INFORMATION TECHNOLOGY

Office: University College Student Support Center
Mail Code: 2211 S. Josephine St. Denver, CO 80208
Phone: 303-871-2291, 800-347-2042
Email: ucolsupport@du.edu
Web Site: http://www.universitycollege.du.edu

Students pursuing the information technology major expand their fundamental technology knowledge and take their IT careers to the next level at University College, where classes are designed and delivered for busy adults.

A technology degree, offered as hybrid and/or online, allows students to explore and develop practical skills in systems analysis and design, networking, and web design and programming. Whether currently working in the information technology field, or aspiring to, the hands-on instruction and interdisciplinary approach provide students with the skills necessary to thrive in the IT industry.

Students who major in information technology will be well-prepared to apply for the Information and Communications Technology (ICT) master’s program offered by University College, as the undergraduate major provides the fundamental building blocks for a technology career or further study of ICT at the graduate level. Bachelor’s completion students complete an information technology integrative project that expands their fundamental knowledge, or allows them to further explore the field through research and writing.

This degree prepares students to:

- Demonstrate effective and persuasive oral, written, and non-verbal communication techniques using tone, and principles appropriate to the audience
- Apply information technology theory and principles and formulate arguments in writing and speaking that contain a clear purpose, well organized, relevant content, and a conclusion that directly reflects the purpose and strength of the content
- Plan, create, assess, and evaluate effective web design using current web development tools, written evaluations, and design projects
- Distinguish, reproduce, and employ informational technology programming skills using web and non-web-based practical projects, program analysis, and project management techniques
- Quantify data, analyze trends and exceptions, and establish the reliability of conclusions within an information technology framework

Information Technology

Bachelor of Arts Major Requirements
(180 credits required for the degree) (http://bulletin.du.edu/undergraduate/undergraduateprograms/universitycollegeofartscompletionprogram/degreetanddegerequirements/bachelorofartsba)

<table>
<thead>
<tr>
<th>Major Courses (40 credits)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 3050</td>
<td>4</td>
</tr>
<tr>
<td>ICT 3100</td>
<td>4</td>
</tr>
<tr>
<td>ICT 3300</td>
<td>4</td>
</tr>
<tr>
<td>ICT 3400</td>
<td>4</td>
</tr>
<tr>
<td>ICT 3500</td>
<td>4</td>
</tr>
<tr>
<td>ICT 3800</td>
<td>4</td>
</tr>
<tr>
<td>BACP 3350</td>
<td>4</td>
</tr>
<tr>
<td>BACP 3400</td>
<td>4</td>
</tr>
<tr>
<td>BACP 3450</td>
<td>4</td>
</tr>
<tr>
<td>BACP 3500</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>
Courses

ICT 3000 Fundamentals of Information Systems (4 Credits)
This course provides an introduction to systems and development concepts, information technology, and application software. It includes explanations of how information is used in organizations and how IT enables improvement in quality, timeliness, and competitive advantage. Students learn the differences between personal productivity software and organizational information systems centered on databases and shared content. Coverage includes quality, systems theory, decision-making, and the organizational role of information systems. Organizational uses of information technology including computing and telecommunications systems are stressed. Concepts of organizations, information systems growth, and process improvement are introduced. No prerequisite. Please note that 3000-level courses at University College cannot be used to satisfy graduate-level certificate or degree requirements.

ICT 3100 Systems Analysis and Design (4 Credits)
This course examines the system development and change process, the software life cycle, including adherence to a methodological life cycle, and project management for software projects. Topics include software development paradigms, system engineering, use of modeling tools, function-based analysis and design, object-oriented analysis and design, testing, and documenting software systems. The course emphasizes the factors essential for effective communication and integration between users and systems. It encourages interpersonal skill development with clients, users, and others associated with development, operation, and maintenance of the system. Software quality issues are also considered: software testing, configuration management, quality management, process improvement and software maintenance. Students conduct a hands-on use case exercise and write a Software Development Plan. Please note that 3000-level courses at University College cannot be used to satisfy graduate-level certificate or degree requirements.

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 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 both 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 is done in a graphical environment, using a popular desktop database workbench. Selected file processing issues are also introduced. Please note that 3000-level courses at University College cannot be used to satisfy graduate-level certificate or degree requirements.

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.