

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.

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 121, 152, 171 or 143	3

SECOND SEMESTER

CTI 120	Network & Sec Foundations	3
CTS 115	Info Sys Business Concepts	3
DBA 120	Database Programming I	3

WEB 115	Web Markup and Scripting	3
— —	Programming Concentration Area	3

SUMMER SEMESTER

CSC 154	Software Development	3
— —	Major Elective	3

THIRD SEMESTER

CSC 227	Cloud Application Development	3
— —	Programming Concentration Area	12-13

FOURTH SEMESTER

COM 120	Introduction to Interpersonal Comm	3
ECO 151	Survey of Economics	3
— —	Humanities/Fine Art Elective	3
— —	Programming Concentration Area	3
— —	Project Elective	3

Graduation Requirements 67-68 Credit Hours

Humanities and Fine Arts Electives

(Choose Min of 3 Cr Hrs)

HUM 110	Technology and Society	3
HUM 115	Critical Thinking	3
HUM 230	Leadership Development	3
PHI 240	Introduction to Ethics	3

Concentration Areas

(Select 1 Option Grouping Below)

Option 1 – Java Programming (19 Cr Hrs, Take in order listed)

CSC 151	Java Programming	3
CSC 130	Computing Fundamentals II	4
CSC 251	Advanced Java Programming	3
CSC 256	Software Quality Assurance	3
— —	Concentration Elective	3
CSC 258	Java Enterprise Programs	3

Concentration Elective (Min of 3 Cr Hrs)

CSC 122	Python Application Development	3
CSC 134	C++ Programming	3
CSC 153	C# Programming	3
CSC 174	Server-side Javascript	3
WEB 151	Mobile Applications Dev I	3

Option 2 – C++ Programming (19 Cr Hrs, Take in order listed)

CSC 134	C++ Programming	3
CSC 130	Computing Fundamentals II	4
CSC 234	Advanced C++ Programming	3
CSC 256	Software Quality Assurance	3
— —	Concentration Elective	3
CSC 216	Software Architecture	3

Concentration Elective (Min of 3 Cr Hrs)

CSC 122	Python Application Development	3
CSC 151	Java Programming	3
CSC 153	C# Programming	3
CSC 174	Server-side Javascript	3
WEB 151	Mobile Applications Dev I	3

Option 3 – .NET Programming (19 Cr Hrs, Take in order listed)

CSC 153	C# Programming	3
WEB 180	Active Server Pages	3
CSC 253	Advanced C# Programming	3
CSC 174	Server-side Javascript	3
CSC 226	.NET Programming	3
DBA 221	SQL Server DB Programming II	3

Major Electives

(Choose Min of 3 Cr Hrs)

CSC 111	Introduction to Ethical Hackign	3
CSC 139	Visual Basic	3
CSC 163	C# Applications Development	3
CSC 221	Advanced Python Programming	3
CTS 285	Systems Analysis and Design	3
DBA 130	Introduction to NoSQL Databases	3
DBA 220	Oracle DB Programming II	3
DBA 240	Database Analysis/Design	3

Project Electives

(Choose Min of 3 Cr Hrs)

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

C++ Programming Certificate – C25590CC

-Day

COMPUTER TECHNOLOGIES

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

CSC 134	C++ Programming	3
CSC 154	Software Development.....	3
CSC 227	Cloud Application Development.....	3
CSC 234	Advanced C++ Programming	3

Graduation Requirements12 Credit Hours

C# Programming Certificate - C25590CZ

-Online

Designed for individuals interested in acquiring programming skills necessary to design and implement C# programs. The student will learn how to design C# programs using event-driven programming techniques, implement current interface design standards, and create reusable code. Manipulate records in both a file-based system and a database system, and program customization using API calls. Emphasis is placed on proper program design techniques.

CSC 153	C# Programming	3
CSC 154	Software Development.....	3
CSC 253	Advanced C# Programming.....	3
CSC 163	C# Applications Development.....	3

Graduation Requirements12 Credit Hours

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)**

CSC 174	Server-side Javascript	3
CSC 258	Java Enterprise Programs	3
WEB 151	Mobile Applications Dev I.....	3
DBA 220	Oracle DB Programming II.....	3

Graduation Requirements12 Credit Hours

Java Programming Certificate – C25590JV

-Day

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

CSC 151	Java Programming	3
CSC 154	Software Development.....	3
CSC 227	Cloud Application Development.....	3
CSC 251	Advanced Java Programming.....	3

Graduation Requirements12 Credit Hours

JavaScript Certificate – C25590JS

-Day

The certificate offers courses for students interested in programming JavaScript with Full Stack implementation.

CSC 174	Server-Side JavaScript	3
DBA 130	Introduction to NoSQL Databases	3
CSC 151	Java Programming	3
CSC 289	Programming Capstone Project.....	3

Graduation Requirements12 Credit Hours

.NET Programming Certificate - C25590NE

-Day

The .NET Programming Certificate offers courses for students to become proficient in .NET technologies.

Prerequisites required: C25590CZ

CSC 226	.NET Programming	3
CSC 227	Cloud Application Development.....	3
DBA 221	SQL Server DB Programming II	3
WEB 180	Active Server Pages.....	3

Graduation Requirements 12 Credit Hours

Programming Fundamentals Certificate - C25590PF

-Day

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

CSC 120	Computer Fundamentals I	4
CSC 121	Python Programming.....	3
WEB 115	Web Markup and Scripting	3
DBA 120	Database Programming I.....	3

Graduation Requirements..... 13 Credit Hours

Visual Basic Programming Certificate - C25590VB

-Online

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

CSC 139	Visual Basic	3
CSC 154	Software Development	3
CSC 227	Cloud Application Development	3
CSC 289	Programming Capstone Project	3

Graduation Requirements..... 12 Credit Hours