BUSINESS TECHNOLOGY (BTE)

BTE 120. Introduction to Business Technology and Programming. 3 Credit Hours.
This Course covers the fundamentals of technology focusing on programming logic and structured programming principles including problem solving, algorithm design, and program development using Python. The course introduces the student to object-oriented programming through a study of the concepts of program specification and design, algorithm development, and coding and testing using a modern software development environment. Students learn how to write programs in an object-oriented high-level programming language (Python). Topics covered include fundamentals of algorithms, flowcharts, program solving, programming concepts, classes and methods, control structures, arrays, and strings, data structures and object-oriented programming. Throughout the semester, problem-solving skills will be stressed and applied to solving computing problems. Weekly assignments will provide hands-on experience in topics covered in this course.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 210. Fundamentals of Business Technology and Innovation. 3 Credit Hours.
This course covers the fundamental technologies used in business today. Topics include information technology platforms; enterprise technology concepts; network infrastructure; enterprise resource planning; information security; technology architectures; internet; cloud, mobile, and web platforms; analytical technologies; business intelligence; expert systems, and Big Data. Students work on an innovation project to create a specification/business canvas for a new technology product.
Requisite: Business School.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

BTE 320. Introduction to Programming. 3 Credit Hours.
This course covers the fundamentals of programming logic and structured programming principles—including problem solving, algorithm design, and program development—using a high level programming language. Topics covered include fundamentals of algorithms, flowcharts, problem solving, programming concepts, classes and methods, control structures, arrays, and strings, pointers, and data structures.
Requisite: Miami Business School or BTE Minor or CSC Major or Minor.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

BTE 324. Object-Oriented Programming. 3 Credit Hours.
This course introduces the concepts and fundamental techniques of object-oriented programming. Topics include: data abstraction, encapsulation, inheritance, polymorphism, class library, graphics/GUI, exception handling, multithreading, multimedia, files and streams, Internet applets, application development, integrated development environment, interactive program debugging and the eXtensible Markup Language (XML).
Prerequisite: BTE 320 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 360. Systems Analysis and Design. 3 Credit Hours.
This course introduces the techniques of systems analysis and design. Topics include: the Software Development Life Cycle (SDLC), Agile Programming, Extreme Programming, lean software development, Universal Modeling Language (UML), requirements modeling, data modeling, user interface design, data design, normalization, systems architectures, implementation methods, and testing methodologies.
Prerequisite: BTE 320 or CSC 120 or ECE 118 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 361. Design of Information Systems. 3 Credit Hours.
Continuation of BTE 360. Topics include concepts, tools, and techniques of systems design, prototyping, file/database design, and physical process modeling. Students work in groups to design an application system for a business related problem.
Prerequisite: BTE 360.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 389. Launching High Technology Ventures. 3 Credit Hours.
This course develops an understanding of the entrepreneurial processes as they apply to new technology ventures. Topics include: venture formation, venture and angle investments, innovation and creativity, business plan creation, human capital, ethics, and intellectual property.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 400. Web-Mobile-Cloud. 3 Credit Hours.
This course introduces the basics of the cloud computing paradigm and examines how to implement different algorithms for different web and mobile applications in the cloud. The course covers the principles, systems, and applications of cloud computing that integrate web applications, smart phones, and tablets with cloud computing infrastructure. The student will be introduced to the basics of Infrastructure, Platform, and Software as a Service (IaaS/PaaS/SaaS), as well as to cloud platforms such as Google App Engine, Microsoft Azure, and Amazon Web Services (AWS).
Prerequisite: BTE 320.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 401. Computers in an Inter-Networked Society. 3 Credit Hours.
This course provides students with fundamental knowledge of the technology and tools that integrate big data, cloud, and mobile computing within a business and social context. Students will study these technologies and their impact on socioeconomic, political, organizational, and personal environments. The course covers the cultural components of a social media society and examines the systems and processes that need to be developed for effective management of that environment.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 412. Foundations of Business Enterprise Technologies. 3 Credit Hours.
This course provides an understanding of the foundations of enterprise technologies. Topics include: making the business case for technology, distributed architectures, customer relationship management systems (CRM), enterprise resource planning systems (ERP), requirements modeling and design for enterprise systems, software development and outsourcing for the enterprise, enterprise productivity technologies (RFID, Internet of things, machine data), 3D-design technologies, cloud technologies, and technologies for the global enterprise.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 413. Big Data Strategy. 3 Credit Hours.
This course provides an introduction to the area of business intelligence termed Big Data. The concepts of high volume, velocity, and variety data are examined. The course examines how big data can be used to create business intelligence strategies in the areas of marketing, product development, systems deployment, and innovation. The course utilizes business intelligence software and Structured Query Languages (SQL) to analyze data. Other Big Data topics covered include the ethics, security, streaming data, sourcing, emergent technologies, and international data regulations.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 417. Fundamentals of Tech Project Management. 3 Credit Hours.
This course is designed to provide the fundamental project management knowledge necessary for a business manager, consultant, project manager, IT professional, and/or team member to successfully initiate and plan IT and other business projects. It is structured to provide principles, methodology, and practical information through a combination of lectures, group collaboration and hands-on exercises. Emphasis is placed on the importance of standardization and best practices as defined by the PMI's Project Management Body-of-Knowledge (PMBOK®).
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

BTE 420. Analysis of Information Systems. 3 Credit Hours.
Overview of the systems development life cycle (SDLC). Topics include concepts, tools, and techniques of systems analysis; data modeling; process modeling; CA SE tools; and the role of the systems analyst in the organization. Students will work in groups to analyze an application system for a business related problem. Prerequisite: Knowledge of a high level programming language.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 421. Design of Information Systems. 3 Credit Hours.
Continuation of BTE 420. Topics include concepts, tools, and techniques of systems design; prototyping; file/database design; and physical process modeling. Students will work in groups to design an application system for a business related problem.
Prerequisite: BTE 420.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 423. Database Management Systems. 3 Credit Hours.
This course covers the foundations of database management systems (DBMS). Topics include: database systems design, SQL, the relational model, entity-relationship modeling, distributed DBMS, object DBMS, web technology and DBMS, semi-structured data, XML, business intelligence, data warehousing, data warehousing design, introduction to OLAP, and a brief overview of data mining. Students will engage in hands-on exercises for the design and implementation of database business applications.
Prerequisite: BTE 320.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

BTE 430. Business Networks. 3 Credit Hours.
In this course, students will learn the underlying concepts and technologies in the field of business networks with specific focus on their applications in businesses. Topics covered include: network types, networking standards, protocols, and architectures; the characteristics of physical and logical networking components and technologies; the security issues that affect network systems and their implications on business applications; the technical and organizational issues concerning wireless networks; emerging networking technologies and software tools for designing and troubleshooting various aspects of networks.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 450. Introduction to Health Informatics. 3 Credit Hours.
The course develops an understanding of the role of information systems and technology within a healthcare organization. It examines the business and technical issues associated with the selection, deployment and use of health informatics, both in the clinical and back office areas. Health informatics, for the purpose of the course, is defined as the convergence of information technology, information management, and health care, at various levels, ranging from simple data gathering, to the design and implementation of new health care information systems.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 465. Web Application Development. 3 Credit Hours.
This course will explore Internet and mobile application development methodologies. Topics include: HTML 5, CSS3, scripting languages (JavaScript); jQuery, AJAX, web services, Web Servers (IIS and Apache) and relational databases (MySQL/Apache Derby/Java DB)—all the skills and tools needed to create dynamic Web-based and mobile applications. The coverage will be both on the client side and the server side of Web-based applications, and the course will provide instruction on building rich Internet applications that enhance the presentation of online content and give web applications the look and feel of desktop applications. Students in the course will build Web-based, client/server, database-intensive, multi-tier, and mobile business applications.
Prerequisite: BTE 320.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 496. Directed Studies in Business Technology. 1-3 Credit Hours.
Supervised readings, individual research project, or independent investigation of selected non-STEM related problems in the discipline. Offered only by special arrangement with supervising faculty member, who approves topic and evaluation process at time of registration.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 497. Directed Studies in Business Technology. 1-3 Credit Hours.
Supervised readings, individual research project, or independent investigation of selected STEM related problems in the discipline. Offered only by special arrangement with supervising faculty member, who approves topic and evaluation process at time of registration.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 498. Special Topics in Business Technology. 3 Credit Hours.
Special topics in selected non-STEM areas of Business Technology.
Requisite: Sophomore Standing or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 499. Special Topics in Business Technology. 3 Credit Hours.
Special topics in selected STEM areas of Business Technology.
Requisite: Sophomore Standing or Higher.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 523. Big Data Development. 3 Credit Hours.
This course covers foundational techniques and tools required for data science and big data analytics. The course delivers a thorough overview of and hands-on experience with Big Data technologies, including: Hadoop, Mapreduce, Association rules, Large scale supervised machine learning, Data streams, Clustering, NoSQL systems (Casadenra, Pig, Hive), and applications, including recommendation systems, Web, and security. Students will also examine current research and publications in Data Science/Big Data Analytics, with emphasis on systems and algorithms for large-scale advanced data analysis.
Prerequisite: BTE 320.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 524. Mobile Apps Development. 3 Credit Hours.
This course covers the fundamentals of programming logic and structured programming principles—including problem solving, algorithm design, and program development for mobile environments—with a focus the Android Platform. The course introduces the requirements and methodologies for developing dedicated and client-server applications that target smartphones, tablet computers, and other mobile devices. Topics include: memory management, communications, power systems, APIs, and among others. The techniques studied are applicable to and can be transitioned to the iOS or Windows 8 platforms.
Prerequisite: BTE 320 and BTE 324.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 535. Information Security. 3 Credit Hours.
This course introduces the principles of computer security. Information is an important strategic and operational corporate asset that needs to be protected from data breaches. This course investigates some of the security measures that can be employed to safeguard information and explores some of the tools and techniques used in designing these measures. Students will examine how system designs, network protocols, and software engineering practices can result in vulnerabilities. They will also explore how to detect and mitigate vulnerabilities in existing systems and, so, how to design and implement better future systems. Additional topics include ethical hacking, social engineering strategies, and other approaches to managing vulnerabilities.
Prerequisite: BTE 320.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 550. Business Technology Internship. 1-3 Credit Hours.
Student is individually assigned to operating business firm or other organization to gain insight in information technology practice in the area of career interest. Periodic reports and conferences are required.
Components: THI.
Grading: SUS.
Typically Offered: Offered by Announcement Only.

BTE 555. Business Technology Departmental Honors Research Project. 3 Credit Hours.
Research project to fulfill requirements for Departmental Honors in Business Technology.
Components: THI.
Grading: SUS.
Typically Offered: Offered by Announcement Only.
BTE 565. Mobile to Cloud: Developing Distributed Applications. 3 Credit Hours.
This course introduces students to the basics of the emerging cloud computing paradigm. It also examines how to implement different algorithms for different applications in the cloud and how to deploy mobile applications in the cloud. The course covers the principles, systems, and applications of mobile cloud computing that integrates smart phones and tablets with virtualized distributed computing infrastructure. Students will learn the fundamentals of a variety of systems such as virtual machines, the principles and practices of client/server architectures, the concepts and practices of Infrastructure, Platform, and Software as a Service (IaaS/PaaS/SaaS), cloud platforms such as Google App Engine, Microsoft Azure, and Amazon Web Services(AWS), as well as security issues.
Prerequisite: BTE 320 and BTE 324.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 571. AI Programming for Business Management. 3 Credit Hours.
Overview of AI programming languages and technologies. Topics include: Functional Programming, Logical Programming, Software methodologies for development of AI systems and software.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 601. Programming for Distributed Systems. 2 Credit Hours.
This course covers the fundamentals of programming logic and structured programming principles including problem solving, algorithm design, and program development using Python. The course introduces the student to object-oriented programming through a study of the concepts of program specification and design, algorithm development, and coding and testing using a modern software development environment. Students learn how to write programs in an object-oriented high-level programming language Python. Topics covered include fundamentals of algorithms, flowcharts, problem solving, programming concepts, classes and methods, control structures, strings, and data structures. Throughout the semester, problem solving skills will be stressed and applied to solving computing problems. Weekly assignments will provide hands-on experience in topics covered in this course.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 610. Foundations of Management Information Systems. 2 Credit Hours.
Course is designed to provide the foundations in management information systems information systems required to understand and effectively use an enterprise wide information system. Topics include the role of the CIO, managing Information Technology (IT) as a strategic resource, business process reengineering, IT planning, IT governance and communication, the Internet, and eBusiness.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 612. Enterprise Technologies. 2 Credit Hours.
Course addresses the needs of business students who wish to expand their understanding of information technology fundamentals. Focusing upon their use in today's enterprises, the course aims to provide students with knowledge of a variety of technological concepts commonly used in the IT Organization's systems development initiatives and enables students to understand the implications of deploying such technologies within the enterprise.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 613. Business Intelligence Technologies. 2 Credit Hours.
Course facilitates business decision makers in their understanding of data analysis tools that operate over data warehouses and 'data marts' more commonly referred to as Business Intelligence. Course focuses upon using technologies to drive effective data driven decision making through effective mining of corporate data warehouses, thus improving operational efficiency and ultimately increasing profitability. Students are exposed to the concepts, analysis techniques, data cubes, and manipulation of information extracted from a data warehouse that enables the formulation and execution of business strategies. Data analysis case studies are used to reinforce students' understanding and strategic use of results to accomplish business objectives.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 617. Information Technology Project Management. 2 Credit Hours.
Course covers the identification and development of information technology plans for projects supporting the organization’s business objectives and all activities required in the initiating, planning, executing, controlling, and closing phases of the project’s lifecycle. Course is intended to provide the body of knowledge and best practices necessary for a new Consultant, Business Analyst or Project Manager to successfully perform his/her responsibilities on a wide variety of IT enterprise projects.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 620. Database Development for High Performance Computing. 2 Credit Hours.
Course enables software developers to understand the fundamental database concepts, practice, and emerging trends in relational database design and implementation for high performance computing. Formal query languages are covered including SQL, No SQL and relational object-orientated databases are examined. Other topics include database performance tuning and query optimization, distributed database systems, administration and security.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 621. Management Information Systems. 3 Credit Hours.
Course is designed to give prospective managers a foundation in MIS sufficient to understand and effectively use information systems. Topics include types of information systems, role of MIS in organizations, CIO issues, ERP systems, and electronic commerce.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 622. High Performance Computing. 2 Credit Hours.
The course is designed to introduce HPC and Big Data Compute environments. Topics include: Cloud concepts, container concepts, distributed file systems, dockers, fundamentals of the ETL process, introduction to the Hadoop environment, Pig, Hive and JAQL, BigSQL, and SQL.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 623. Database Management Systems. 3 Credit Hours.
Course covers the fundamental concepts of database management systems using the Oracle DBMS. Topics include database theory and terminology, logical modeling, normalization, SQL language, database design and implementation, database administration, data security, database transaction/concurrency, and data backup.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

BTE 624. Mobile Apps Development. 3 Credit Hours.
The course covers the programming languages associated with the iPhone application. Topics include: memory management, communication and power systems, APIs and tools associated with application development for the mobile environment.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 630. Fundamentals of Local and Wide Area Networks. 3 Credit Hours.
Course provides the graduate student the necessary knowledge to understand the design, implementation, and services of local and wide area networks (LANs and WANs) in the business environment. Topics include signal transmission and propagation, standards and protocols, data communications media and devices, layered/encapsulated communications based on the hybrid TCP/IP-OSI standards, small and large-site PC LANs, Frame Relay, ATM, Virtual Private Networking (VPN), Telephony, Internet technologies, and network security.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 631. Computer and Network Security. 3 Credit Hours.
Protection of computers and networks against unauthorized access, access control, encryption, firewalls, proxy, digital certificates, and software security are discussed.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 635. Comp Communication Security. 3 Credit Hours.
The course covers technical and managerial aspects associated with the deployment of mobile communication platforms such as phones and tablets. The course investigates and introduces some of the security measures that can be employed to safeguard these devices and explores some of the tools used in designing these measures. Topics includes: Ethical Hacking, social engineering strategies, and other approaches to managing these vulnerabilities.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 640. Data Communications and Networking. 3 Credit Hours.
The course addresses advanced topics in computer networks from the perspective of a business decision-maker. The course begins with a focus on signal propagation, media characteristics, and digital and analog encoding techniques. It continues with a study of datalink, network, and transport layer functions as defined by the OSI and TCP/IP models. The architecture of the Internet is explored and routing algorithms for wired, wireless, and peer-to-peer networks are introduced. Course concludes with a high-level overview of the top OSI layers. After taking the class the students should be able to critically evaluate network solutions based on the capabilities and limitations of the equipment.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 646. IT Planning and Project Management. 3 Credit Hours.
The course covers the development of information technology strategic and tactical plans for projects supporting the organization's business objectives and project management as applied to planning, implementing, controlling networking, information systems and e-commerce projects. Course is intended to provide a body of knowledge necessary for a new Consultant or Project Manager to successfully initiate, plan, manage, control, and report on a variety of project types. People skills required in the areas of team selection, structure, conflict resolution, and leadership is also covered.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 650. Introduction to Health Informatics. 3 Credit Hours.
The course develops an understanding of the role of information systems and technology within a healthcare organization. It examines the business and technical issues associated with the selection, deployment and use of health informatics, both in the clinical and back office areas. Health informatics, for the purpose of the course, is defined as the convergence of information technology, information management, and health care, at various levels, ranging from simple data gathering, to the design and implementation of new health care information systems.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

BTE 665. Applied Software Project Development. 3 Credit Hours.
Advanced concepts and techniques in application project development. Topics include project management, program testing, documentation, application installation, and application maintenance. Students will work on a group project to sharpen their implementation skills. Prerequisite: CIS 223 or 226 or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

BTE 680. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 682. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 684. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.
BTE 685. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 686. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 687. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 688. Topics in Business Technology. 3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 689. Topics in Business Technology. 1-3 Credit Hours.
Topics in selected areas of specialization.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 690. Directed Study in Business Technology. 1-3 Credit Hours.
Investigation and research in special areas of interest. Offered by special arrangement.
Components: THI.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 691. Directed Study in Business Technology. 1-3 Credit Hours.
Investigation and research in special areas of interest. Offered by special arrangement.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

BTE 699. Directed Study in Business Technology. 1-3 Credit Hours.
Offered by special arrangement.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.