, Spring.

HIMT 350 Cr.3
Statistics for Healthcare
This is an introductory course in statistical methods for the health sciences. The course will emphasize the principles of statistical reasoning, underlying assumptions, hypothesis testing, and careful interpretation of results. Some topics covered: major study designs, descriptive statistics, graphical displays of data, probability, confidence intervals and tests for means, differences of means, sample size and power, differences of proportions, chi-square tests for categorical variables, regression, multiple regression, and non-parametric statistics. Prerequisite: UW Colleges MAT 105 Introduction to College Algebra or equivalent. Consent of department. Offered Fall, Spring.

HIMT 355 Cr.3
Principles of Management for HIMT Professionals
This course provides an overview of basic principles involved in management and communication. Topics include basic management principles, communication skills, interpersonal communication competence, negotiation technique, team/consensus building, professional development, and problem solving/decision-making processes. Consent of department. Offered Fall, Spring.

HIMT 360 Cr.3
Healthcare II: Survey of Disease and Treatments
This course further investigates the topics covered in HIMT 330 Healthcare I. On the basis of each body system, the course will further expand into the topics of human disease, human health issues, and classification of disease/health issues, including diagnostics, treatment, and clinical procedures that are currently in practice. In addition, the course will incorporate pharmacotherapeutic concepts (drugs and therapies to treat/prevent/control human disease/health issues), investigating the variety of drugs used for disease treatment for each body system. This will include the current biologicals that are used for treatment. Topics will include how the drugs and biological work, their limitations, and the current diversity of available drugs and biologicals. Prerequisite: HIMT 330. Consent of department. Offered Fall, Spring.

HIMT 365 Cr.3
Healthcare Economics
Applications of microeconomic theory to analyze the behavior or health and healthcare markets. Topics will include: supply and demand of healthcare services, private health insurance markets, government provision of healthcare services and health insurance, and healthcare policy. Consent of department. Offered Fall, Spring.

HIMT 370 Cr.3
Healthcare Systems: Analysis and Design
This is the first course in a two-course sequence that addresses methods and techniques of healthcare information system (IS) analysis and design as performed within the system development life cycle. Included will be the definition of the problem, fact gathering, analysis, logical design, selection and evaluation of alternative healthcare information systems solutions from the point of view of the health provider and user. The course focuses on the problem solving process that leads to the development of logical IS solutions to applied healthcare programs. Prerequisite: HIMT 300. Students cannot earn credit in both HIMT 370 and IS 370. Consent of department. Offered Fall, Spring.

HIMT 375 Cr.3
Database Structures and Management Systems
Analyze and design databases to support computer-based information systems. Develop and implement relational database management systems using SQL. Topics include: data modeling techniques such as entity-relationship modeling, extended entity-relationship modeling, database constraints, database normalization techniques, and basic and advanced features of database query language SQL, etc. Prerequisite: HIMT 345. Consent of department. Offered Fall, Spring.

HIMT 380 Cr.3
Healthcare Billing, Coding, and Reimbursement
This course examines the coding and reimbursement connection; topics include managed care plans, prospective payment systems, Medicare-Medicaid reimbursement, Resource-Based Relative Value Scale, case mix management, and revenue cycle management. Prerequisite: HIMT 330; HIMT 360. Consent of department. Offered Fall, Spring.

HIMT 400 Cr.3
Healthcare Information and Technology: Data
This course explores the sources and data contents of healthcare information as well as the proper presentation of it for different usage levels. Topics addressed include: (1) data structure and use of health information (individual, comparative and aggregate), (2) type and content of health record, (3) data quality assessment, (4) secondary data sources, (5) healthcare data sets, (6) health information archival systems, and (7) National Healthcare Information Infrastructure (NHII). The course will also cover topics in bioinformatics. Prerequisite: HIMT 360. Consent of department. Offered Fall, Spring.

HIMT 410 Cr.3
Healthcare Systems: Implementation and Integration
Covers the back-end stages of healthcare systems development life cycle through the procurement route: development of technical design specifications, procurement procedures (RFP, RFQ, vendor evaluation and selection, and contracting), systems configuration and integration, installation, conversion, operation, and maintenance. Pre-installation testing and post-conversion auditing and monitoring will be emphasized to address the upcoming requirements of federal certification of EHR systems. Prerequisite: HIMT 300; HIMT 370. Consent of department. Offered Fall, Spring.

HIMT 415 Cr.3
Human Resource Management in Healthcare
This course examines the role of HIM professional in managing human resources to facilitate staff recruitment, retention, and supervision. Consent of department. Offered Fall, Spring.

HIMT 420 Cr.3
Healthcare Systems: Project Management
This course addresses the phenomenal impact information system (IS) projects have had on healthcare delivery. Students learn how IS healthcare projects affect organizations, doctors, patients, and chronic-illness treatments, as well as individuals interested in managing their own healthcare. Concepts and tools for IS healthcare project management, process reengineering and work redesign are introduced. The purpose of this course is to expose students to IS project management activities in healthcare settings. Topics covered include recent IS healthcare project trends, budgeting, scheduling, resource management, scope, risk analysis, and deployment controls. The genesis of healthcare project management is covered using specific cases and examples. Consent of department. Offered Fall, Spring.

HIMT 425 Cr.3
Data Warehousing and Mining
Examine the concept of the data warehouse and its effectiveness in supporting strategic decision making. Address the process of creating data warehouse/data-mart solutions from the identification of the enterprise informational and analytical needs to producing business intelligence by extracting information from the data warehouse by using data mining methods and models. Prerequisite: HIMT 375. Consent of department. Offered Fall, Spring.

HIMT 430 Cr.3
Quality Assessment and Improvement
This course examines the quality assessment and quality improvement cycle (plan, do, check, act) and the role of the HIT/HIM professional in the process. Tolls used in quality and risk management processes will be examined. Prerequisite: HIMT 350. Consent of department. Offered Fall, Spring.

HIMT 435 Cr.3
Data Communications and Computer Networks in Healthcare
This course provides fundamentals of data communications and networking techniques, and examines the linkage of information technology strategies and technological solutions enabling effective communication within and between healthcare organizations. Major topics include fundamental concepts of data communications and applications, network communication devices, basic technologies of the Local Area Network, Wireless Local Area Network, Wide Area Network, Internet and the Web, the OSI stack, healthcare information system standards, and the HIE, RHIN, and the NHIN. Prerequisite: HIMT 300. Consent of department. Offered Fall, Spring.

HIMT 440 Cr.3
Group Processes, Team Building, and Leadership
This course introduces students to the necessary group/team processes that are at the root of building, developing, and maintaining medical/healthcare work teams and the effective functioning of such teams. The course also provides and overview of leadership development techniques. Also included is a focus on the uses of various communication technologies in the team-building and functioning processes. Consent of department. Offered Fall, Spring.

HIMT 445 Cr.3
Application of Leadership and Management in Healthcare Technology
This course assimilates and integrates concepts and applications of management and leadership in healthcare, advancing on the topics covered in HIMT 355, HIMT 365, and HIMT 415. Topics will include strategic leadership concepts, exploring key factors that impact management and planning change management, and critical organizational behaviors for leadership and management, focusing on best practices, organizational accountability, and assessment models. Prerequisite: HIMT 355, HIMT 365, and HIMT 415. Consent of department. Offered Fall, Spring.

HIMT 450 Cr.3
Healthcare Information and Technology: Standards
This course will be an introduction to healthcare information technology standards, including standards and regulations for documentation, and will cover health information standards. The course will also investigate software applications and enterprise architecture in healthcare and public health organizations. Consent of department. Offered Fall, Spring.

HIMT 489 Cr.1
Pre-Capstone
This is a one-credit course that is intended to serve as an orientation for the HIMT 490 Capstone course as well as a credentialing exam preparation course. This course will help students get more comfortable with all that is involved in the capstone experience. HIMT 489 will also help prepare students for the upcoming credentialing exam(s) that they will be sitting for (in particular, the RHIA and CAHIMS exams). To pass the course, students need to meet the deadlines and requirements for submitting milestone documents (deliverables). Pass/Fail grading. Offered Fall, Spring, Summer.

HIMT 490 Cr.3
Capstone Project
This course is the capstone course for both tracks of the Health Information Management and Technology Program. Students are required to find an internship site that is related to healthcare and set up a semester long project from which they can gain hands-on experience in the areas of their concentration. Project set-up will be jointly done by the student, site sponsor, and the faculty of this course, whereas internship supervision will be performed by the project supervisor and the course instructor. Course should be taken in the student's last semester of study. Prerequisite: HIMT 420, HIMT 489. Consent of department. Offered Fall, Spring, Summer.

Information Systems Courses

IS 220 Cr.3
Information Systems for Business Management
This course provides the basic level of management information systems literacy. The course will introduce the building blocks of information systems, the various organizational aspects of utilizing information systems, and the role of information systems in the digital economy. Students will gain familiarity with spreadsheet and database applications that provide useful information to business functional areas. Prerequisite: sophomore standing. Offered Fall, Spring, Summer.

IS 250 Cr.1-3
Information Systems Internship
An information systems internship provides an opportunity for declared information systems majors to earn academic credit for experiential learning when working for cooperating business, government, or civic organizations. Credits earned will not count toward information systems major requirements. Repeatable for credit - maximum six credits. Prerequisite: cumulative GPA of at least 2.50; declared information systems major. Consent of department. Pass/Fail grading. Offered Fall, Winter, Spring, Summer.

IS 300 Cr.3
Data Management for Business Problem Solving and Decision Making
This course provides an understanding of data management used to help solve business problems and make sound business decisions. In addition to the conceptual and academic foundations of data management, the course also explores the application of software tools to manage, manipulate, analyze, and visualize data. Prerequisite: IS 220 or healthcare analytics management minor. Offered Fall, Spring.

IS 310 Cr.3
Information Systems in Networked Environments: Technical Foundations and Applications
This course provides fundamentals of data communications and business networking requirements, and examines the linkage of information technology strategies and technological solutions for enabling effective business processes within and between organizations in emerging environments. Major topics include fundamentals of data communications and business networking, applications to data communications, basic technologies of the internet and the web, commercial use of internet technologies, e-business applications, and cases in online industries. Prerequisite: IS 220; admission to business or information systems major/minor. Offered Spring.

IS 320 Cr.3
Enterprise Systems for Decision Making and Data Analytics
This course provides an introduction to enterprise systems and their impact on organizations. An enterprise system application is utilized to illustrate the concepts, fundamentals and integration of enterprise-wide applications and processes. Enterprise system data analytics applications are applied to analyze business results and support business decision making. Prerequisite: admission to business or information systems major/minor or business analytics major/minor. Offered Fall, Spring.

IS 330 Cr.3
Business Choices and Telecommunications Decision
An examination of the business and organizational role of telecommunications. The course will not address the theoretical foundations of telecommunications, but rather focus on using telecommunications to support and achieve business strategies. Course topics will include how businesses are being reshaped by advances in telecommunications; how businesses plan, deploy and manage telecommunications resources; and how businesses are utilizing and administrating local area network (LAN) and wide area network (WAN) technology to achieve business objectives. Prerequisite: CS 120; IS 310; admission to business or information systems minor. Offered Occasionally.

IS 340 Cr.3
Information Systems Security and Data Assurance Management
This course provides an overview of information systems security management and data assurance principles. Coverage includes privacy concerns and safeguards, ethical issues surrounding data and information, information risk analysis, information system vulnerabilities, security threats and countermeasures. Prerequisite: admission to business or information systems minor or business analytics minor. Offered Fall.

IS 360 Cr.3
Management of Business Analytics
The course addresses the remarkable impact that analytics is having on business. This course provides students with the fundamental concepts and tools needed to understand the emerging role of business analytics in organizations. The course will examine issues that both information systems managers and non-information systems managers face in managing and performing business data analytics within an organization. Students will apply business analytics approaches to support business decision making and problem-solving efforts and learn how to effectively use and interpret analytic models and results for business decisions. The course covers managerial statistical tools in descriptive analytics and predictive analytics. Prerequisite: admission to business or information systems minor or business analytics minor; junior standing. Offered Fall, Spring.

IS 401 Cr.3
Management Information Systems: Analysis and Design
This is the first course in a two-course sequence that covers the development process for computer-based management information systems. This course emphasizes information analysis and the logical design of management information systems. Prerequisite: IS 300. Offered Fall.

IS 405 Cr.3
Special Topics in Information Systems
Emphasis will be on the examination and study of current issues in information systems. Topics will vary from semester to semester. Repeatable for credit with different topic - maximum six. Prerequisite: admission to business. Offered Occasionally.

IS 411 Cr.3
Management Information Systems: Project Management and Implementation
This is the capstone course in a sequence that covers implementing an information system. This course emphasizes the use of project management techniques to support an information system implementation. In-depth exposure to key tools, techniques, practices, and knowledge areas of project management will be applied to system implementation. Prerequisite: IS 401. Offered Spring.

IS 440 Cr.3
Business Data Visualization and Communication
This course covers data visualization concepts, practices, and tools particularly for analyzing and presenting business data. Students will evaluate, design, and develop effective visualizations and dashboards using various development tools. Prerequisite: ECO 230, IS 300. Offered Spring.

IS 451 Cr.1-6
CBA Management Information Systems Internship
The internship program as conceived and implemented is an unusual program designed to provide an opportunity for students in the College of Business Administration to participate in an approved program with a cooperating business, governmental or civic organization for usually 15 weeks of their undergraduate work. All management information systems (MIS) internships must be approved and supervised by an IS faculty member. For additional information, see internship description under the College of Business Administration heading. Repeatable for credit - maximum six. Prerequisite: cumulative GPA of at least 2.50; ACC 221, ACC 222; BLAW 205; ECO 110, ECO 120, ECO 230; FIN 355; IS 220; MGT 308; MKT 309; admission to business. Pass/Fail grading. Offered Fall, Spring, Summer.

IS 499 Cr.1-3
Independent Study
Individual reading or research under the guidance of a staff member. Open to selected advance students who have excellent records in the department. Repeatable for credit - maximum six. Prerequisite: admission to business. Consent of instructor. Pass/Fail grading. Offered Fall, Spring, Summer.