

# COMPUTER TECHNOLOGIES

## COMPUTER PROGRAMMING AND DEVELOPMENT

### Computer Programming and Development Degree - A25590CP

-Day and Evening

This curriculum prepares learners to design and develop desktop and web applications. Graduates will be proficient in Java, MVC, REST, unit testing, server-side JavaScript, and SQL. Graduates will be able to support the software development needs of businesses in a wide variety of industries, including healthcare, manufacturing, insurance, finance and software publishing.

Students will solve business computer problems through programming techniques and procedures. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, database specialists, software specialists, or information systems managers.

### IT Foundations Certificate - C25590F

-Online

This certificate is designed to give individuals an all-around orientation to computer technologies. It is a recommended starting place for students who know they like computer technology, but are not sure what specific field of computers might be right to follow for their career. The courses introduce students to security, operating systems, programming, databases and other career options that involve computer technology. The courses also can prepare students for a variety of industry certifications.

### Java Programming Certificate – C25590JV

-Day

Designed for individuals interested in acquiring programming skills necessary to design and implement Java programs.

### Visual Basic Programming Certificate - C25590VB

-Online

Designed for individuals interested in acquiring programming skills necessary to design and implement Visual BASIC programs.

### C++ Programming Certificate – C25590CC

-Day

The C++ Programming certificate offers courses for students interested in upgrading their programming skills by acquiring proficiency in an object-oriented programming language.

### Enterprise Java Certificate - C25590EJ

-Day

The Enterprise Java certificate offers courses for students interested in upgrading their programming skills for Java in the enterprise and mobile areas. **(Prerequisites required: C25590JV)**

### Programming Fundamentals Certificate - C25590PF

-Day

The Fundamentals of Computer Programming Certificate will give students the opportunity to achieve programming literacy.

#### Program Sequence

##### FIRST SEMESTER

CSC	120	Computing Fundamentals I.....	4
CSC	121	Python Programming.....	3
CTI	110	Web, Pgm, and DB Foundations.....	3
ENG	111	Writing and Inquiry.....	3
—	—	MAT 143 or Higher.....	3

##### SECOND SEMESTER

CSC	151	JAVA Programming.....	3
DBA	120	Database Programming I.....	3
CSC	154	Software Development.....	3
CTI	120	Network & Sec Foundations.....	3
NOS	110	Operating System Concepts.....	3

##### SUMMER SEMESTER

CSC	174	Server-Side JavaScript.....	3
—	—	Major Elective I.....	3

##### THIRD SEMESTER

—	—	Major Elective II.....	3
ECO	251	Prin of Microeconomics.....	3
CSC	251	Adv JAVA Programming.....	3
CSC	258	JAVA Enterprise Programs.....	3
DBA	130	Introduction to NoSQL Databases.....	3

##### FOURTH SEMESTER

COM	120	Introduction to Interpersonal Comm.....	3
CSC	130	Computing Fundamentals II.....	4
CTS	115	Info Sys Business Concepts.....	3
—	—	HUM/Fine Arts Elective.....	3
—	—	Project Elective.....	3

##### Humanities and Fine Arts

(Select 1 Courses)

ART	111	Art Appreciation.....	3
HUM	115	Critical Thinking.....	3
MUS	110	Music Appreciation.....	3
PHI	240	Introduction to Ethics.....	3

##### Major Electives I

Select 3 hours from the following courses

CSC	122	Python Applications.....	3
CSC	139	Visual Basic.....	3
CSC	134	C++ Programming.....	3
CSC	256	Software Quality Assurance.....	3
DBA	220	Oracle DB Programming II.....	3
WEB	115	Web Markup and Scripting.....	3
WEB	151	Mobile Application Dev I.....	3
WEB	187	Programming for Mobile Devices.....	3
CTS	285	Systems Analysis and Design.....	3

##### Major Electives II

Select 3 hours from the following courses

CSC	116	Introduction to Functional Programming.....	3
CSC	133	C Programming.....	3
CSC	216	Software Architecture.....	3
CSC	221	Advanced Python.....	3
CSC	234	C++ Programming.....	3
CSC	239	Advanced Visual Basic.....	3
DBA	240	Database Analysis/Design.....	3

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WEB 251 Mobile Applications Dev II ..... 3

## **Project Electives**

Select 3 hours from the following courses

CSC 227 Cloud Applications ..... 3

CSC 289 Programming Capstone ..... 3

\*WBL 111 Work-Based Learning ..... 1

\*WBL 112 Work-Based Learning ..... 2

\*WBL 113 Work-Based Learning ..... 3

\*Work-Based Learning is an elective. Students must have approval from the department head and pre-register with the Computer Technologies Division office. The Work-Based Learning work period may be taken over two semester as WBL 112 or over two semesters as WBL-111, and WBL-121 or in one semester as WBL-113

**Graduation Requirements .....68 Credit Hours**