

(IT) INTEGRATED TECHNOLOGY

Courses

IT 110. Data Exploration & Visualization. 3 Hours.

Modern visualization techniques involve static and interactive approaches as well as figures that dynamically update. This course covers how visual information is perceived, how to create effective visualizations, and what dangers exist with data visualization and how to avoid them. In this course, students design and create summaries and visualizations to transform data into information in a variety of context and complete a visualization project.

IT 111. Introduction to Microsoft Office. 3 Hours.

This is a 3-credit hour course using Microsoft Office to teach the basic features of Word, Excel, Access, and PowerPoint, and to integrate data between the applications. Students become acquainted with the proper procedures to create documents, worksheets, databases, and presentations suitable for coursework, professional purposes, and personal use. Students gain basic hands-on experience using the integrated programs of Microsoft Office.

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

This course serves as an introduction to web design, focusing on using content management systems to craft well-structured and visually appealing websites. Content management systems are widely used today in the production and maintenance of websites, and skills learned in this course will be useful to anyone who may need to design or update a website. Emphasis is placed on design elements such as text, images, layout, and styling. Additionally, topics covered include accessibility, intellectual property, ethics, e-commerce, and the basics of search engine optimization.

IT 208. Web Design & Development. 3 Hours.

This course is a comprehensive exploration of the underlying languages (HTML, CSS, and Javascript) used in the design and development of websites. Over the course of the semester students engage in a series of experiential challenges and case problems as they build practical skills in using these languages in building web deliverables.

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 214. Spreadsheet Concepts and Applications. 3 Hours.

This course introduces students to modern spreadsheet applications such as Microsoft Excel. Within the spreadsheet application, students learn how to use formulas and functions, create charts and graphs, manage large datasets, create pivot tables and use other advanced features. The course also covers best practices for spreadsheet design and implementation.

IT 220. Introduction to Data Analytics. 3 Hours.

This course provides an overview of data acquisition, management, preparation, visualization, analysis and modeling. Students leverage modern data analytics technologies to work with data from a variety of different professional domains. Prerequisite(s): MS 132.

IT 223. User Experience 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.

IT 235. IT Security Fundamentals. 3 Hours.

This course introduces the foundational principles and terminology of cybersecurity, providing a comprehensive understanding of key concepts, threats, and types of vulnerabilities that affect modern information systems. Core topics include risk management, policy development, network security, cryptography, and incident response. Through textbook readings, real-world case studies, and practical labs, the course establishes the essential knowledge required to recognize security risks, apply protective measures, and support an organization's overall cybersecurity posture.

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 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 extends the foundational computer programming content to include basic data structures, object oriented programming techniques and recursion. 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 265. Apple Application Development. 3 Hours.

This course introduces to the student to modern techniques and tools used to create and deploy mobile applications. Using industry appropriate tools for Apple mobile development, students learn how to design, build and deploy mobile applications to Apple devices. Basic computer programming concepts and the project development cycle are also covered in this course. 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 311. Interaction Design. 3 Hours.

This course introduces students to tools and frameworks used in the development of interactive content for websites, rich internet applications, mobile applications, and games. In addition, students learn programming skills specific to supporting user interactions in digital interfaces and build upon fundamental interaction design concepts.

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 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 261.

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. Network Security. 3 Hours.

This course introduces the principles and practices of securing computer networks against modern threats. Students learn to design and implement network defenses through firewalls, VPNs, access controls, and intrusion prevention systems. Emphasis is placed on risk management, secure network architecture, encryption, and monitoring to ensure confidentiality, integrity, and availability of networked systems. Hands-on labs provide practical experience in configuring and analyzing secure network environments. Prerequisite(s): IT 235 or (Major=BS Computer Information Systems or Major=BS Software Development).

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 335. Cybersecurity Management & Compliance. 3 Hours.

This course provides a comprehensive examination of information security management and its role in protecting organizational assets. It emphasizes strategic planning, policy and procedure development, risk assessment and mitigation, regulatory compliance, and operational security practices. The course explores how governance frameworks, security standards, and management processes integrate to create a cohesive and effective security program. Through the study of best practices and real-world applications, it highlights how well-designed security management strategies support business objectives, ensure data integrity, and maintain organizational resilience in an evolving threat landscape. Prerequisite(s): IT 235.

IT 336. Scripting for the Web. 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 is the first of a two course sequence that focuses on the knowledge and skills required to install, configure, upgrade, and otherwise manage Microsoft Windows Server systems. Students use Windows Server to create domain controllers that provide DHCP, DNS, File and Print services to clients. Basic virtualization concepts and implementation techniques are also explored. 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 hands-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.

IT 352. 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.

IT 353. 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.

IT 354. 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.

IT 361. Object Oriented Programming. 3 Hours.

This course examines the object-oriented programming (OOP) paradigm. The course covers basic OOP terminology, best practices for writing programs using OOP, Object-Oriented Analysis and Design (OA&D), Unified Modeling Language (UML) diagrams for modeling OOP, and introduces design patterns. The course takes a hands-on approach as student will write OOP programs using a modern programming language. Prerequisite(s): IT 261.

IT 366. Programming Principles for Augmented Reality. 3 Hours.

Building on previous course(s) in application development, this course introduces modern techniques and tools used to create and deploy augmented reality (AR) applications. Using industry appropriate tools for AR iOS mobile development, students learn how to design, build and deploy AR enhanced mobile applications to iOS devices. Prerequisite(s): IT 265.

IT 371. Drones, 3D Printing and Emergent Technologies. 3 Hours.

This survey course uses a research-based approach mixed with hands-on application to explore the ethical implications and practical implementation of Drones, 3D Printers, and Emergent Technologies in society and organizations. Students collaborate to determine legal and ethical concerns, costs, and potential implementation of these technologies in industry. The modular framework of this course allows for exploration of each technology. This course is designed for general student participation with no pre-requisites.

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 431. IT Security Tools & Techniques. 3 Hours.

This course introduces students to the foundational tools and techniques used to protect and secure modern IT environments. Emphasizing a holistic approach to cybersecurity, students will explore the essential technologies and practices that safeguard systems, networks, and data against threats and vulnerabilities. Through hands-on exercises and applied learning, students will gain practical experience using industry-standard tools to identify risks, implement defenses, and maintain secure IT operations. Prerequisite(s): IT 235 or Major=BS Computer Information Systems or Major=BS Software Development.

IT 433. Ethical Hacking and Intrusion Detection. 3 Hours.

This course introduces students to both offensive and defensive cybersecurity techniques. Students learn to identify, exploit, and mitigate system vulnerabilities while adhering to legal and ethical standards. Emphasis is placed on configuring and analyzing intrusion detection systems (IDS), monitoring network traffic, and detecting attacks using tools such as Snort, Wireshark, and Metasploit. The course prepares students to understand the hacker mindset, detect intrusions, and implement countermeasures to protect information systems. Prerequisite(s): IT 235 or Major=BS Computer Information Systems or Major=BS Software Development.

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 471. IT Strategy and Innovation. 3 Hours.

This course examines how information technology functions as a strategic enabler of organizational performance and innovation. It explores the interaction between IT and business units, emphasizing the alignment of technology initiatives with overall enterprise objectives. The course provides an in-depth look at how IT strategies are developed and implemented to drive business outcomes while maintaining operational stability. Special focus is placed on the evaluation and adoption of emerging technologies, including methods for identifying, assessing, and integrating innovative solutions within existing IT infrastructures.

IT 481. Project Management Techniques. 3 Hours.

This course provides students with practical methodologies for planning and managing projects effectively. Students 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.

IT 600. Computer Programming for the Professional. 3 Hours.

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 601. Business Analytics Essentials for the Professional. 3 Hours.

This course provides a comprehensive overview of data science, the steps in the data analysis process, and the role, attributes, and skills of a data analyst. The course enables students to build an understanding of the languages, terminologies, and methods of data analysis through the practical applications of formulas, functions, and visualizations in Excel and R.

IT 602. Data Exploration and Visualization in Business Applications. 3 Hours.

This course covers how visual information is perceived, how to create effective visualizations, and what dangers exist with data visualization and how to avoid them. Students design and create summaries and visualizations to transform data into information in a variety of context and complete a visualization project. Students should have some prior knowledge of basic statistics prior to enrolling in this course.

Prerequisite(s): IT 601.

IT 605. Data Mining for Business Analytics. 3 Hours.

Data mining for Business Analytics teaches students the process of using Python to work with large data sets and identify patterns and relationships in order predict future trends applicable in business. Topics include Dimension Reduction, Predictive Performance, Multiple Linear Regression, Naive Bayes Classifier, Classification and Regression Trees, Logistic Regression, Forecasting Time Series, and Text Mining.

Prerequisite(s): IT 600 and IT 601.

IT 610. Database Design for the Professional. 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.