

COMPUTER PROGRAMMER CERTIFICATE

39 Semester Credit Hours; Curriculum: 0124

Code	Title	Hours
Courses for a Certificate		
CIS 101	Introduction to Computer Information Systems	3
CIS 131	Web Page Development	4
CIS 201	Information Systems for Business	3
CIS 204	Introduction to System Analysis and Design	3
CAB 140	Database Application Using Access	3
CNS 105	Networking Essentials (or any higher-numbered CNS course)	3
Select one of the following:		3
CSC 155	C++ Computer Science I	
CSC 156	Java Computer Science I	
CSC 157	Python Computer Science I	
Select one of the following non-programming elective courses:		3
CIS 143	Introduction to SQL	
CIS 203	Managing Information Systems	
CIS 205	Documentation and Technical Writing	
CIS 241	Database Management	
CIS 251	Computer Information Systems Internship	
Courses to total a minimum of 14 semester credit hours within one of the following tracks:		14
Total Hours		39

Code	Title	Hours
General Programmer Track		
Select one of the following programming language electives:		3-4
CIS 208	Visual Basic for Applications	
CIS 209	Database Programming for PCs	
CIS 210	Visual Basic .NET Programming for Files and Databases	
CIS 211	Java Programming	
CIS 213	Advanced Topics in Visual Basic .NET Programming	
CIS 222	Java Programming Using Files and Databases	
CIS 227	C# Programming	
CIS 231	Advanced Java Programming	
CIS 257	Apps Programming for Apple Mobile Devices	
CIS 258	Apps Programming for Android Mobile Devices	
CIS 267	Advanced Apps Programming Using Apple Mobile Devices	
CIS 268	Advanced Apps Programming for Android Mobile Devices	
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	
CSC 255	Objects and Algorithms	
or a course approved by the program coordinator		

Select two CIS courses in the same programming language 8
 Select one 200-level programming course (one course from the programming electives) 3-4

Code	Title	Hours
Mobile Programmer Track		
Select one of the following programming language electives:		3-4
CIS 208	Visual Basic for Applications	
CIS 209	Database Programming for PCs	
CIS 210	Visual Basic .NET Programming for Files and Databases	
CIS 211	Java Programming	
CIS 213	Advanced Topics in Visual Basic .NET Programming	
CIS 222	Java Programming Using Files and Databases	
CIS 227	C# Programming	
CIS 231	Advanced Java Programming	
CIS 257	Apps Programming for Apple Mobile Devices	
CIS 258	Apps Programming for Android Mobile Devices	
CIS 267	Advanced Apps Programming Using Apple Mobile Devices	
CIS 268	Advanced Apps Programming for Android Mobile Devices	
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	
CSC 255	Objects and Algorithms	
or a course approved by the program coordinator		
Select one programming course of the following:		4
CIS 180	Introduction to Visual Basic .NET Programming	
CIS 211	Java Programming	
CIS 227	C# Programming	
or a course approved by the program coordinator		
Select one of the following:		8
CIS 257 & CIS 267	Apps Programming for Apple Mobile Devices and Advanced Apps Programming Using Apple Mobile Devices	
CIS 258 & CIS 268	Apps Programming for Android Mobile Devices and Advanced Apps Programming for Android Mobile Devices	

Code	Title	Hours
Web Developer Track		
Select one of the following programming language electives:		3-4
CIS 214	Web Site Maintenance and Management	
CIS 232	Web Scripting	
or a course approved by the program coordinator		
CIS 171	Advanced Web Page Development	3
CIS 188	Active Server Pages	4
CIS 248	Web Database Management	4

Prior to pursuing this certificate, it is strongly recommended that students have taken CIS 116 or CIS 118 or possess equivalent knowledge. Credits earned in these courses are not applicable to this certificate. Consult the program coordinator for further information.

Computers Programmer Certificate Pathway

The following Pathway is recommended for students pursuing the Computers Programming Certificate.

Course	Title	Hours
First Year		
Semester One		
CIS 101	Introduction to Computer Information Systems	3
CIS 131	Web Page Development	4
CNS 105	Networking Essentials	3
CAB 140	Database Application Using Access	3
Select one of the following:		3
CSC 155	C++ Computer Science I	
CSC 156	Java Computer Science I	
CSC 157	Python Computer Science I	
Hours		16
Semester Two		
CIS 201	Information Systems for Business	3
CIS 204	Introduction to System Analysis and Design	3
Select one of the following:		3
CIS 143	Introduction to SQL	
CIS 203	Managing Information Systems	
CIS 205	Documentation and Technical Writing	
CIS 241	Database Management	
CIS 251	Computer Information Systems Internship	
Select one course from one of the following tracks:		4
General Programmer Track (4 credit hours)		
Select one of the following:		
CIS 180	Introduction to Visual Basic .NET Programming (to be followed by CIS 210 in next semester)	
CIS 208	Visual Basic for Applications (to be followed by CIS 209 in next semester)	
CIS 211	Java Programming (to be followed by CIS 222 in next semester)	
Mobile Programmer Track (4 credit hours)		
CIS 257 or CIS 258	Apps Programming for Apple Mobile Devices or Apps Programming for Android Mobile Devices	
Web Developer Track (4 credit hours)		
CIS 171	Advanced Web Page Development	
Hours		13
Second Year		
Semester One		
Select courses from one of the following tracks:		10-12
General Programmer Track (10-12 credit hours)		
Select one of the following:		
CIS 210	Visual Basic .NET Programming for Files and Databases (if CIS 180 was taken in previous semester)	
CIS 209	Database Programming for PCs (if CIS 208 was taken in previous semester)	
CIS 222	Java Programming Using Files and Databases (if CIS 211 was taken in previous semester)	
Select two courses from the following:		
CIS 208	Visual Basic for Applications	
CIS 209	Database Programming for PCs	
CIS 210	Visual Basic .NET Programming for Files and Databases	
CIS 211	Java Programming	
CIS 213	Advanced Topics in Visual Basic .NET Programming	
CIS 222	Java Programming Using Files and Databases	
CIS 227	C# Programming	
CIS 231	Advanced Java Programming	
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	

CSC 242	Python Data Structures	
CSC 255	Objects and Algorithms	
or other course approved by the program coordinator		
Mobile Programmer Track (11-12 credit hours)		
CIS 267 or CIS 268	Advanced Apps Programming Using Apple Mobile Devices or Advanced Apps Programming for Android Mobile Devices	
Select one of the following:		
CIS 180	Introduction to Visual Basic .NET Programming	
CIS 211	Java Programming	
CIS 227	C# Programming	
or other course approved by the program coordinator		
Select one of the following:		
CIS 208	Visual Basic for Applications	
CIS 209	Database Programming for PCs	
CIS 210	Visual Basic .NET Programming for Files and Databases	
CIS 211	Java Programming	
CIS 213	Advanced Topics in Visual Basic .NET Programming	
CIS 222	Java Programming Using Files and Databases	
CIS 227	C# Programming	
CIS 231	Advanced Java Programming	
CSC 240	C++ Data Structures	
CSC 241	Java Data Structures	
CSC 255	Objects and Algorithms	
or other course approved by the program coordinator		
Web Developer Track (12 credit hours)		
CIS 188	Active Server Pages	
CIS 248	Web Database Management	
Select one of the following:		
CIS 214	Web Site Maintenance and Management	
CIS 232	Web Scripting	
or other course approved by the program coordinator		
Hours		10-12
Total Hours		39-41

Note: Pathway is a recommended sequence and selection of courses. Part-time students should contact the program coordinator to discuss a part-time pathway as well as course prerequisites and recommendations.