Information Systems

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Mission
The Department of Information Systems, Supply Chain, and Analytics provides academically rigorous instruction on the use of analytical tools and theoretical concepts in information systems, management, management science, and marketing to help students understand and apply them to practical business problems in scientific, technological and traditional business environments, non-profits, and government agencies. The departmental faculty also develops and disseminates knowledge on diverse topics related to cybersecurity, management, management science, and marketing.

Information Systems
The major in information systems (IS) is designed for students who want to become administrators or designers of information systems that utilize computers in business or administrative environments. IS subject matter includes computer hardware, computer software, database design, data communication, electronic commerce, systems analysis and design methodologies, information assurance, and behavioral issues and business or administrative context within which computer systems are applied.

We encourage Information Systems majors to use the upper division business elective in their degree program to take IS 495 (https://catalog.uah.edu/search/?P=IS%20495), Internship in Information Systems.

There are two concentrations within the information systems major:

- Information Systems, BSBA - Cybersecurity Concentration (http://catalog.uah.edu/undergrad/colleges-departments/business/information-systems/cybersecurity-concentration/)

With the growing importance of information technology and high tech environment in our economy, there is a growing need for students to bolster their technical credentials. The minor in Information Systems is designed to provide students in any major with coverage of basic Information Systems topics. It provides students with the flexibility to design their minor to match their interests in other business areas with significant overlap with information technology.

Students electing a minor may use the courses completed in their Charger Foundations as part of the required hours in a minor. Students may also use relevant courses to meet the requirements in their major.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Semester Hours</th>
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<tbody>
<tr>
<td>IS 301</td>
<td>INFORMATION SYSTEMS IN ORGANIZATIONS</td>
<td>3</td>
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<tr>
<td>IS 310</td>
<td>ADVANCED PROGRAMMING</td>
<td>3</td>
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<td>IS 340</td>
<td>DATABASE MANAGEMENT</td>
<td>3</td>
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<tr>
<td>IS 412</td>
<td>SYSTEMS ANALYSIS &amp; DESIGN</td>
<td>3</td>
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<tr>
<td>IS 351</td>
<td>ENTERPRISE AND SUPPLY CHAIN MANAGEMENT SYSTEMS</td>
<td>3</td>
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<td>IS 401</td>
<td>CYBERSECURITY PRINCIPLES</td>
<td>3</td>
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<tr>
<td>IS 460</td>
<td>NETWORKING &amp; IT INFRASTRUCTURE</td>
<td>3</td>
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<tr>
<td>IS 471</td>
<td>BUSINESS ANALYTICS &amp; AI</td>
<td>3</td>
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<td>ECN 411</td>
<td>ECONOMICS OF INFORMATION TECHNOLOGY</td>
<td>3</td>
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<td>MKT 350</td>
<td>MARKETING EMERGING TECHNOLOGY</td>
<td>3</td>
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<td>MKT 470</td>
<td>SOCIAL MEDIA MARKETING</td>
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Total Hours: 18

IS 146 - COMPUTER APPLICATIONS IN BUSINESS
Semester Hours: 3

Study of computer solutions to business problems. Overview of hardware/software systems and of data and information processing in organizations. Extensive use of Microsoft Office and other software for word processing, spreadsheet, presentation, and database applications related to business.
IS 210 - INTRO TO COMPUTER PROGRAMMING IN BUSINESS
Semester Hours: 3
Fundamentals of business programming using languages such as Python, PHP, JavaScript, JQuery and HTML5. Prerequisite: IS 146.

IS 301 - INFORMATION SYSTEMS IN ORGANIZATIONS
Semester Hours: 3
Understanding the role of information systems in organizations and how they relate to organizational objectives and organizational structure. Introduce information system applications and the SAP software to illustrate the concepts covered in this course. Prerequisite: IS 146.

IS 310 - ADVANCED PROGRAMMING
Semester Hours: 3
This second level programming course introduces advanced programming concepts with more complex I/O, file and data handling, object oriented programming, testing and quality and maintenance. The course focuses on developing solutions for business problems. Prerequisite: IS 210 or equivalent programming course.

IS 340 - DATABASE MANAGEMENT
Semester Hours: 3
Organizing and managing the data resources of an organization using information technology. The course covers modeling and design of databases for organizations. It will also cover query, reporting and visualization of data for supporting decision-making by managers. Students will be introduced to the technologies that support business analytics and basics of analytics. Prerequisite: IS 301.

IS 351 - ENTERPRISE AND SUPPLY CHAIN MANAGEMENT SYSTEMS
Semester Hours: 3
This course emphasizes the importance of integration of processes within an enterprises and across enterprises in a supply chain and the systems used to support these processes. Enterprise systems support the internal logistics chain within a firm integrating processes across all functions. Students will learn about the digital transformation taking place within the firm and across the firm's supply chain. The course will introduce students to processes and systems that firms use to harness the capabilities of their supply chain partners and supply networks. Prerequisites: IS 301.

IS 401 - CYBERSECURITY PRINCIPLES
Semester Hours: 3
Provides a managerial and technical overview of cybersecurity and introduces students to the complexity of the security issues facing organizations. Presents practices and standards for assessing security risks and managerial and technical approaches to minimize such risks. Prerequisite: IS 301.

IS 412 - SYSTEMS ANALYSIS & DESIGN
Semester Hours: 3
Identifying, analyzing, developing and acquiring information systems are central to the information systems discipline. The course covers identifying, conceptualizing and analyzing business opportunities where information systems applications can add value followed by design, development, and implementation of such applications. Planning for and management of this core IS activity is a critical organizational competence. Prerequisites: IS 301, IS 310, and IS 340.

IS 422 - SUPPLY CHAIN MANAGEMENT SYSTEM
Semester Hours: 3
This course presents the main concepts of supply chain management systems and software including ERP, CRM and SCM systems as well as the underlying technologies and managerial implications. It provides hands-on familiarity with SAP supply chain modules. Prerequisite: IS 301.

IS 450 - CYBERSECURITY MANAGEMENT
Semester Hours: 3
Examines management issues associated with cybersecurity system planning, implementation, control and assurance. Specific emphasis is on security system controls and their evaluation, compliance, governance, security policies, ethical and legal issues, and risk management. Recent developments in IT, such as client-server systems, cloud computing and the Internet, and their impact on policies, laws are also considered. Prerequisite: IS 301.

IS 460 - NETWORKING & IT INFRASTRUCTURE
Semester Hours: 3
An overview of the IT infrastructure in modern organizations. The course starts from basic networking concepts to digital platforms and ecosystems in the market. Prerequisite: IS 301.
IS 463 - DIGITAL FORENSICS
Semester Hours: 3
Provides an introduction to the area of digital forensics. Examines the problems and concerns related to Cybersecurity forensic investigations. Blends traditional investigation methods with classic systems-analysis problem-solving techniques and applies them to computing investigations. This course is lab intensive and students are expected to gain hands-on experience through learning to use various forensic software. Several information security topics nonspecific to forensics will also be covered. Prerequisite: IS 401.

IS 471 - BUSINESS ANALYTICS & AI
Semester Hours: 3
The course covers the use of data analytics to support decision-making in organizations and gain insights to support tactics and strategy. In addition to analytics, students will also be introduced to Artificial Intelligence (AI) techniques for analytics. Students will use many business analytics tools and gain experience in mining data. The course is designed to develop data-analytic thinking in the era of big data. Prerequisites: IS 301, IS 310 and MSC 288.

IS 477 - NETWORK DEFENSE & SECURITY
Semester Hours: 3
Introduction to network security issues and practical applications. Addresses translation, packet filtering, proxy servers, and firewalls, and Virtual Private Networks. This course assumes familiarity with internet and basic networking concepts such as TCP/IP, gateways, routers, and Ethernet. Prerequisites: IS 401 and IS 460.

IS 480 - CURRENT TOPICS IN MANAGEMENT INFORMATION SYSTEMS
Semester Hours: 3
Prerequisite: IS 301.

IS 490 - SPECIAL PROJECTS
Semester Hours: 3

IS 491 - INFORMATION SYSTEMS MANAGEMENT & STRATEGY
Semester Hours: 3
This course emphasizes the integration of various principles, theories, and techniques for implementing, deploying and managing enterprise information systems in organizations to gain strategic and operational advantages. Includes lectures, tours, readings, cases, and the completion of a major project. Normally taken during a student's last semester of studies. Prerequisites: IS 340 and either IS 351 or 460. Prerequisite with concurrency: IS 412.

IS 495 - INTERNSHIP IN INFORMATION SYSTEMS
Semester Hours: 1-3