BCIS-BUSINESS COMPUTER SYSTEMS

BCIS 1110. Introduction to Information Systems
3 Credits (3)
Examination of information systems and their impact on commerce, education, and personal activities. Utilization of productivity tools for communications, data analysis, information management and decision-making.
Learning Outcomes
1. Describe the social impact of information literacy and systems in relation to commerce, education, and personal activities.
2. Explain how to use the information resources legally, safely, and responsibly in relation to ethical, security, and privacy issues.
3. Evaluate bias, accuracy and relevance of information and its sources.
4. Use productivity tools for communications, data analysis, information management and decision-making.
5. Describe and use current information systems and technologies

BCIS 1160. Windows
1-3 Credits (1-3)
This course prepares students to develop the skills needed to deploy and manage Windows. Students will learn how to manage and troubleshoot Windows devices in a secure network environment. Students will also learn to run multiple operating systems using client Hyper-V. Microsoft Intune will be utilized to teach students to manage Windows mobile and desktop devices in a cloud-based environment. Out-of-class computer work is required. May be repeated up to 6 credits.
Learning Outcomes
1. Demonstrate how to install Windows.
2. Execute System Utilities.
3. Explain how to manage disks and file systems.
4. Recount the features of user management.
5. Describe Windows security features.
6. Identify the features of user productivity tools and application support.
7. Highlight the steps to complete performance tuning and system recovery.
8. Outline in detail how Microsoft Intune Device Management is utilized.
9. Summarize how to run multiple operating systems inside a virtual machine using Client Hyper-V. 1
10. Summarize Enterprise Computing. 1
11. Illustrate Remote Access and Client Support processes.

BCIS 1215. Introduction to MS Excel I
3 Credits
This course introduces Microsoft Excel spreadsheet software. Coverage includes creating, editing, manipulating, and printing workbooks, charts, features and commands, spreadsheet design, formulas, and functions.
Learning Outcomes
1. Identify the basic Excel (spreadsheet) concept.
2. Describe and apply basic skills of worksheet and cell formatting, charts, and tables.
3. Recognize and demonstrate the concepts of creating, editing, and formatting worksheets.
4. Apply and demonstrate the concepts of working with charts.
5. Apply formulas and functions.
6. Analyze data using formulas and compiling workbook data.

BCIS 1220. Introduction to MS Word
3 Credits (2+2P)
This course introduces MS Word software. Basic word processing techniques and applications will be covered. Students will create, revise, store, share and retrieve documents. Students will learn various formatting techniques, use of tables, use of references tools. May be repeated up to 6 credits.
Learning Outcomes
1. Manage documents: navigate within documents; format documents; save and share documents; and inspect documents for issues.
2. Insert and format text, paragraphs, and sections: Insert text and paragraphs; format text and paragraphs; create and configure document settings.
3. Manage tables and lists: create tables; modify tables; create and modify lists.
4. Create and manage references: create and manage reference elements; create and manage reference tabs.
5. Insert and format graphic elements: insert illustrations/text boxes; format illustrations and text boxes; add text to graphic elements; modify graphic elements.
6. Manage document collaboration: add and manage comments; manage change tracking.

BCIS 1230. Introduction to MS PowerPoint
3 Credits (3)
Introduction to the electronic presentation, specifically how to use, design and edit presentation graphics for use in a variety of personal and business applications. Students will learn how to create and work with design templates, auto layouts, and background slides. Also covered are how to add tables, charts, clip art, pictures, video, sound and animation effects.
Prerequisite: BCIS 1220 or ability to demonstrate keyboarding and Windows proficiency.
Learning Outcomes
1. Create, edit, format, and save PowerPoint presentations.
2. Create and change templates.
3. Create, apply, and customize Master slides.
4. Create, apply, and customize presentation themes.
5. Create, apply, and customize styles presentations.

BCIS 1750. Microsoft Outlook and Office Procedures
3 Credits (3)
This course provides information about office principles and procedures that are used in the fast-paced offices of today. Student will become proficient using Microsoft Outlook and other current technologies to develop the foundational skills necessary to manage email, appointments, contacts, and tasks.
Prerequisite: ENGL 1110G.
Learning Outcomes
1. Demonstrate office skills in office communications, record management, proofreading, research techniques, planning meetings and conferences, writing and dictating correspondence.
2. Describe the technologies of the modern office such as electronic mail, word processing, information processing, and telecommunications.
3. Perform a mastery of punctuation, grammar, writing skills and indexing skills.

4. Manage records, make travel arrangements, and execute general administrative duties.
5. Define ethics and ethical behavior.
6. Manage the Outlook environment efficiently within a professional business setting.
7. Manage messages in an organized way for productivity.
8. Manage schedules to clearly communicate among professionals.
9. Manage contacts and groups to effectively connect business individuals.

BCIS 2120. Desktop Publishing
3 Credits (3)
This course utilizes a variety of software packages to produce reports, brochures, advertisements, correspondence and newsletters. Various software packages are used such as Microsoft Office Publisher® and Adobe® InDesign CS Suite.
Prerequisite: BCIS 1110.
Learning Outcomes
1. Effectively utilize the features of Microsoft Publisher, such as create, open, edit, save, view and print a publication.
2. Design and create top quality publications using templates, color schemes, text and graphics suitable for academic professional, and personal use.
3. Merge publications while working with advanced formatting.
4. Produce publications using design techniques, font schemes, object manipulation, and layout guides.

BCIS 2130. Web Design
3 Credits (3)
Design and create a website using HTML, CSS, web development tools and industry-recognized software while applying best practices in site management and business web presence.
Learning Outcomes
1. Students will identify and apply best practices for web design in a business setting.
2. Students will create a basic web page utilizing WC3 principles.
3. Students will explain the importance and impact of web presence in today's business environment.
4. Students will determine and utilize web page features and techniques for a specific business.
5. Students will create a web design management plan for business.
6. Students will discuss web page tools for performance and web traffic analytics.
7. Students will identify web design components for a mobile society.

BCIS 2221. MS Word®II
3 Credits (2+2P)
This course provides an in-depth study of MS Word software. Students will learn how to create professional business documents, templates, customize themes, mail merge, and reports with citations and references.
Prerequisite: OTEC 1101 or keyboarding proficiency.
Learning Outcomes
1. Create, edit, format, and save Word documents.
2. Create reports using chosen reference style which includes citations and bibliography.
3. Create a multiple-page report with tables, footnotes, and endnotes.
4. Create a professional newsletter, which includes inserting section breaks, formatting columns, inserting symbols, and distinguishing between online and inline objects.
5. Create and change templates.
6. Create, apply, and customize document themes.
7. Create, apply, and customize styles.
8. Create and edit documents using mail merge with data sources and main documents.

BCIS 2310. Spreadsheets and Data Analysis
3 Credits (3)
Evaluation of and advanced applications of electronic spreadsheets. Basic concepts of business statistics, data analysis, and management science integrated in a contemporary spreadsheet environment. Emphasizes practical applications and business decision making.
Prerequisite: BCIS 1110.
Learning Outcomes
1. Develop and work with professional-looking worksheets.
2. Integrate Microsoft Excel®® with other Microsoft programs.
3. Work with multiple worksheets and workbooks.
4. Perform what-if analyses.
5. Enhance Microsoft Excel®® with Visual Basic®.
6. Use Microsoft Excel® to perform statistical analyses.

BCIS 321. Introduction to Software Development and Programming
3 Credits (3)
Computer algorithm development and programming logic in the context of business information systems using current programming environments. Includes program design, data types, data structures, control structures, arrays, and principles of object-oriented programming. May be repeated up to 3 credits.
Prerequisite: C- or better in BCIS 1110; and MATH 1215.
Learning Outcomes
1. Students are proficient in Python and knowledgeable on programming.
2. Students can use programming knowledge to work on business case studies involving data.

BCIS 338. Business Information Systems I
3 Credits (3)
This course covers the business and managerial applications/ implications of management information systems (MIS) and an introduction to business analytics. In doing so, the course blends technical know-how with decision-making and systems integration. Additionally, this course provides you with working knowledge of productivity software (i.e., spreadsheet software).
Prerequisite: BCIS 1110 or consent of instructor.
Learning Outcomes
1. Students can explain how information systems and business analytics are used in business.
2. Students can construct intermediate and Advance levels of Excel spreadsheet application.
3. Students can construct intermediate-level O365 Cloud applications, Databases, and Collaborations.
4. Students can describe what business professionals need to know about computer hardware/Software/Security/Social Media and Business Intelligent.
5. Students can describe what business professionals need to know about and business processes and improvement.
6. Apply information systems viz. spreadsheet and analytics software, to solve business problems.

BCIS 350. Information Systems Analysis and Design
3 Credits (3)
An introduction to the analysis and design of secure information systems.
Prerequisite(s): Concurrently with BCIS 338 or consent of instructor.

BCIS 461. Business Analytics I
3 Credits (3)
This course provides an understanding of how organizations can utilize technology to successfully collect, organize, manipulate, use, and present data. The course blends the use of current technology with the managerial practices involving business analytics. The emphasis of the course will be on data management practices and the production of descriptive analytics. Crosslisted with: BCIS 561.
Prerequisite(s): BCIS 338 or consent of instructor.

BCIS 466. Business Analytics II
3 Credits (3)
This course provides an understanding of how organizations can build and test predictive models, utilizing business-related data to estimate model parameters. The emphasis of the course will be on utilizing data management systems to produce useful predictive analytics. Crosslisted with: BCIS 566.
Prerequisite(s): BCIS 461 or consent of the instructor.

BCIS 475. Database Management Systems
3 Credits (3)
Design, development, and use of database management systems in the business environment. Specifically, we will focus on both operational databases and analytical databases (Data Warehouse and Data Marts). Cross-listed with BCIS 575.
Prerequisite: BCIS 338 or consent of instructor.
Learning Outcomes
1. Describe fundamental database terminology and explain the primary features of database management systems.
2. Explain relational database concepts, such as primary key and referential integrity, normalization, and triggers.
3. Explain what a data model is.
4. Write SQL, the standard language of relational databases, at an advanced level.
5. Design a data model and code/implement it as a database solution using SQL.
6. Describe the fundamental concepts of Data Warehouses.
7. Design and build data warehouses.
8. Describe emergent database topics such as big data, data lakes, NoSQL.
9. Understand how a database can be used with Python programming language and MS Excel.

BCIS 480. Introduction to Cybersecurity: Exploring Computer, Network, and Data Security Principles
3 Credits (3)
This course introduces students to fundamental principles of cybersecurity and computer security. Through comprehensive exploration, students gain a deep understanding of diverse cybersecurity concepts spanning various domains. The curriculum covers essential aspects of computer security, including cryptography, authentication, access control, threat identification, counterattack strategies, and detection/prevention methods. These concepts are applied across application software, operating systems, networks, mobile apps, and databases. The course also covers securing network-based applications and network security fundamentals like TCP/IP, firewalls, intrusion detection, and vulnerability management. Ultimately, students develop a robust foundation in cybersecurity and computer security, preparing them for the digital landscape. Cross-listed with BCIS 580. May be repeated up to 3 credits.
Prerequisite: BCIS 338 or consent of instructor.
Learning Outcomes
1. Describe the key security requirement of confidentiality, integrity, and availability.
2. Discuss the types of security threats and attacks that must be dealt with and give examples of the types of threats and attacks that apply to different categories of computer and network assets.
3. Explain the fundamental security design principles.
4. Define e-commerce, understand how e-commerce differs from e-business, identify the primary technological building blocks underlying e-commerce, and recognize major current themes in e-commerce.
5. Identify and describe the unique features of e-commerce technology and discuss their business significance.
6. Understand the scope of e-commerce crime and security problems, the key dimensions of e-commerce security, and the tension between security and other values.
7. Identify the key security threats in the e-commerce environment.
8. Describe how technology helps secure Internet communications channels and protect networks, servers, and clients.

BCIS 482. Management of Information Security
3 Credits (3)
Provides management overview of information security and thorough examination of administration of information security. Surveys field of information security including planning, policy and programs, protection and people relative to information security.
Prerequisite: BCIS 338 or consent of instructor.
Learning Outcomes
1. Explain the fundamental concepts pertaining to the management of information security within the context of organizations.
2. Describe commonly used information systems (IS) security standards and guidelines.
3. Create IS security management and policy as well as risk management plans.
4. Explain the behavioral aspects of IS security and discuss the development of security culture within organizations.
5. Explain the technical aspects of IS security, including issues related to cryptography and network security.
6. Describe and evaluate the regulatory and ethical aspects of information system security (primarily within the United States and European Union context).

BCIS 485. Enterprise Resource Planning
3 Credits (3)
This course covers concepts in enterprise resource planning (ERP). Topics include how ERP integrates business processes across functional areas—such as the procurement process and the sales order process—and how businesses use ERP information systems in day-to-day operations as well as for performance monitoring.. SAP software will be utilized in multiple hand-on examples of ERP software, serving as a real-world illustration of an ERP system.
Prerequisite: C- or better in BCIS 338 or BCIS 350 or ACCT 351.
Learning Outcomes
1. Explain business processes common to most businesses--order processing, inventory management, and procurement.

2. Distinguish between master and transactional data common to most organizations.
3. Describe the cash-to-cash cycle in a production environment.
4. Explain how a business process often spans different functional areas of the business: accounting, marketing, and material management.
5. Describe how enterprise systems, such as SAP, integrate business functional areas into one enterprise-wide information system.
6. Use critical thinking to make decisions.

BCIS 490. Selected Topics
1-3 Credits
Current topics in business systems analysis. Consent of Instructor required.

BCIS 498. Independent Study
1-3 Credits
Individual studies directed by consenting faculty with prior approval of the department head. May be repeated for a maximum of 3 credits.
Prerequisites: junior or above standing and consent of instructor.

BCIS 502. Business Information Systems
3 Credits (3)
Analysis of information systems as integral parts of business organizations, including the responsibility of management to understand their capabilities and uses in handling the organization s information flow and providing appropriate information for decision making.
Prerequisite: graduate students only.

BCIS 510. AI and Machine Learning for Supply Chain Decision-Making
3 Credits (3)
This course provides an understanding of the use of artificial intelligence (AI) and machine learning (ML) in supply chain operations, focusing on data-driven decision-making. Students will apply predictive and prescriptive models to address challenges in forecasting, inventory management, customer segmentation, and sourcing, among others.
Prerequisite: Programming Foundations (either CSCI 4525 or CSCI 4520), AI Foundations (CSCI 5405, CSCI 5420 or EE 565).
Learning Outcomes
1. Understand the most common supply chain management challenges and the potential for AI to address them.
2. Apply traditional AI and ML techniques such as regression and clustering to solve supply chain problems.
3. Assess model performance in the context of the supply chain.
4. Compare customer and supplier segmentation models.
5. Develop basic AI-driven supply chain decision support tools.
6. Reflect on the ethical implications of AI/ML applications in the supply chain.
7. Understand the implications of data management on developing AI decision support tools.

BCIS 550. Information Systems Analysis and Design
3 Credits (3)
Information systems development methodologies and the system life cycle. Justifying and managing systems development projects. Not open to students who have taken BCIS 350. Students must be Graduate Students to enroll. May be repeated up to 3 credits.
Learning Outcomes
1. Describe foundations of systems development.
2. Explain systems development life cycle and key methodologies.
3. Depict how to conduct planning in systems development.
4. Determine and structure system requirements.
5. Apply principles and guidelines to design interfaces, forms and databases.
6. Understand the major issues in the systems implementation and maintenance.

BCIS 561. Business Analytics I
3 Credits (3)
This course provides an understanding of how organizations can utilize technology to successfully collect, organize, manipulate, use, and present data. The course blends the use of current technology with the managerial practices involving business analytics. The emphasis of the course will be on data management practices and the production of descriptive analytics. Not open to students who have taken BCIS 461. No S/U or audit option.
Prerequisite: BCIS 338.
Learning Outcomes
1. Identify the reasons for and the evolution of computerized support in managerial decision making.
2. Describe the business intelligence (BI) methodology and concepts.
3. Identify and explain various types of analytics.
4. Explain the nature of data in the context of BI and Business Analytics.
5. Describe statistical modeling and its relationship to business analytics.
6. Apply descriptive and inferential statistics techniques.
7. Explain the importance of data/information visualization and apply different types of visualization techniques.
8. Explain the basic concepts of data warehousing.
9. Explain data integration and the extraction, transformation, and load (ETL) processes. 1
10. Describe the essence of business performance management (BPM). 1
11. Describe balanced scorecard and Six Sigma as performance measurement systems. 1
12. Explain the objectives and benefits of data mining. 1
13. Learn the standardized data mining process. 1
14. Enhance your communication (presentation and report writing), creative thinking, problem-solving, and analytical skills.

BCIS 566. Business Analytics II
3 Credits (3)
This course provides an understanding of how organizations can build and test predictive models, utilizing business-related data to estimate model parameters. The emphasis of the course will be on utilizing data management systems to produce useful predictive analytics. Not open to students who have taken BCIS 466. No S/U or audit option.
Prerequisite: BCIS 561.
Learning Outcomes
1. Identify and explain various types of analytics.
2. Define data mining as an enabling technology for business analytics.
3. Learn the standardized data mining processes and the different methods and algorithms of data mining.
4. Build working knowledge of the existing data mining software tools.
5. Describe text analytics and understand the need for text mining.
6. Learn the process of carrying out a text mining project and the common methods for sentiment analysis.

BCIS 575. Database Management Systems
3 Credits (3)

Design, development, and use of database management systems in the business environment. Not open to students who have taken BCIS 475.
Prerequisite: BCIS 350 or BCIS 550.

Learning Outcomes

1. Describe fundamental database terminology and explain the primary features of database management systems. (Cognitive Level: Understand)
2. Explain relational database concepts, such as primary key and referential integrity, normalization, and triggers. (Cognitive Level: Understand)
3. Explain what a data model is. (Cognitive Level: Understand)
4. Write SQL--the standard language of relational databases--at an advanced level. (Cognitive Level: Apply)
5. Design a data model and code/implement it as a database solution using SQL. (Cognitive Level: Create)
6. Describe the fundamental concepts of Data Warehouses. (Cognitive Level: Understand)
7. Design and build data warehouses. (Cognitive Level: Create)
8. Describe emergent database topics such as graph databases, big data, data lakes, NoSQL. (Cognitive Level: Understand)
9. Demonstrate how a database can be used with Python programming language and MSExcel. (Cognitive Level: Apply)

BCIS 580. Introduction to Cybersecurity: Exploring Computer, Network, and Data Security Principles
3 Credits (3)

This course introduces students to fundamental principles of cybersecurity and computer security. Through comprehensive exploration, students gain a deep understanding of diverse cybersecurity concepts spanning various domains. The curriculum covers essential aspects of computer security, including cryptography, authentication, access control, threat identification, counterattack strategies, and detection/prevention methods. These concepts are applied across application software, operating systems, networks, mobile apps, and databases. The course also covers securing network-based applications and network security fundamentals like TCP/IP, firewalls, intrusion detection, and vulnerability management. Ultimately, students develop a robust foundation in cybersecurity and computer security, preparing them for the digital landscape. Not open to students who have taken BCIS 480. No S/U or audit option. May be repeated up to 3 credits.
Prerequisite: BCIS 338 or equivalent or consent of instructor.

Learning Outcomes

1. Describe the key security requirement of confidentiality, integrity, and availability.
2. Discuss the types of security threats and attacks that must be dealt with and give examples of the types of threats and attacks that apply to different categories of computer and network assets.
3. Explain the fundamental security design principles.
4. Define e-commerce, understand how e-commerce differs from e-business, identify the primary technological building blocks underlying e-commerce, and recognize major current themes in e-commerce.
5. Identify and describe the unique features of e-commerce technology and discuss their business significance.
6. Understand the scope of e-commerce crime and security problems, the key dimensions of e-commerce security, and the tension between security and other values.
7. Identify the key security threats in the e-commerce environment.
8. Describe how technology helps secure Internet communications channels and protect networks, servers, and clients.

BCIS 582. Management of Information Security
3 Credits (3)

Provides management overview of information security and thorough examination of administration of information security. Surveys field of information security including planning, policy and programs, protection and people relative to information security. Not open to students who have taken BCIS 482.
Prerequisite: BCIS 338 or equivalent or consent of instructor.

Learning Outcomes

1. Explain the fundamental concepts of the management of information security within the context of organizations.
2. Describe commonly used information systems (IS) security standards and guidelines.
3. Create IS security management and policy as well as risk management plans.
4. Explain the behavioral aspects of IS security and discuss the development of security culture within organizations.
5. Explain the technical aspects of IS security, including issues related to cryptography and network security.
6. Describe and evaluate the regulatory aspects of information system security (primarily within the United States and European Union context).

BCIS 585. Enterprise Resource Planning & Business Processes
3 Credits (3)

Enterprise-wide information systems and their use in enterprise resource planning (ERP). This course will examine the many cross-functional business processes. Other topics include ERP implementation issues, change management, and business process re-engineering. Hands-on exercises use SAP Enterprise software. Not open to students who have taken BCIS 485. May be repeated up to 3 credits.
Prerequisite: C- or better in ACCT 351 or BCIS 502.

Learning Outcomes

1. Business processes common to most businesses, including order processing, procurement, inventory management, etc.
2. How a business process often spans different functional areas of the business: accounting, marketing, etc.
3. How enterprise systems, such as SAP, integrate business functional areas into one enterprise-wide information system.
4. Process modeling to depict the sequence of tasks completed in a business process.
5. Master data common to most businesses (e.g. customer, vendor, inventory, etc.).
6. The issues involved in implementing an ERP system.

BCIS 590. Special Topics
1-3 Credits (1-3)

Seminars in selected current topics in business computer systems. May be repeated up to 3 credits.
Prerequisite(s): Vary according to topic being offered.

BCIS 598. Independent Study
1-3 Credits

Individual studies directed by consenting faculty with prior approval of department head. A maximum of 3 credits may be earned.
Prerequisite: consent of instructor.