

INTEGRATED TECHNOLOGY

Integrated Technology (IT) specialists design and operate the computer systems that are vital to businesses and organizations today. The Husson IT curriculum includes a strong core of general business courses, general education requirements, as well as special training in computer programming, software development, systems development and implementation, web design and development, networking, and project management.

Students will learn programming in Visual Basic, HTML, and Java. Courses involving networking and network management as well as website design will give students valuable high-level skills and prepare them to go directly from college into a position of true responsibility. At Husson University you will learn to use the computer to manage many different forms of information that are vital to organizations today.

Requirements for IT Majors

All IT majors must earn an overall 2.0 cumulative grade-point average as well as a 2.0 overall in their IT prefix courses. Transfer students must complete a minimum of 30 credit hours, and at least 15 credits must be earned in IT prefix courses at Husson University.

Courses

IT 111. Introduction to Microsoft Office. 3 Hours.

The course covers the elements of hardware, software and the uses of the microcomputer in today's society. Hands-on experience includes word processing, spreadsheet, database management, and presentation software.

IT 121. Computer Applications for Digital Media. 3 Hours.

This introductory course provides an overview of computer fundamentals, the Internet and networks, file compression concepts, digital media applications, and digital file organization and management techniques. Students experience various software tools relevant to the communications industry including imaging, publishing, audio, video, web, presentation and cloud-based collaboration and learning systems.

IT 201. Web Imaging. 3 Hours.

This course introduces students to the visual design of websites and web applications. Topics include composition, color, typography, information architecture, prototyping, user experience and software tools. Students also explore the creation and application of other web-related graphics such as photos, icons, logos, display ads, and various user interface elements.

IT 202. Web Design for Non-Majors. 3 Hours.

This course serves as an introduction to web design using Dreamweaver and also covers basics of Hypertext Markup Language (HTML) and CSS. Emphasis is on the proper structures and concepts used in web development. Topics include text, images, layout, styling, tables, implementing video and audio in a website, html and CSS code editing, web forms, spry element, and legacy design. Internet technologies including HTTP, TCP/IP, search engine optimization, and security are also discussed. Additional topics include accessibility, intellectual property, and ethics.

IT 207. Web Design-Content Layer. 3 Hours.

This introductory course offers students the experience of planning, designing, developing, and deploying a basic website using the latest tools and methods available. It focuses primarily on hypertext markup language (HTML), which is the first layer in the separation of concerns for building a rich user experience on the Web and lays the necessary foundation for subsequent courses in Web Design & Development. Additional technology topics include Internet fundamentals, CSS, scripting, graphic creation, and basic page layout and interface design.

IT 209. Web Design - Presentation Layer. 3 Hours.

This is an intermediate course offering the student the experience of planning, designing, developing, and deploying professional websites using the latest tools and methods available to the professional web designer/developer. Expanding on Web Design - Content Layer, this course focuses on cascading style sheets (CSS) and the second layer in the separation of concerns for building a rich user experience on the Web. Students explore in more detail what constitutes a functional and visually appealing user interface as well as introducing some techniques for rapid web development. Additional technology topics include introductions to server-side scripting with PHP and client-side scripting with JavaScript frameworks and libraries. Prerequisite(s): IT 207.

IT 210. Basic Database Design and Implementation. 3 Hours.

The course provides a strong hands-on overview of relational databases. Using small office database technologies (such as Microsoft Access) students explore proper database design and construction. SQL is introduced as the primary tool for extracting data out of a database. The course is intended for non-IT majors. IT majors are directed to IT 410.

IT 211. Search Engine Marketing. 3 Hours.

Search Engine Marketing provides students with a fundamental understanding of website promotion from both the marketing and technical perspectives. In addition to learning web analytics students learn how search engines work and rank. They also learn all aspects of search engine optimization. This course explores the future of search and the semantic web. Prerequisite(s): MC 220 or BA 245.

IT 214. Microcomputer Spreadsheet Applications. 3 Hours.

This course covers microcomputer spreadsheet software. Topics include functions, decision making, macros, custom menus, importing and exporting.

IT 223. User Experience and Interaction Design. 3 Hours.

This course explores a range of topics related to general usability as well as human-computer interaction including user experience, interaction design, user-centered design, information architecture, and evaluation and testing. Prerequisite(s): IT 207.

IT 241. Managing and Maintaining a PC I. 3 Hours.

This course develops a base for supporting end-user workstation system. It emphasizes installing, configuring, and trouble shooting computer hardware and software in a laboratory setting. The course prepares the student for the Comp TIA's A+ exams.

IT 242. Managing and Maintaining a PC II. 3 Hours.

Building upon the foundation in IT 241, this course emphasizes installation, management, and maintenance of Microsoft Windows desktop client operating system. Some course time is dedicated to understanding how the operating system interfaces with various aspects of computer hardware. This course prepares students to pursue the Comp TIA A+ Certification. Prerequisite(s): IT 241.

IT 245. Desktop Publishing. 3 Hours.

During this course, students use current software packages to produce a wide range of high-quality interoffice publications such as forms, proposals and directories, and outside-of-organization communications such as flyers, catalogs, annual reports, brochures, newsletters, etc. Through this process, students become familiar with typographic techniques used to create professional-looking documents. Students are also introduced to using basic design and layout features such as white space, graphic elements, and color. Accuracy and creativity are essential as the students design and publish functional promotional materials. A professional portfolio containing sample projects is an integral part of the evaluation process.

IT 261. Introduction to Computer Programming I. 3 Hours.

This is the first of a two course sequence serving as an introduction to computer programming. The course covers the basic terminology and structure of writing computer software. In addition, the course establishes a solid foundation in the use of the basic building blocks associated with writing software including data types, variables, conditional and looping constructs, error handling, and debugging. Throughout the course, students are introduced to and are expected to follow industry standards and best practices of the software development discipline.

IT 262. Introduction to Computer Programming II. 3 Hours.

This is the second of a two course sequence serving as an introduction to computer programming. The course covers the basic terminology and structure of writing computer software. It builds upon the foundations associated with writing software including arrays, collections, classes, file I/O, and database connections. Throughout the course, students are introduced to and are expected to follow industry standards and best practices of the software development discipline. Prerequisite(s): IT 261.

IT 299. Topic/. 3 Hours.

This course is of variable content with selected topics presented to provide prerequisites for specifically identified additional coursework in Integrated Technology. The course emphasizes independent investigation and the fundamental principles of computing and information technology.

IT 305. Workflow Management. 3 Hours.

This is an advanced course offering the experience of planning, designing, developing and deploying professional technology projects using the latest tools and methods available. In addition to expanding upon topics covered in previous courses, Workflow Management explores emerging topics and technologies. Students bring together all of the skills learned in their studies to create projects for clients encompassing all phases of technology project workflow including requirements definition and project planning, design, development, quality assurance, deployment and support.

IT 311. Interactive Web Design I. 3 Hours.

This course introduces students to Adobe Animate, a common platform for the development of interactive multimedia content for the web, as well as rich internet applications, mobile applications, and games. In addition to learning the Animate interface and various animation techniques, students will also learn programming skills using Action Script, Animate's internal scripting language.

IT 321. Systems Analysis & Design. 3 Hours.

This course covers methodology for the investigation analysis and general design, detailed design, and implementation of computer information systems. Comprehensive case studies are used to illustrate the phases of Integrated Technology project development. Topics presented for system development include data flow diagrams, normalization, RAD, extreme programming (XP), software development life cycle (SDLC), and program specifications. Prerequisite(s): IT 261.

IT 322. Decision Support and Expert Systems. 3 Hours.

In this course, students explore decision support and expert systems which are designed to synthesize what is known about the business application and to make that knowledge available to and effective in the hands of working decision-makers. Topics covered include artificial intelligence, natural language systems, expressing rules, and dealing with uncertainty. Expert system development software is used. Prerequisite(s): IT 111.

IT 325. Algorithms and Data Structures I. 3 Hours.

This is the first of a two course sequence serving as an introduction to the algorithms and data structures utilized in computer programming. The course covers the basic data structures used in software development including lists, sorted lists, stacks, queues, sets, and graphs, and their implementations. For algorithms, the students are introduced to a number of algorithm designs including greedy and divide-and-conquer, and specific algorithms including resizing arrays, shortest path, and spanning trees. Prerequisite(s): IT 325.

IT 326. Algorithms and Data Structures II. 3 Hours.

This is the second of a two course sequence serving as an introduction to the algorithms and data structures utilized in computer programming. The course covers the basic data structures used in software development including lists, sorted lists, stacks, queues, sets, and graphs and their implementations. For algorithms, the students explore further a number of algorithm designs including greedy and divide-and-conquer, and specific algorithms including resizing arrays, shortest path, and spanning trees. Prerequisite(s): IT 325.

IT 331. Networking. 3 Hours.

This course covers the different types of networking topologies such as client-server, peer-to-peer, and network administration. Practical aspects include setting up a network, hardware maintenance, and hands-on experience.

IT 332. Advanced Networking. 3 Hours.

This course builds upon basic network knowledge. Topics covered include network topology, infrastructure, hardware, segmentation, and troubleshooting. Students also examine security issues related to protecting data assets from internal and external threats. Prerequisite(s): IT 331.

IT 333. Computer Forensics. 3 Hours.

This course focuses on the investigative use of computer technologies and electronic records. Students explore digital evidence and the valuable information it can provide to investigators. The course has a two-tier approach. First, students are shown how to extract readily decipherable information from someone's computer such as looking at their files or their browser history of web sites visited. Even if the information is password protected or has been deleted it might still be recoverable. For the second tier, students examine criminal use of computers and the Internet for activities ranging from endangering children to financial fraud. This course is intended to address a growing need in law enforcement. Prerequisite(s): Major=BS Criminal Justice or Major=BS Integrated Technology - CIS or Major=BS Integrated Technology - Software Development and Major=BS Integrated Technology - Web Design and Dev.

IT 336. Web Design-Behavior Layer. 3 Hours.

This is an intermediate course which focuses primarily on JavaScript and the third layer in the separation of concerns for building a rich user experience on the Web. Students learn programming skills for scripting client-side functionality into web design and development projects. Additional technology topics include JavaScript frameworks and libraries and AJAX.

IT 341. Managing and Maintaining a Windows Server I. 3 Hours.

This course builds upon the fundamentals developed in IT 241-242 to bring greater detail to the challenges and technology of distributed system management. Examples of topics include Configuration Management, Backup/Disaster Recovery, User Management, Data Management, Application Management, Logistics and Licensing. Prerequisite(s): IT 242.

IT 342. Managing and Maintaining a Windows Server II. 3 Hours.

This course focuses on the knowledge and skills required to install, configure, upgrade, and otherwise manage Microsoft Windows Server systems. Information is presented in a combination of lecture and hand-on laboratory work. Prerequisite(s): IT 341.

IT 351. Information Technology Internship. 3 Hours.

This internship experience allows students to practically apply classroom theory at for-profit or non-profit organizations in a supervised, workplace environment. Prerequisite(s): College Level=Junior or College Level=Senior.

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IT 361. Java I. 3 Hours.

This course focuses on problem solving using an object-oriented programming language. It also emphasizes modern practices in programming. Prerequisite(s): IT 261.

IT 362. Java II. 3 Hours.

This course furthers the learning objectives of IT 361. It explores advanced use of the language including packages for data access and web server scripting. Prerequisite(s): IT 361.

IT 405. Mobile Application Development. 3 Hours.

This is an advanced course offering the student the experience of planning, designing, developing and deploying professional mobile applications for iOS and Android using the latest tools and methods available to the professional app designer / developer. Students will have the opportunity to bring together all of the skills learned in their Integrated Technology studies to create a deployable mobile application ready for submission to Apple and Google and potentially other platforms as well.

IT 409. e-Commerce Development. 3 Hours.

This is an advanced course that offers the student the experience of planning, designing, developing, and deploying secure professional e-commerce websites using the latest tools and methods available to the professional app designer / developer.

IT 410. Database Design. 3 Hours.

This course covers design, development, and information retrieval from a relational database. Areas of study include entity-relationship diagramming, normalization, database construction, and structured query language (SQL). Both desktop and enterprise level database management systems are explored.

IT 411. Interactive Web Design II. 3 Hours.

This course introduces students to the concepts of web pages interacting and reacting to the users' input and actions. Students explore the concepts of interactive design using a JavaScript library to enhance user experiences. This is a continuation course, which introduces more complex topics, including larger-scale applications, incorporating external files and data, and more advanced scripting. Interactive Web Design II serves to introduce students to the basics of interactive design and logic.

IT 431. Theory and Practice in IT Security. 3 Hours.

This course covers selected topics in integrated technology pertaining to security. It explores the principles and practices of integrated technology security as it relates to computer information systems, software design, and web design and development, with a focus on industry best practices.

IT 461. Web Applications I. 3 Hours.

This is an intermediate course offering students the experience of planning, designing, developing and deploying web applications on the LAMP platform (Linux, Apache, MySQL, and PHP) using the MVC (model, view, controller) methodology. This course also introduces students to popular web applications development frameworks. Prerequisite(s): IT 336.

IT 462. Web Applications II. 3 Hours.

This is an advanced course offering students the experience of planning, designing, developing and deploying professional web applications on the LAMP platform (Linux, Apache, MySQL, and PHP) using the MVC (model, view, controller) methodology on popular web application development frameworks. Students taking this course must have successfully completed Web Applications I. Prerequisite(s): IT 461.

IT 471. Current Trends in IT. 3 Hours.

This course is designed to explore current trends and events as well as research emerging technologies in the global environment of integrated technology. Students learn about the constantly changing nature of integrated technology and its implementation in business and industry and the need for continued lifelong learning. Trends in computer information systems, software development, and web design and development are also explored and discussed. Prerequisite(s): College Level=Junior or College Level=Senior.

IT 481. Project Management Techniques. 3 Hours.

This course provides student with practical methodologies for planning and managing projects effectively. Student undertake projects which must be completed within the constraints of cost, time, and quality.

IT 482. Information Technology Project Development. 3 Hours.

Students use a team approach to plan, manage, and implement a comprehensive, realistic, information technology project of moderate complexity. Prerequisite(s): IT 481.

IT 499. Topic/. 3-6 Hours.

This is a course of variable content. Faculty and students prepare a special topic of timely interest in the area of Integrated Technology. The course may consist of seminars, individualized instruction and/or research related to a specific area of specialization. Prerequisite(s): College Level=Junior or College Level=Senior.