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. University of Massachusetts Global'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.

University of Massachusetts Global Institutional Learning Outcomes

The University of Massachusetts Global 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 University of Massachusetts Global a basis for establishing 21st century competencies for all of our baccalaureate students. As a result, the following University of Massachusetts Global institutional learning outcomes are threaded throughout the University of Massachusetts Global 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 and Student Success Skills:

LBSC 100 Student Success Strategies: Develop a personalized student success plan by applying relevant resources and strategies.

Completion of LBSC 100 is required prior to the seventh month of competency coursework for students admitted without a cumulative GPA of 2.0 or higher for courses from regionally accredited institutions, and/or without twelve (12) or more transferable credits. Completion of LBSC 100 is required prior to graduation for all other students.

In addition, all students are encouraged to complete the optional **ORIC 100** orientation competency prior to their seventh month of competency coursework.

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, Self Design Emphasis (6 Competencies)

I. DOMAIN: General Education

The General Education Requirements at University of Massachusetts Global provides the liberal arts tradition the intellectual foundation that enables students to expand their perspectives beyond the focus of a major. University of Massachusetts Global graduates will be intellectually flexible, creative, articulate, and prepared for active and life-long participation in the knowledge-based world of 21st century. The University of Massachusetts Global 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 (Cannot be satisfied in transfer)
Evaluate and cite various information resources to understand ethical research practices.

LBSC 321 Information Literacy, Level B (Cannot be satisfied in transfer)
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 and 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 University of Massachusetts Global 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.

CSCC 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 University of Massachusetts Global Data Science Emphasis requirements are comprised of 4 Subdomains and 6 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 364 Server Administration
Use server administration techniques in the installation and maintenance of network infrastructure and director services.

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.

CSCC 478 Business Intelligence and Data Analytics
Transform data into meaningful and useful information for business analysis and reporting needs.

Information Technology Generalist Emphasis
The University of Massachusetts Global Information Technology Generalist Emphasis requirements are comprised of 2 Subdomains and 6 Competencies.

SUBDOMAIN: Data Analysis

CSCC 477 Advanced Database Querying and Analytics
Utilize advanced administration techniques to manage database design, security, and architecture.

CSCC 478 Business Intelligence and Data Analytics
Transform data into meaningful and useful information for business analysis and reporting needs.

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

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 and 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.

Self Design Emphasis
Information Technology Self Design Emphasis

The purpose of the Information Technology Self Design emphasis is to serve students who wish to design an Information Technology emphasis with customized focus areas. This program provides students with the flexibility to take coursework in multiple Information Technology related disciplines. The Information Technology Self Design Emphasis consists of 18 equivalent credits.

Credit for Industry Standard Information Technology Certification(s)

University of Massachusetts Global accepts the following industry standard certification examinations for college credit in the competency based Bachelor of Science in Information Technology degree program:

Industry Standard Certification	Substitution Course
CompTIA IT Fundamentals	CSCC 200
MTA Database Fundamentals Topics	CSCC 408
CompTIA A+ 220-901	CSCC 251
CompTIA A+ 220-902	CSCC 361
MTA Software Development Fundamentals	CSCC 362
CIW Web Foundations Associate	CSCC 360
CIW Database Design Specialist	CSCC 363
CompTIA Projects+	CSCC 383
CompTIA Network+ Exam	CSCC 353
Windows Server Admin Fundamentals	CSCC 364
CompTIA Security+	CSCC 270
MCP. Server Virtualization	CSCC 476
MCP.Querying Microsoft SQL Server 2012	CSCC 420
MTA HTMLS Application Dev Fundamentals	CSCC 470