## Computer Programming Certificate

Program: Computer Information Systems<br>Program Code:<br>CZ<br>Academic Area:<br>Science, Technology, Engineering and Mathematics<br>Type:<br>Certificate of Accomplishment<br>\section*{CIP Code:}<br>11.0299<br>\section*{Program Statement}

A certificate in Computer Programming gives students mastery of basic programming concepts. The student becomes literate in at least three programming languages and achieves advanced mastery of more sophisticated concepts in at least one programming language.

## Program Information

- Students who have earned credit at other institutions may be able to obtain transfer credit. Transfer credit approval for any Computer Information Systems (CIS or CIT) course must be approved by the Department Chair or by a full-time faculty member in the department.
- Students without basic computer skills should enroll in CIS 111 prior to enrolling in this certificate.
- Students should plan to spend large blocks of time developing proficiency.


## Program Requirements

| Course \# | Title | Credits |
| :--- | :--- | :--- |
|  | CIS 150, 152 or CIS 159 | 3 |
|  | Computer Programming Elective | $3-4$ |
|  | Computer Programming Language Elective | $3-4$ |
|  | Computer Programming Language Sequence | $6-8$ |

## Recommended Course Sequence - Semester 1

| Course \# | Title | Credits |
| :--- | :--- | :--- |
|  | CIS 150, 152 or CIS 159 | 3 |
|  | First-semester Programming Language Elective | $3-4$ |
|  | Computer Programming Elective | $3-4$ |

## Recommended Course Sequence - Semester 2

| Course \# | Title | Credits |
| :--- | :--- | :--- |
|  | CIS 150, 152 or CIS 159 | 3 |
| Second-semester Programming Language Elective | $3-4$ |  |
| Computer Programming Language Elective | $3-4$ |  |
| Total credits: | $\mathbf{1 5 - 1 9}$ |  |

## Category Descriptions

## CIS 150, 152 or CIS 159

Credits: 3
Choose one of the following:

| Course \# | Title | Credits |
| :--- | :--- | :--- |
| CIS 150 | Oracle and SQL | 3 |
| CIS 159 | MySQL and PHP | 3 |

## Computer Programming Elective

Credits: 3-4
Choose one of the following:

| Course \# | Title | Credits |
| :--- | :--- | :--- |
| CIS 122 | Internet Developer | 3 |
| CIS 150 | Oracle and SQL | 3 |
| CIS 155 | Introduction to C++ Programming | 3 |
| CIS 156 | Visual Basic | 3 |
| CIS 157 | Object-Oriented JAVA Programming I | 4 |
| CIS 250 | Interactive Websites | 3 |
| CIS 255 | C++ Object Oriented Programming | 3 |
| CIS 256 | Advanced Visual Basic | 3 |
| CIS 257 | Object-Oriented JAVA Programming II | 4 |
| CIT 143 | Programming for Game Developers I | 3 |
| CIT 242 | Programming for Game Developers II | 3 |

Computer Programming Language Elective
Credits: 3-4
Choose one of the following:

| Course \# | Title | Credits |
| :--- | :--- | :--- |
| CIS 155 | Introduction to C++ Programming | 3 |
| CIS 156 | Visual Basic | 3 |
| CIS 157 | Object-Oriented JAVA Programming I | 4 |
| CIS 250 | Interactive Websites | 3 |
| CIT 143 | Programming for Game Developers I | 3 |

## Computer Programming Language Sequence

Credits: 6-8
Choose one of the following sequences:

| Course \# | Title | Credits |
| :--- | :--- | :--- |
|  | CIS 155 and CIS 255 | 6 |
| CIS 156 and CIS 256 | 6 |  |
| CIS 157 and CIS 257 | 8 |  |
| CIS 159 and CIS 258 | 6 |  |

