INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

ICT 3100 Systems Analysis and Design (4 Credits)

This course examines the systems analysis and design process from understanding what a system should do through how a system should be implemented. Topics include the System Development Life Cycle (SDLC); the roles of the Systems Analyst and Designer; an introduction to requirements gathering, including identifying user stories, use cases, use of modeling tools; and system design, user interface design, and database design. The course encourages interpersonal skill development with clients, users, and personnel involved in development, operation, and maintenance of a system. Quality issues such as software testing, configuration management, quality management, and process improvement are addressed throughout the course.

ICT 3200 Cybersecurity (4 Credits)

Given the constant increase of global technology usage, coupled with an escalation of threats to those systems, cybersecurity is a crucial practice for every learner to understand. This course will provide students with a fundamental overview of cybersecurity, including a set of basic skills needed to evaluate, remediate, and defend against risks within a technological environment. Additionally, students will gain the knowledge required to develop security plans for technological frameworks that are used personally and in organizations. This course is designed for students with varying cybersecurity experience and will empower them to acquire and maintain a strong security posture in their personal and professional lives. From those tasked with building new IT infrastructures to those managing marketing teams, this class will teach students how to best leverage cybersecurity for a safer digital community.

ICT 3300 Programming and Data Structures (4 Credits)

This course provides a first exposure to algorithms and fundamental data structures. Working "hands-on" with an integrated development environment, students learn to write and modify code in a widely used contemporary programming language, and discover how their acquired programming skills contribute to the plans, designs, implementations, tests, and maintenance of software solutions. Emphasis is placed on language syntax and structure, data types, arrays, Boolean logic, and functions. The course progresses to topics such as indirection, list and tree structures, object-oriented programming, application programming interfaces, and simple user interfaces.

ICT 3350 Software Development (4 Credits)

This course offers a streamlined journey through the essential stages of software development. Students will delve into the art of translating product requirements into actionable designs, followed by bringing those designs to life through fundamental programming practices. Throughout the course, students will use of version control systems to maintain a well-organized codebase and explore communication tools vital for team collaboration. The course also covers the deployment of code to live servers, and equips students with strategies for monitoring software performance. This enables them to proactively optimize functionality, troubleshoot issues, and refine their products based on user feedback.

ICT 3400 Database Fundamentals (4 Credits)

This course introduces databases and database system concepts. The material covers information systems design and implementation within a database management system environment. Incorporating lecture content and lab exercises, this course gives students a solid comprehension of the benefits and limitations of databases, while allowing them to get hands-on experience building a user interface to an existing database. All application development will be done in a graphical environment, using a popular desktop database workbench. File processing issues will also be introduced. Prerequisites: ICT 3100, ICT 3300, or equivalent experience.

ICT 3450 Emerging Professional Concepts (4 Credits)

New ideas arise in the technology sector almost daily. This course is designed to focus on emerging professional concepts that are timely, relevant, and forward-thinking. The course topics will change as trends emerge. Students will research, write, and present about the special topic in context.

ICT 3500 Web Fundamentals (4 Credits)

This course explores the fundamental development techniques of web page design using Hypertext Markup Language (HTML). Students learn how to create fully functional web pages by utilizing web fundamentals and best practices, including: how to effectively create layouts, use graphics, create hyperlinks, and use text formatting features of HTML. In addition, students are introduced to the use of cascading style sheets (CSS) to enhance the look of web pages. To better prepare students for evolving web standards, the course introduces students to the new HTML5 specifications and CSS3 features.

ICT 3800 Network and Internet Fundamentals (4 Credits)

This course covers networking and Internet technologies, hardware, software, and network communications protocols. Students gain knowledge of networking and telecommunications fundamentals including Local and Wide Area Networks, wireless communications, and the Internet. The core of the TCP/IP protocol suite is explored. Voice and data communication concepts, models, standards, and protocols are studied. Students learn about the ramifications of network characteristics such as throughput, latency and jitter on applications and the user experience. Students are introduced to the process of evaluation, selection, and implementation of different communication options within an organization.

ICT 3950 Field Experience in Information Technology (4 Credits)

This course is an experiential learning collaboration between a student, a faculty advisor, and a professional supervisor, offering students an opportunity to apply their content knowledge to a professional setting. Students will integrate academic theory with practical experience in a professional field of interest. Additional site-specific learning outcomes are established in conjunction with the site supervisor.

ICT 3980 Information Technology Internship (0-4 Credits)

Students will use their internships to integrate knowledge and theory learned in the classroom with practical application and skills development in a professional setting. Independent work products will be created.