Department of Information Technology

Information Technology - BSIT

The department promotes Information Technology as a profession and as an academic discipline. In pursuit of the program mission, world-class educational programs prepare students for a range of careers or graduate study. IT professionals focus on meeting the needs of users within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies. They must, therefore, have a good understanding of the various information technologies and the type of activity in which the organization is involved. Our students are required to complete a series of major core courses, an internship experience, an IT specialization area, and a second discipline concentration. Students and faculty also conduct innovative research in all aspects of IT and its applications and participate in consulting and economic development activities that support the mission of Georgia Southern University.

Outcomes

Upon graduation, students with a BS in Information Technology will be able to:

• identify and define the requirements that must be satisfied to address user needs;
• analyze user requirements to design IT-based solutions;
• identify and evaluate current technologies and assess their applicability to address individual and organizational needs;
• work in project teams to develop and/or implement IT-based solutions;
• use current computing techniques, skills, and/or technologies.

The IT program is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org.

Information Technology - WebBSIT

The Georgia WebBSIT program has two primary purposes. The first purpose is to produce IT graduates with the knowledge, skills, and abilities to meet the needs of Georgia employers. The second purpose is to provide access to a BSIT education for Georgia citizens whose lifestyles make it difficult to attend face-to-face classes on campus. People who are currently working in IT, have family commitments, travel frequently, serve in the military, or simply prefer online learning now have the opportunity to earn a degree from Georgia Southern, one of the six institutions offering the WebBSIT program in Georgia. IT graduates use computer software and hardware tools and applications to develop, support, and manage the technology infrastructure within organizations.

Outcomes

Upon graduation, students with a BS in the Georgia WebBSIT will be able to:

• identify and define the requirements that must be satisfied to address user needs;
• analyze user requirements to design IT-based solutions;
• identify and evaluate current technologies and assess their applicability to address individual and organizational needs;
• work in project teams to develop and/or implement IT-based solutions;
• use current computing techniques, skills, and/or technologies.

These outcomes are in keeping with emerging program and curricular standards for IT education, as well as with the goals and outcomes of the traditional BSIT programs of the collaborating institutions.

Majors in Information Technology


Information Technology Minor


IT 1130 Introduction to Information Technology
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
An introduction to IT as an academic discipline and the structure of the BS IT degree at Georgia Southern. It also provides students with an introduction to the range of applications of Information Technology, partly through an introduction to the second disciplines available to them. Finally, it introduces students to some of the techniques that they will need for later courses, in particular databases and SQL.
Prerequisite(s): Familiarity with productivity tools.

IT 1230 Introduction to Web Technologies
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course gives non-IT majors a thorough introduction to technologies used in the creation of websites. It focuses on the basic web concepts and introduces the tools and methods for sound web design. Throughout it stresses the best practices of design and development. The course also introduces students to the principles of good human computer-interface design, including design for people with disabilities.

IT 1430 Web Page Development
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A thorough introduction to the languages used to create web pages. Throughout it stresses the importance of good coding style. The course also introduces students to the principles of good human computer interface design, including design for people with disabilities. Finally, the course introduces students to object-oriented design.
Prerequisite(s): Familiarity with productivity tools.

IT 2333 IT Infrastructure
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course allows students to develop a thorough understanding of the IT infrastructure which includes computer hardware and networks that support various IT applications, and network security. This course allows students to develop this knowledge as well as some fundamental skills in server, network system administration and management, and to become aware of the importance of information assurance and security in the design, implementation and administration of an IT Infrastructure.
Prerequisite(s): A minimum grade of “C” in all of the following: IT 1130 or CISM 2530 and prior or concurrent enrollment in STAT 2231.
IT 2430 Data Programming I
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with an introduction to the main concepts in programming including variables, expressions, statements, conditional execution, functions, iteration, strings, and files.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 1130 and IT 1430 and MATH 2130.

IT 2431 Data Programming II
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with an introduction to the main concepts in programming related to data. The course focuses on data storage and the use of regular expressions to search data. The course also includes an overview of object oriented concepts.
Prerequisite(s): A minimum grade of "C" in IT 2430 and IT 2231.

IT 3130 Web Application Design and Development I
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers design, programming, and implementation of web-based applications. Students will learn to create 3-tier (clientserver-database) web applications using sessions, cookies, and databases to store information.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 1130 and IT 1430 and STAT 2231 and MATH 2130 and prior or concurrent enrollment in MATH 1232 or MATH 1441.

IT 3131 Web Application Design and Development II
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers modern web applications using client-side programming, server-side programming, third party APIs, and database technology.
Prerequisite(s): A minimum grade of "C" in IT 3130.

IT 3132 Web Software
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A survey of advanced web software tools used in the development and deployment of web-based systems. Course content includes the use of web authoring, animation, and graphical tools.
Prerequisite(s): A minimum grade of "C" in IT 1430 or IT 1230.

IT 3230 Data Visualization
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course introduces students to the field of data visualization. The course covers basic design and evaluation principles to prepare and analyze large datasets, and standard visualization techniques for different types of data. The course prepares students to communicate clearly, efficiently, and in a visually compelling manner to a variety of audiences.
Prerequisite(s): A minimum grade of "C" in IT 3233 and STAT 2231.

IT 3233 Database Design and Implementation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with the opportunity to develop in-depth knowledge of database design, implementation, and systems development. The course covers data modeling concepts, approaches and techniques, and stages in database development processes (conceptual and logical design, implementation and maintenance). The course also covers methods and approaches used in system analysis and design, including the system development life cycle. To reinforce the course concepts, students will carry out projects based on real world situations.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 2333 and IT 3130 or IT 2430 and MATH 1232 or MATH 1441.

IT 3234 Systems Acquisition Integration and Implementation
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
A study of the system acquisition process, focusing on the use of packaged solutions. COTS (Commercial, Off-the-Shelf), SALC (System Acquisition Life Cycle), ERP (Enterprise Resource Planning), and BPR (Business Process Reengineering) will be covered.
Prerequisite(s): A minimum grade of "C" in IT 3233 and WRIT 2130.

IT 3432 Advanced Analytics Programming
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course provides students with the necessary tools and techniques to manipulate, process, clean and analyze data at an advanced level using Python. Specifically, students will use IPython, NumbPy, and pandas to load, clean, transform, visualize and analyze data.
Prerequisite(s): A minimum grade of "C" in IT 2431 and IT 3233.

IT 4130 IT Issues and Management
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Covers case studies of IT development projects to assist the student in the recognition of the need of an IT development project. The student will study and critique the development, implementation and management of both successful and unsuccessful projects.
Prerequisite(s): Prior or concurrent enrollment and a minimum grade of "C" in IT 3234.

IT 4131 Information Technology Capstone Project
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course provides students with the opportunity to develop in-depth knowledge of IT project design and implementation. The course covers the main topics of IT project management including requirements specification, project integration, scope, time, cost, quality, human resources, communications, and risk management. In addition, techniques and methods used in IT project management will be covered. To reinforce the course concepts, students will complete projects related to their specialization and/or second discipline.
Prerequisite(s): Prior or concurrent enrollment and a minimum grade of "C" in IT 3234 and Senior standing.

IT 4136 Knowledge Discovery and Data Mining
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
The course covers the process of automatically extracting valid, useful, and previously unknown information from data sources and using the information to make decisions. This course is designed to provide students with a solid understanding of the knowledge discovery process and the use of data mining concepts and tools as part of that process.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 3233 or BUSA 3131 and CISM 4134.

IT 4137 Data Science and Big Data Analytics Capstone Project
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers the process of analyzing big data sets to potentially gain actionable insights for an organization. This course provides students with a solid understanding of the life cycle approach to data analytics and the tools and techniques necessary to solve problems in big data and data analytics.
Prerequisite(s): A minimum grade of "C" in BUSA 3132 and IT 3230 and IT 3432 and IT 4136 and MGNT 3430 and STAT 2232.

IT 4234 Datacenter Management
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers datacenter infrastructure and management including technologies such as: virtualization, networking, server consolidation, green IT computing, and network storage configurations. Using virtualized platforms (hypervisors), various server, networking and infrastructure configurations are deployed, analyzed and managed. A number of server operating systems are deployed, administered and managed via remote locations. Best practices for security policies of cloud resources including permissions, privileges and server management are analyzed and performed.
Prerequisite(s): A minimum grade of "C" in CISM 3134 and IT 2333.

IT 4335 Network Architecture
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers the hardware required for interconnecting digital devices for the purpose of enabling data communication through a network. Bus architectures, ports, network cards, cabling, routers, switches. Ensuring network reliability. Optimizing network performance.
Prerequisite(s): A minimum grade of "C" in CISM 3134 and IT 2333.
Cross Listing(s): IT 4335S.
IT 4335S  Network Architecture
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers the hardware required for interconnecting digital devices for the purpose of enabling data communication through a network. Bus architectures, ports, network cards, cabling, routers, switches. Ensuring network reliability. Optimizing network performance.
Prerequisite(s): A minimum grade of "C" in CISM 3134 and IT 2333.
Cross Listing(s): IT 4335.

IT 4790  Internship in Information Technology
3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
A campus-approved and coordinated IT-experience-based internship will be required of each student. The internship will include at least 280 hours of work. A written report by the student, along with an employer evaluation of the student's work will be required.
Prerequisite(s): Permission of the Instructor.

IT 4830  Special Problems in Information Technology
3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
A customized course that is under the direction of a faculty sponsor. Special Problems is designed to offer students an opportunity to pursue studies at a level or on topics not covered in scheduled courses. The scope and nature of the material covered is determined in consultation with the faculty sponsor.
Prerequisite(s): Permission of Department Chair.

IT 4890  Directed Study in Information Technology
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Designed for independent study and research in selected areas of Information Technology under faculty supervision.
Prerequisite(s): Permission of Department Chair or Director.
Cross Listing(s): IT 4890H.

IT 4890H  Directed Study Info Tech-Honor
1-3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.
Designed for independent study and research in selected areas of Information Technology under faculty supervision.
Prerequisite(s): Permission of Department Chair or Director.
Cross Listing(s): IT 4890.

IT 5090  Selected Topics in Information Technology
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
Provides an opportunity for in-depth study of selected topics or emerging areas in information technology. Graduate students will be given an extra assignment determined by the instructor that undergraduates will not be required to do.
Prerequisite(s): Permission of Instructor.
Cross Listing(s): IT 5090G.

IT 5135  Data Analytics
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers the basic issues involved in building and populating a data mart to support the planning, designing and building of business intelligence applications and data analytics. Core concepts related to business intelligence and analytics are covered. For graduate students a significant research project will be assigned as a culminating experience.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 3233 or BUSA 3131 and CISM 4134.
Cross Listing(s): IT 5135G.

IT 5235  Advanced Web Interfaces
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course provides an introduction and application of human-computer interaction theories to web-based applications. It covers the evaluation of user interfaces using various techniques including heuristic evaluation and user testing. For graduate students a significant research project will be assigned as a culminating experience.
Prerequisite(s): A minimum grade of "C" in all of the following: IT 2430 or IT 3130 and IT 3132.
Cross Listing(s): IT 5235G, IT 5235H.

IT 5235H  Advanced Web Interfaces
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course provides an introduction and application of human-computer interaction theories to web-based applications. It covers the evaluation of user interfaces using various techniques including heuristic evaluation and user testing. For graduate students a significant research project will be assigned as a culminating experience.
Prerequisite(s): A minimum grade of "C" in IT 3130 and IT 3132.
Cross Listing(s): IT 5235, IT 5235G.

IT 5236  Mobile Web Infrastructure
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course explores the infrastructure which forms the basis of commercial, web-enabled applications on mobile and small devices, as well as personal computers. The course will focus on designing mobile web applications that provide a high level of security, reliability, scalability, and availability. Through this course, students will develop proficiencies in current web technologies employed by businesses. Graduate students will be required to complete individual advanced level research in an area beyond the scope of the undergraduate requirements that demonstrates a higher level of mastery in the subject matter with additional required deliverables representative of graduate level work, as determined by the instructor.
Prerequisite(s): A minimum grade of "C" in IT 2431 or IT 3131.
Cross Listing(s): IT 5236G.

IT 5433  Information Storage and Management
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course covers modern storage infrastructure technology and management including: challenges and solutions for data storage and data management, intelligent storage systems, storage networking, backup recovery, and archive, business continuity and disaster recovery, security and virtualization, and managing and monitoring the storage infrastructure. Best practices for security policies of cloud resources including permissions, privileges and storage management are analyzed and performed. For graduate students a significant research project will be assigned as a culminating experience.
Prerequisite(s): A minimum grade of "C" in CISM 3134 and IT 2333.
Cross Listing(s): IT 5433G.

IT 5434  Network Security Fundamentals
3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.
This course is intended to serve the needs of individuals interested in understanding the field of network security and how it relates to other areas of information technology. The course will take a broad look at network security and provide the knowledge necessary to prepare students for further study in specialized security areas or used as a capstone course to those interested in acquiring a general knowledge of the field. Graduate students will be required to complete individual advanced level research in an area beyond the scope of the undergraduate requirements that demonstrates a higher level of mastery in the subject matter with additional required deliverables representative of graduate level work, as determined by the instructor.
Prerequisite(s): A minimum grade of "C" in IT 2333 and CISM 3134.
Cross Listing(s): IT 5434G.