

# Bachelor of Science in Information Technology

The Bachelor of Science in Information Technology is designed to produce academically sound and functionally competent IT professionals who can build and deploy networks, databases, web properties, and other IT-related assets. Core programming skills along with problem-solving skills and techniques are offered to help bring you a well-rounded technology education. Additional concentrations allow you to choose from dozens of specific courses in order to specialize in the IT area of interest for you. IT personnel are needed in all industries, and this online bachelor's program helps prepare you for a variety of possible careers including programmer, systems analyst, project manager, web developer, database designer, and more.

Coursework in this program also meets various industry certifications including Certified Internet Webmaster (CIW®). Please view course descriptions for complete details.

CIW® is a registered trademark of Certification Partners, LLC.

## Degree Program Objectives

In addition to the institutional and degree level learning objectives, graduates of this program are expected to achieve these learning outcomes:

- Assess the significance of the system development life cycle and its effectiveness.
- Build a software program with software quality and reusability using the principles and concepts of Object-Oriented Programming (OOP).
- Design a network that incorporates the principles of network technologies.
- Design a database that applies the fundamentals of database management systems.
- Analyze the computer and network security issues, policies, proactive measures, and software tools to counter security breaches and threats.
- Apply industry driven techniques for designing, developing, deploying, and securing enterprise applications on the desktop and on the Web.
- Demonstrate use of analytical, logical, and critical thinking to design, develop, and deploy effective Information Technology solutions.

## Degree at a Glance

Code	Title	Semester Hours
	General Education Requirements	30
	Major Required	42
	Select one of the following concentrations:	15
	General Concentration (p. 3)	
	Multi-tier Architecture Approach (p. 3)	
	Programming (p. 3)	
	Project Management (p. 4)	
	Final Program Requirements	3
	Elective Requirements	30
Total Semester Hours		120

## Degree Program Requirements

### General Education Requirements (30 semester hours)

Code	Title	Semester Hours
<b>Arts and Humanities (6 semester hours)</b>		
STEM270	Thinking and Acting Ethically	3
Select 1 course from the following: <sup>1</sup>		3
ARAB100	Arabic I	
ARAB101	Arabic II	
ARTH200	Art Appreciation	
ARTH240	Survey of Photography	
ARTH241	Film and Literature	
DSIN141	Image Enhancement using Adobe Photoshop®	
FREN100	French I	
FREN101	French II	
GERM100	German I	
GERM101	German II	
JAPN100	Introduction to Japanese	
LITR215	Literature of American Encounters, Revolution, and Rebellion	
LITR218	From Abolition to #MeToo: Literature of the American Civil Rights Movement	
LITR222	Pivotal Figures in Early British Literature	
LITR225	British Literature from Wordsworth through the Wasteland	
LITR231	Leadership in World Literature: Antiquity to the Early Modern Period	

LITR233	Literature of the Newly Globalized World: The Individual's Struggle to Adapt	
MUSI200	Music Appreciation	
MUSI212	Jazz and Rock	
MUSI250	World Music and Cultures	
PHIL101	Introduction to Philosophy	
PHIL110	Critical Thinking	
PHIL200	Introduction to Ethics	
PHIL202	Philosophy of Science	
PORT100	Introduction to Brazilian Portuguese	
RELS101	Introduction to the Study of Religion	
RELS201	Introduction to World Religions	
RUSS100	Russian I	
SPAN100	Spanish I	
SPAN101	Spanish II	
<b>Civics, Political and Social Sciences (6 semester hours)</b>		
STEM280	Exploring Society and Cultures via Science Fiction	3
Select 1 courses from the following: <sup>1</sup>		3
ANTH100	Introduction to Anthropology	
ANTH202	Introduction to Cultural Anthropology	
CHFD220	Human Sexuality	
COMM211	Social Media and Society	
COMM240	Intercultural Communication	
ECON101	Microeconomics	
ECON102	Macroeconomics	
EDUC200	Humane Education: A Global Interdisciplinary Perspective	
GEOG101	Introduction to Geography	
HOSP110	Practical Food Safety and Awareness	
IRLS210	International Relations I	
LITR212	Forgotten America—Under Represented Cultures in American Literature	
LITR235	Four Points of the Compass: Culture and Society Around the World	
POLS101	Introduction to Political Science	
POLS210	American Government I	
PSYC101	Introduction to Psychology	
RELS250	Death and Dying	
RELS260	Race & Religion	
RELS270	Hope and Resilience	
SOCI111	Introduction to Sociology	
SOCI212	Social Problems	
SOCI220	American Popular Culture	

**Communication: Writing, Oral, and Multimedia (9 semester hours)**

COMM120	Information and Digital Literacy	3
ENGL110	Making Writing Relevant	3
ITCC231	Introduction to Information Technology Writing	3
<b>History</b>		
STEM185	The History and Context of STEM	3
<b>Mathematics and Applied Reasoning (3 semester hours)</b>		
ENTD200	Fundamentals of Programming	3
<b>Natural Sciences (3 semester hours)</b>		
STEM100	Introduction to STEM Disciplines	3
Total Semester Hours		30

<sup>1</sup> All literature courses require successful completion of ENGL101 - Proficiency in Writing or ENGL110 - Making Writing Relevant.

**Major Required (42 semester hours)**

Code	Title	Semester Hours
HRMT101	Human Relations Communication	3
ITCC121	Introduction to Computer Science	3
ENTD120	User Experience I	3
WEBD122	Introduction to Web Analytics	3
WEBD121	Web Development Fundamentals	3
ENTD220	Introduction to Python®	3
ISSC231	Networking Concepts	3
INFO222	Database Concepts	3
ISSC290	Securing Databases	3
ENTD268	Information System Design	3
ENTD278	Object Oriented Design	3
ISSC297	Securing Applications	3
STEM380	Coevolution of Society, Culture, and Technology	3
Select 1 course from the following:		3
STEM470	Cybersecurity, Surveillance, Privacy and Ethics	
STEM471	Analytics, Algorithms, AI, and Humanity	
Total Semester Hours		42

Students must choose a concentration for this degree program and may select from a General Concentration, Concentration in Multi-tier Architecture Approach, Concentration in Programming, or Concentration in Project Management.

## General Concentration Requirements (15 semester hours)

Code	Title	Semester Hours
WEBD221	Intermediate Web Development	3
WEBD241	Web Development Using JavaScript®	3
INFO331	Management Information Systems	3
ISSC422	Information Security	3
ISSC221	Intermediate Computer Systems	3
Total Semester Hours		15

## Concentration in Multi-tier Architecture Approach (15 semester hours)

The concentration offers an in-depth understanding of a multi-tier architecture approach to applying more productive skills and techniques when replacing or upgrading independent tiers within a system without impacting other critical layers. You will develop the knowledge and skills used to redevelop or modernize various layers associated with the user interface, business logic, and data storage. You will learn how to optimize front-end web server requirements and address back-end database or data storage concerns efficiently, while maintaining presentation, application processing, and data management functions.

### Objectives

Upon successful completion of this concentration, the student will be able to:

- Explain the principles and practices applicable to multi-tier architecture approach.
- Analyze guidelines and techniques associated with building computer architecture more effectively.
- Design software based on presentation, application and data layer.
- Develop software application functionalities such as HTML, JavaScript®, jQuery®, SQL, Python® and other critical programming languages.
- Apply information technology architecture strategies.

JavaScript® is a registered trademark of Oracle America, Inc.

jQuery® is a registered trademark of OpenJS Foundation.

Python® is a registered trademark of the Python Software Foundation.

## Concentration Requirements (15 semester hours)

Code	Title	Semester Hours
WEBD221	Intermediate Web Development	3
WEBD241	Web Development Using JavaScript®	3
INFO221	Relational Database Concepts	3
ENTD320	Intermediate Python® Programming	3
WEBD343	jQuery	3
Total Semester Hours		15

## Concentration in Programming (15 semester hours)

The purpose of this concentration is to build a stronger foundation in Object Oriented Programming using Java programming. As the technology field shifts, the curriculum must embrace the changes in technology to appropriately equip students with marketable skills. There has been a substantial growth in application software development as companies seek customized applications to address their requirements. According to the U.S. Bureau of Labor Statistics, employment of computer programmer is expected to grow by eight percent between now and the year 2022. Java is one of the most highly recommended programming languages for students to learn. It serves as a primary language for building mobile apps, games, and enterprise software and works across multiple platforms.

### Objectives

Upon successful completion of this concentration, the student will be able to:

- Explain the principles and practices applicable to programming in Java.
- Analyze guidelines and techniques associated with object-oriented programming using Java.
- Summarize the growing trends of software development and how it is transforming businesses.
- Apply object-oriented programming using Java programming language.
- Build software programs using Java programming language.

## Concentration Requirements (15 semester hours)

Code	Title	Semester Hours
ENTD261	Scripting Languages for the Administrator	3
ENTD380	Introduction to Object Oriented Programming with Java®	3
ENTD381	Object Oriented Programming With Java®	3

ENTD481	Enterprise Development using J2EE	3
ENTD411	Application Development	3
Total Semester Hours		15

## Concentration in Project Management (15 semester hours)

This concentration addresses the processes and goals of project management. It explores realistic application of project management process using project management strategies, tactics, and software. Other vital concepts and principles, such as negotiation techniques affecting how governments and organizations think about project management, are also examined. This concentration also expands on the processes and goals of negotiation. It explores a basic understanding of negotiation and the fundamentals of reaching an agreement while maintaining mutual gains. It helps you become more effective in delivering win-win agreements and distinguishing the differences between integrative negotiation and distributive bargaining when selecting the appropriate strategy for a project. This concentration builds your skills and abilities to initiate, plan, execute, monitor, control, and close projects. The concentration also focuses on quality delivery and the monitoring of risks in government and private sector contracting and acquisition activities.

### Objectives

Upon successful completion of this concentration, the student will be able to:

- Identify the models and strategies of project management.
- Explain the use of project management tools in an organization.
- Interpret the different techniques of project management.
- Apply effective strategies of project management in negotiating.

### Concentration Requirements (15 semester hours)

Code	Title	Semester Hours
ITMG221	IT Project Management	3
ITMG222	IT Project Management Using MS Project®	3
HRMT300	Negotiation I	3
DEFM200	Fundamentals of Contracting and Acquisition	3
ITMG421	Virtual Management	3
Total Semester Hours		15

## Final Program Requirements (3 semester hours)

Code	Title	Semester Hours
INFO498	Information Technology: Capstone (to be taken as the last course before graduation) <sup>1</sup>	3
Total Semester Hours		3

<sup>1</sup> Prerequisite: ENGL101 - Proficiency in Writing or ENGL110 - Making Writing Relevant and Senior Standing and completion of all major courses prior to enrollment.

## Elective Requirements (30 semester hours)

Code	Title	Semester Hours
Select any courses not already taken to fulfill the requirements listed above. Credits applied toward a minor or certificate in an unrelated field may be used to fulfill elective credit for the major.		30
Total Semester Hours		30