

# Information Systems Department (IS)

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

## Why Major in Information Systems?

Information systems (IS) is concerned with 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. 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, web developer, information specialist, applications software engineer, analytics 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.

Students in the College of Business Administration must be admitted to business (<http://catalog.uwlax.edu/undergraduate/businessadministrationcba/#Admission>) and also complete the college core requirements.

## Why Minor in Information Systems?

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

## Are you Interested in Health Information Management?

With the rise in popularity and need for technological solutions in healthcare; the UWL IS Department is excited to be able to offer both a Major and Minor in Healthcare technology. The online Health Information Management Technology (HIMT) Major prepares you for a successful career in health information through a focus in management, technology or both.

The Health Information Systems Management (HISM) Minor provides health information systems knowledge to manage medical practices or make decisions to improve the quality and efficiency of healthcare delivery.

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## 2018-19 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 June.*

### Department Chair - Associate Professor

Peter Haried

### Associate Professor

Kyung Hoon (Brian) Yang

### Assistant Professor

Chung-Lung (Nic) Huang

Ye (Hannah) Han

### Lecturer

David Annino

### Associate Lecturer

Susan Herbers

### Administrative Support

Kathy Fontanini

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## Majors

- Information systems - BS (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/informationssystemsis>)
- Health information management and technology - BS (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/healthinformationmanagementandtechnology>)

## Minors

- Information systems minor (CBA) (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/informationssystemsisminor>)
- Information systems minor (non-CBA) (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/informationssystemsisminorothercolleges>)
- Health information systems management minor (CBA) (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/healthinformationssystemsismanagementminorbusiness>)
- Health information systems management minor (non-CBA) (<http://catalog.uwlax.edu/undergraduate/informationssystemsis/healthinformationssystemsismanagementminorothercolleges>)

## Health Information Management and Technology Courses

HIMT 300 Cr.3

### Survey of Contemporary Computing

This course provides a basic overview of contemporary information technology and computers. Topics include computer concepts (e.g., hardware, system architectures, operating systems), communication technologies, and data organization/structures. It introduces the student to the electronic health record, with a special emphasis on database management systems and data warehousing. 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. Prerequisite: Students cannot earn credit in both HIMT 320 and IS 321. 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 of 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. Students cannot earn credits in both HIMT 420 and IS 420. 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. Tools 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. Students cannot earn credit in both HIMT 435 and IS 435. 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 an 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.4

**Information Systems for Business Management**

This course provides the basic level of management information systems literacy. Students will be exposed to the building blocks of computer-based information systems, the various organizational aspects of utilizing information systems, and the role of information technology in the digital economy. To stress the importance of user participation, the systems development life cycle will be introduced from end-users' perspective. Additionally, students will acquire essential skills of personal productivity tools through hands-on training in small classes. Prerequisite: sophomore standing. Offered Fall, Spring.

IS 300 Cr.3

**Data Analytics for Business Problem Solving and Decision Making**

This course provides an understanding of the systematic ways for formulating business problems from information systems perspectives. The course will examine the necessary decision processes that lead to effective solutions utilizing data analytics approaches. Major topics include: data mining and machine learning, organizational decision support using information systems and other data driven problem solving techniques. Prerequisite: IS 220; admission to business or information systems major/minor or healthcare analytics management minor. Offered 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 or health information systems management 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: IS 220; admission to business or information systems minor or health information systems minor. Offered Fall.

IS 321 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. Prerequisite: admission to business or health information systems management minor or healthcare analytics management minor. Students may not earn credit in both HIMT 320 and IS 321. Offered Fall.

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 administering 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 Fall.

IS 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: admission to business or health information management systems minor. Student cannot earn credit in both HIMT 340 or IS 340. Offered Fall.

IS 360 Cr.3

**Management of Information Technology**

An examination of issues that both MIS and non-MIS managers face in managing information and information technology within an organization. The course is a topics course and will, of necessity, vary from semester to semester to stay current with the technological changes which managers would face in the workplace. Topics include strategic uses of information technology, technological trends and their implications, the relationship between organizational structure and information technology, evaluation of the effectiveness of information technology, end user computing, management of new and existing systems and ethical and international issues. Prerequisite: admission to business or health information systems minor; junior standing. Offered Spring.

IS 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: IS 220. Students cannot earn credit in both HIMT 370 and IS 370. Offered Fall.

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: CS 120, IS 300, IS 310; admission to business or information systems minor. Offered Fall.

IS 405 Cr.3

**Information Systems Seminar**

Emphasis will be on examination and study of current issues in information systems. Topics will vary from semester to semester. Prerequisite: IS 300 and IS 310. Offered Occasionally.

IS 410/510 Cr.3

**Information Security Management**

This course provides a comprehensive treatment of the managerial aspect of information security while leaving the technical aspect to the computer science discipline. Concepts of information security management (ISM) related to governance, risk management, and compliance will be acquired from survey of contemporary literature including textbooks, journal articles, and online publications while positive models serving as industry standards that are governing today's ISM practice will be introduced and compared. This course is taught largely at an undergraduate level. Graduate students will have additional course requirements/expectation. Prerequisite: IS 220 or CS 220 or 2-year relevant industry experience; admission to business. Offered Fall.

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: CS 364 and IS 401; admission to business. Offered Spring.

IS 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. Prerequisite: admission to business or health information management systems minor. Students cannot earn credits in both HIMT 420 and IS 420. Offered Spring.

IS 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: IS 220. Students cannot earn credits in both HIMT 435 and IS 435. 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.