BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY (COMPETENCY-BASED)

Colleges and universities traditionally award credit for classroom hours attended, conferring degrees based on students’ completion of a certain set of courses for a given number of credit hours. The focus of a competency-based program is on the mastery of student learning outcomes – what they know and can do – rather than on how many hours, semesters, or years a student spends in school. A competency-based program allows students to demonstrate through assessments that they have acquired the set of competencies (levels of knowledge, skill, or ability) required for a particular degree including general education and the major. Some students have often acquired many of the knowledge, skills and abilities necessary for a degree through their life or previous work experience. Brandman University's competency-based BSIT program allows students to prove their competency through assessments thereby reducing the time needed to earn a degree.

This program of study emphasizes the foundations of Information Technology (IT) and the latest practical technologies. Students interested in working in the areas of IT analysis and design, network administration, information security management and/or IT project management would benefit from this degree program.

The quality focus of this degree program requires students to demonstrate mastery of all competencies required for the BS IT degree.

In addition to core course requirements derived from identified employer needs, the BSIT offers an Information Technology Generalist and Data Science emphasis area.

BSIT Mission

The Bachelor of Science in Information Technology (BSIT) prepares students for career opportunities, advancement, participation and service in a variety of 21st century IT specializations.

Brandman University Institutional Learning Outcomes

The Brandman University competencies are based on the American Association of Colleges and Universities (AAC&U) Liberal Education and America's Promise (LEAP) Essential Learning Outcomes and the Lumina Degree Qualifications Profile (DQP). Of special importance in the framing of the DQP was recognition of graduates’ need to prepare for jobs that are rapidly changing in today's contemporary workplace. The DQP framework provided Brandman a basis for establishing 21st century competencies for all of our baccalaureate students. As a result, the following Brandman institutional learning outcomes are threaded throughout the Brandman Competency-Based BBA program with a strong foundation built into the general education domain:

- **Applied Learning**: Design a project, paper, performance, or other appropriate task linking knowledge skills from work, experiential learning, or community activities with knowledge acquired in academic disciplines.
- **Innovation and Creativity**: Construct a novel or unique idea, question, format, or product.

- **Civic Engagement**: Describe insights gained from engaging physically and/or intellectually with activities of personal and public concern that are both individually life enriching and socially beneficial to the community.
- **Global Cultures**: Explain the relationship between a global issue and the history, values, politics, economy, communication styles, or beliefs and practices of one or more cultures affected by that issue.
- **Integrated Learning**: Devise connections among experiences inside and outside the formal classroom, or connections among multiple fields of study.

BS in Information Technology Program Learning Outcomes

- **Interpersonal Skills**: Demonstrate written and oral communication skills in collaborative environments.
- **Problem Solving**: Apply current IT tools and techniques to solve multi-faceted technological issues.
- **Professionalism and Ethics**: Engage in IT professional, ethical, legal, and social responsibilities and practices.
- **IT Integration**: Apply IT best practices and standards to integrate systems to address a business need.
- **Information Assurance**: Employ current information assurance principles to manage risk.

Orientation:

ORIC 100 Orientation

Gain familiarity with Brandman University’s MyPath and explore strategies to succeed in the program.

Completion is required prior to graduation.

Degree Requirements

The BS in Information Technology consists of three major components or domains:

1. General Education (13 Competencies)
2. Information Technology (IT) Core (18 Competencies)
3. Emphasis Areas: Data Science; Information Technology Generalist (8 Competencies)

I. DOMAIN: General Education

The General Education Requirements at Brandman University provides the liberal arts tradition the intellectual foundation that enables students to expand their perspectives beyond the focus of a major. Brandman University graduates will be intellectually flexible, creative, articulate, and prepared for active and life-long participation in the knowledge-based world of 21st century. The Brandman University General Education requirements are comprised of 6 Subdomains and 13 Competencies:

SUBDOMAIN: Communications

COMC 410 Interpersonal Communications
Understand the skills required to interact effectively with others.

COMC 101 Oral Communications
Deliver a well-organized oral presentation using delivery techniques and supporting materials appropriate for the audience

ENGC 103 Written Communications Level A
Identify and apply key components of effective writing skills and APA.
ENGC 104 Written Communications Level B
Compose written arguments that are coherent, grammatically correct, and rhetorically aware.

**SUBDOMAIN: Humanities**
PHLC 110 Creative and Critical Thinking
Develop a creative solution to a historical, social, ethnic, economic, technological, and/or geographic problem.

HUMC 110 Disciplinary Relationships
Analyze relationships between disciplines such as history, literature, religion, philosophy, and the fine arts.

HUMC 115 Human Experience
Analyze the ways in which the human experience is influenced by historical, social, ethnic, economic, technological, and/or geographic contexts.

**SUBDOMAIN: Information Literacy**
LBSC 320 Information Literacy Level A
Evaluate and cite various information resources to understand ethical research practices.

LBSC 321 Information Literacy Level B
Apply academic research practices to complete an academic research project.

**SUBDOMAIN: Natural Sciences**
NSCC 115 Methods and Applications
Apply the principles, concepts, and methods of the natural sciences.

NSCC 111 Principles and Concepts, Level A
Understand the Scientific Method as a process and master the fundamental principles, concepts, and methods of biology.

NSCC 112 Principles & Concepts Level B
Master the fundamental principles, concepts, and methods of chemistry and environmental science.

**SUBDOMAIN: Quantitative Reasoning**
MATC 203 Quantitative Fluency, Level B
Apply the concepts of statistical reasoning, data analysis, modeling, and interpretation.

MATC 103 Quantitative Literacy, Level A
Explain accurate calculations and symbolic operations used to interpret social and economic trends.

**SUBDOMAIN: Social Sciences**
SOSC 110 Behavior and Cognition
Evaluate individual, organizational, and social behavior.

SOSC 115 Social Systems
Using a social systems perspective, investigate global problems and develop possible solutions.

II. DOMAIN: Information Technology Core
The Brandman University Information Technology Core requirements are comprised of 4 Subdomains and 18 Competencies.

**SUBDOMAIN: Information Technology Foundations**
CSCC 251 Computer Systems Architecture
Demonstrate an understanding of computer systems architecture.

CSCC 408 Database
Demonstrate an understanding of database systems, their applications and tools used to develop databases.

CSCC 200 Fundamentals of Information Technology
Develop an understanding of information technology fundamentals

CSCC 353 Networking
Demonstrate an understanding of networks, and create a network.

CSCC 270 Security
Demonstrate an understanding of information system security, applications, and the tools used.

**SUBDOMAIN: Information Technology Management**
OLCC 350 Ethics and Social Responsibility
Describe the importance of ethical principles and social responsibility to business decisions.

OLCC 363 Data and Information Management
Utilized industry best practices to manage and organize organization data and information.

OLCC 355 Organizational Dynamics
Demonstrate an understanding of the impact organizational dynamics has on performance.

CSCC 315 Organizations, Management, and the Networked Enterprise
Demonstrate an understanding of information systems in global business.

OLCC 414 Team Building
Demonstrate an understanding of the importance of team dynamics to organizational effectiveness, productivity, and communication within an organization.

**SUBDOMAIN: Information Technology Operations**
MATC 251 Discrete Mathematics
Identify fundamental concepts of discrete mathematics as they apply to computer programming techniques.

CSCC 497 Information Technology Capstone
Design an information technology solution for an enterprise-wide organizational need.

CSCC 361 Operating Systems
Troubleshoot and utilize modern operating systems in a variety of business settings.

CSCC 383 Applied Project Management
Create a project management plan using applications and tools including GIS.

CSCC 410 Systems Analysis and Design
Demonstrate an understanding of systems analysis and design, applications and tools used.

**SUBDOMAIN: Software Development**
CSCC 362 Fundamentals of Software Development
Recognize appropriate programming constructs utilized in the building, testing, and debugging of software programs.

CSCC 470 Mobile Development Fundamentals
Develop and deploy an effective mobile based program for the web and mobile devices.

CSCC 360 Web Design Technologies
Utilize web development foundations and standards in the design, development and deployment of interactive web content.
III. DOMAIN: EMPHASIS AREAS:

Data Science Emphasis
The Brandman University Data Science Emphasis requirements are comprised of 4 Subdomains and 8 Competencies.

SUBDOMAIN: Information Technology Foundations
CSCC 301 Introduction to Programming
Develop basic designing, coding, and documenting skills in a programming language.

SUBDOMAIN: Information Technology Management
CSCC 363 Data and Information Management
Utilize industry best practices to manage and organize organizational data and information.

SUBDOMAIN: Information Technology Operations
CSCC 306 Machine Learning
Utilize data while applying a machine learning lens to diverse businesses and industries.

SUBDOMAIN: Data Analysis
CSCC 304 Spatial Visualization and Data Analytics
Create spatial visualizations based on the data type and analysis outcomes.

CSCC 420 Database Querying and Reporting
Develop database queries to manage tables and data using common SQL commands.

SUBDOMAIN: Leadership
HRCC 430 Conflict Management
Develop and apply conflict management skills in an organizational setting.

OLCC 325 Personal Leadership
Develop a personal philosophy of leadership through a personal assessment, and focused on personal and professional development.

SUBDOMAIN: Server Management
CSCC 475 Cloud Computing
Employ industry best practices in the development, maintenance, and deployment of cloud computing and virtualization technologies.

CSCC 476 Server & Desktop Virtualization
Utilize server virtualization technologies in the implementation and maintenance of virtualized desktops, servers, and network infrastructures.

CSCC 364 Server Administration
Use server administration techniques in the installation and maintenance of network infrastructure and directory services.

Credit for Industry Standard Information Technology Certification(s)
Brandman University accepts the following industry standard certification examinations for college credit in the competency based Bachelor of Science in Information Technology degree program:

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<th>Industry Standard Certification</th>
<th>Substitution Course</th>
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<tr>
<td>CompTIA IT Fundamentals</td>
<td>CSCC 200</td>
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<td>MTA Database Fundamentals Topics</td>
<td>CSCC 408</td>
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<td>CompTIA A+ 220-901</td>
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<tr>
<td>CompTIA A+ 220-902</td>
<td>CSCC 361</td>
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<td>MTA Software Development Fundamentals</td>
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<td>CIW Web Foundations Associate</td>
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<td>CIW Database Design Specialist</td>
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<td>CompTIA Projects+</td>
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<td>CompTIA Network+ Exam</td>
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<td>Windows Server Admin Fundamentals</td>
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<tr>
<td>CompTIA Security+</td>
<td>CSCC 270</td>
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<td>MCP: Server Virtualization</td>
<td>CSCC 476</td>
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<tr>
<td>MCP: Querying Microsoft SQL Server 2012</td>
<td>CSCC 420</td>
</tr>
<tr>
<td>MTA HTMLS Application Dev Fundamentals</td>
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