

Degrees: Associate of Applied Science

Computer Network Specialist
Computer Security Specialist
Computer Support Technician
Game Development
Microsoft Certified Technology Specialist (MCTS)
PC Applications Specialist
Programming Specialist
Web Development

Certificates:

Computer Network Specialist
Computer Security Specialist
Computer Support Technician
Game Development
Microsoft Certified Technology Specialist (MCTS)
PC Applications Specialist
Programming Specialist
Web Development

Computer Information Systems Requirements for all AAS Degrees

The Computer Information Systems associate of applied science degree prepares you for entry-level positions in all areas of emphasis that are listed following the core requirements. You must earn a minimum grade of "C" in all CIS, CNG, CSC, CWB, and MGD courses required for a certificate or degree.

Required Courses	Credits
Faculty advisor-approved business course	3
or ACC 121 Accounting Principles I	(4)
ENG 121 English Composition I	3
ENG 122 English Composition II	3
or ENG 131 Technical Writing	
MAT 121 College Algebra (or higher)	4
COM 115 Public Speaking	3
or THE 118 Acting Skills: Trades/Business	
CIS 268 System Analysis and Design I	3
CIS 289 Capstone	3
Credit from any two of the following three areas:	6
Humanities (ART, FRE, GER, HUM, ITA, JPN, LIT, MUS, PHI, RUS, SPA, THE)	
Physical and Life Sciences (AST, BIO, CHE, ENV, GEY, PHY, SCI)	
Social and Behavioral Science (ANT, ECO, GEO, HIS, POS, PSY, SOC)	
Total Credits	28-29

AAS Degree

Computer Network Specialist

This area of emphasis prepares you for a job in the computer networking field. Students in this program gain hands-on experience with computer hardware, software and networks. Upon successful completion of the program, the student will have the needed background to prepare to take one or more of the following exams: Network+; Security+; MCITP (Microsoft Certified Information Technology Professional); MCTS (Microsoft Certified Technology Specialist); or CISCO (CCNA).

Required Courses	Credits
CIS 220 Fundamentals of Unix	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net+	3
CNG 131 Fundamentals of Security	3
Choose 15 credit hours from the following:	15
CIS 222 UNIX System Administration	
CNG 136 Guide to Disaster Recovery	
CNG 209 MS Server Active Directory Configuration	
CNG 210 MS Network Infrastructure Configuration	
CNG 211 Windows Configuration: Win 7	
CNG 212 Manage a MS Windows Server Environment	
CNG 253 Firewalls and How They Work	
CNG 257 Network Defense and Counter Measures	
CNG 258 Computer Forensics	
CNG 260 CISCO Network Associate I	
CNG 261 CISCO Network Associate II	
CNG 262 CISCO Network Associate III	
CNG 263 CISCO Network Associate IV	
CNG 280 Internship	
Required Credits	35
Computer Information Systems Requirements	28-29
Total Credits	63-64

AAS Degree

Computer Security Specialist

This area of emphasis provides you with the skills necessary to protect computing systems and networks that have an important impact on data confidentiality, integrity and availability. You will learn about computer network threats and the appropriate incident response, to include defenses, countermeasures and computer forensics.

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CIS 222 UNIX System Administration	3
CNG 131 Network Security Fundamentals	3
CNG 136 Guide to Disaster Recovery	3
CNG 253 Firewalls and How They Work	3
CNG 257 Network Defense/Countermeasures	3
CNG 258 Computer Forensics	4
CNG 259 Enterprise Security	4
Faculty advisor-approved electives	9
Required Credits	35
Computer Information Systems Requirements	28-29
Total Credits	63-64

AAS Degree

Computer Support Technician

This area of emphasis provides both hardware and operating systems experience needed to work as a support person for both local and wide area network environments.

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net+	3
CNG 131 Network Security Fundamentals	3
CNG 211 Windows Configuration: Win 7	3

Choose 12 credit hours from the following:

CIS 222 UNIX System Administration	
CNG 136 Guide to Disaster Recovery	
CNG 209 MS Server Active Directory Configuration	
CNG 210 MS Network Infrastructure Configuration	
CNG 212 Manage a MS Windows Server Environment	
CNG 253 Firewalls and How They Work	
CNG 257 Network Defense and Counter Measures	
CNG 258 Computer Forensics	
CNG 280 Internship	

Required Credits	35
Computer Information Systems Requirements	28-29
Total Credits	63-64

AAS Degree

Game Development

This area of emphasis prepares you for an entry-level position as a developer in the gaming industry. It also allows you to develop strong technical skills in programming, which permits transfer to a four-year university.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++	4
CSC 161 Computer Science II: C++	4
CIS 220 Fundamentals of UNIX	3
CWB 245 Complete Web Animation: Flash	3
CSC 126 Game Design and Development	3
MGD 111 Adobe Photoshop I	3
MGD 211 Adobe Photoshop II	3

Choose two from the following:

CSC 240 Java Programming	3
CSC 261 Programming in C#.NET	3
CSC 280 Internship	3
Or faculty advisor-approved elective	

Required Credits	32
Computer Information Systems Requirements	28-29
Total Credits	60-61

AAS Degree

Microsoft Certified Technology Specialist (MCTS)

This area of emphasis provides you with the skill set necessary to complete the MCTS (Microsoft Certified Technology Specialist) as either a Microsoft Database Administrator or Microsoft Developer. You will develop and maintain Windows and Web applications that use the .NET Framework and Visual Studio and learn the skills necessary to design, implement, and administer Microsoft SQL Server databases.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 236 Introduction to C# Programming	4
CIS 220 Fundamentals of Unix	3
CWB 110 Complete Web Authoring: HTML	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 261 Programming in C#.NET	3
CWB 164 XML	3

Choose three from the following:

CSC 250 Programming with MS ADO .NET	3
CSC 253 MS ASP .NET Web Application Development: C#	3
CSC 262 VS.NET Application Development: C#	3
CIS 252 Implement and Maintain SQL Server Database	3
CIS 253 Programming Microsoft SQL Server Database	3
CIS 280 Internship	3
CSC 280 Internship	3
Or faculty advisor-approved elective	

Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

AAS Degree

PC Applications Specialist

This area of emphasis prepares you for an entry-level position and/or advancement in businesses that employ people in office occupations. Upon completion of the course work, you will be prepared to sit for the Microsoft Office Certification examinations.

Required Courses	Credits
BTE 100 Computer Keyboarding I	1
BTE 125 Records Management	3
BTE 166 Business Editing Skills	3
CIS 118 Introduction to PC Applications: MS Office	3
CIS 128 Windows Complete	3
CIS 140 Microsoft Outlook	1
CIS 135 Complete PC Word Processing: MS Word	3
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Complete Presentation Graphics: MS PowerPoint	3
CWB 110 Complete Web Authoring: HTML	3

Choose two from the following:	6
CSC 119 Introduction to Programming	3
CNG 101 Introduction to Networking	3

CIS 280 Internship	
Or faculty advisor-approved electives	
Required Credits	35
Computer Information Systems Requirements	28-29
Total Credits	63-64

AAS Degree

Programming Specialist

This area of emphasis prepares you to become an entry-level programmer. You will design, develop and test computer application software programs in a variety of programming language. Programs will range from simple business programs to the design and completion of a complex business system.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++ or CSC 236 Intro to C# Programming	4
CIS 240 Database Design and Development	3
CNG 101 Introduction to Networking	3
CIS 220 Fundamentals of UNIX	3
Three object-oriented programming courses with at least one second semester course	9
Faculty advisor-approved electives	9
Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

AAS Degree

Web Development

This area of emphasis prepares you for an entry-level position in Web Design/Development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that have been researched and retrofitted to meet the demands of today's Web fields.

Required Courses	Credits
CWB 110 Complete Web Authoring: HTML	3
CWB 130 Dreamweaver	3
CWB 204 Cascading Style Sheets	3
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++ or CSC 236 Intro to C# Programming	4
CIS 220 Fundamentals of UNIX	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CWB 205 Complete Web Scripting: JavaScript	3
Choose two from the following	6
CSC 240 Java Programming	
CSC 261 Programming in C# .NET	
CSC 248 Internet Java Programming	
CSC 253 MS ASP .NET Web Application Development: C#	
CWB 164 XML	
CWB 208 Web Application Development: PHP	
CIS 244 SQL PL/SQL	
CWB 245 Complete Web Animation I: Flash	

CWB 246 Complete Web Animation II: Flash	
CWB 280 Internship	
Or faculty advisor-approved elective	
Required Credits	34
Computer Information Systems Requirements	28-29
Total Credits	62-63

Certificate

Computer Network Specialist

This area of emphasis prepares you for a job in the computer networking field. Students in this program gain hands-on experience with computer hardware, software and networks. Upon successful completion of the program, the student will have the needed background to prepare to take one or more of the following exams: Network+; Security+; MCITP (Microsoft Certified Information Technology Professional); MCTS (Microsoft Certified Technology Specialist); or CISCO (CCNA).

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net+	3
CNG 131 Fundamentals of Security	3
Choose 15 credit hours from the following:	15
CIS 222 UNIX System Administration	
CNG 136 Guide to Disaster Recovery	
CNG 209 MS Server Active Directory Configuration	
CNG 210 MS Network Infrastructure Configuration	
CNG 211 Windows Configuration: Win 7	
CNG 212 Manage a MS Windows Server Environment	
CNG 253 Firewalls and How They Work	
CNG 257 Network Defense and Counter Measures	
CNG 258 Computer Forensics	
CNG 260 CISCO Network Associate I	
CNG 261 CISCO Network Associate II	
CNG 262 CISCO Network Associate III	
CNG 263 CISCO Network Associate IV	
CNG 280 Internship	
Total Credits	35

Certificate

Computer Security Specialist

This area of emphasis provides you with the skills necessary to protect computing systems and networks that have an important impact on data confidentiality, integrity and availability. You will learn about computer network threats and the appropriate incident response, to include defenses, countermeasures and computer forensics.

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CIS 222 UNIX System Administration	3
CNG 131 Network Security Fundamentals	3
CNG 136 Guide to Disaster Recovery	3
CNG 253 Firewalls and How They Work	3
CNG 257 Network Defense/Counter measures	3

CNG 258 Computer Forensics	4
CNG 259 Enterprise Security	4
Faculty advisor-approved electives	9
Total Credits	35

Certificate

Computer Support Technician

This area of emphasis provides both hardware and operating systems experience needed to work as a support person for both local and Wide Area Network environments.

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net+	3
CNG 131 Network Security Fundamentals	3
CNG 211 Windows Configuration: Win 7	3

Choose 12 credit hours from the following:

CIS 222 UNIX System Administration	
CNG 136 Guide to Disaster Recovery	
CNG 209 MS Server Active Directory Configuration	
CNG 210 MS Network Infrastructure Configuration	
CNG 212 Manage a MS Windows Server Environment	
CNG 253 Firewalls and How They Work	
CNG 257 Network Defense and Counter Measures	
CNG 258 Computer Forensics	
CNG 280 Internship	

Total Credits **35**

Certificate

Game Development

This area of emphasis prepares you for entry-level positions in the gaming industry. It also allows you to develop strong technical skills in programming, which permits transfer to a four-year university.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++	4
CSC 161 Computer Science II: C++	4
CIS 220 Fundamentals of UNIX	3
CWB 245 Complete Web Animation: Flash	3
CSC 126 Game Design and Development	3
MGD 111 Adobe Photoshop I	3
MGD 211 Adobe Photoshop II	3

Choose two from the following

CSC 240 Java Programming	6
CSC 261 Programming C#.NET	
CSC 280 Internship	
Or faculty advisor-approved electives	

Total Credits **32**

Certificate

Microsoft Certified Technology Specialist (MCTS)

This area of emphasis provides you with the skill set necessary to complete the MCTS (Microsoft Certified Technology Specialist) as either a Microsoft Database Administrator or Microsoft Developer. You will develop and maintain Windows and Web applications that use the .NET Framework and Visual Studio and learn the skills necessary to design, implement, and administer Microsoft SQL Server databases.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 236 Introduction to C# Programming	4
CIS 220 Fundamentals of Unix	3
CWB 110 Complete Web Authoring: HTML	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 261 Programming in C#.NET	3
CWB 164 XML	3

Choose three from the following

CSC 250 Programming with MS ADO .NET	9
CSC 253 MS ASP .NET Web Application Development: C#	
CSC 262 VS.NET Application Development: C#	
CIS 252 Implement and Maintain SQL Server Database	
CIS 253 Programming Microsoft SQL Server Database	
CIS 280 Internship	
CSC 280 Internship	
or faculty advisor-approved elective	

Total Credits **34**

Certificate

PC Applications Specialist

This area of emphasis prepares you for an entry-level position and/or advancement in businesses that employ people in office occupations. Upon completion of the course work, you will be prepared to sit for the Microsoft Office certification examinations.

Required Courses	Credits
BTE 100 Computer Keyboarding I	1
BTE 125 Records Management	3
BTE 166 Business Editing Skills	3
CIS 118 Introduction to PC Applications: MS Office	3
CIS 128 Windows Complete	3
CIS 140 Microsoft Outlook	1
CIS 135 Complete PC Word Processing: MS Word	3
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Complete Presentation Graphics: MS PowerPoint	3
CWB 110 Complete Web Authoring: HTML	3

Choose two from the following

CSC 119 Introduction to Programming	6
CNG 101 Introduction to Networking	
CIS 280 Internship	
or faculty advisor-approved elective	

Total Credits **35**

Certificate

Programming Specialist

This area of emphasis prepares you to become an entry-level programmer. You will design, develop, and test computer application software programs in a variety of programming languages. Programs will range from simple business programs to the design and completion of a complex business system.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++ or CSC 236 Intro to C# Programming	4
CIS 220 Fundamentals of UNIX	3
CIS 240 Database Design and Development	3
CNG 101 Introduction to Networking	3
CIS 268 System Analysis and Design	3
Three object-oriented programming courses with at least one, second-semester course	9
Faculty advisor-approved electives	6
Total Credits	34

Certificate

Web Development

This area of emphasis prepares you for an entry-level position in Web Design/Development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that have been researched and retrofitted to meet the demands of today's Web fields.

Required Courses	Credits
CWB 110 Complete Web Authoring: HTML	3
CWB 130 Dreamweaver	3
CWB 204 Cascading Style Sheets	3
CSC 119 Introduction to Programming	3
CSC 160 Computer Science I: C++ or CSC 236 Introduction to C# Programming	4
CIS 220 Fundamentals of UNIX	3
CIS 240 Database Design and Development	3
CIS 251 Intro. to Structured Query Language (SQL)	3
CWB 205 Complete Web Scripting: JavaScript	3
Choose two from the following	6
CSC 240 Java Programming	
CSC 261 Programming in C#.NET	
CSC 248 Internet Java Programming	
CSC 253 MS ASP .NET Web Application Development: C#	
CWB 164 XML	
CWB 208 Web Application Development: PHP	
CIS 244 SQL PL/SQL	
CWB 245 Complete Web Animation I: Flash	
CWB 246 Complete Web Animation II: Flash	
CWB 280 Internship or faculty advisor-approved elective	
Total Credits	34

AAS Degree

Web Design

This area of emphasis prepares you for an entry-level position in Internet Web design. You will learn necessary skills using a variety of our programs, all focusing on page design and implementation.

Required Courses	Credits
CIS 128 Windows Complete	3
CIS 220 Fundamentals of Unix	3
CSC 119 Introduction to Programming	3
CWB 110 Complete Web Authoring: HTML	3
CWB 130 Complete Web Editing Tools: Dreamweaver	3
CWB 162 Image Editing I: Photoshop	3
CWB 205 Complete Web Scripting: JavaScript	3
CWB 245 Complete Web Animation I: Flash	3
CWB 246 Complete Web Animation II: Flash	3
CWB 262 Image Editing II: Photoshop	3
Faculty advisor-approved electives	6
Required Credits	36
Computer Information Systems Requirements	28-29
Total Credits	64-65

AAS Degree

Web Development

This area of emphasis prepares you for an entry-level position in Internet Web development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages using databases is explored.

Required Courses	Credits
CWB 110 Complete Web Authoring: HTML	3
CSC 119 Introduction to Programming	3
CSC 154 Introduction to MS Visual Basic .NET (OOP)	3
or	
CSC 236 C# Programming	4
CIS 220 Fundamentals of UNIX	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CSC 240 Java Programming	3
or	
CSC 251 Programming in VB.NET	3
or	
CSC 261 Programming in C#.NET	3
CWB 164 XML	3
CSC 248 Internet Java Programming	3
or	
CSC 253 MS ASP .NET Web Application Development	3
CWB 205 Complete Web Scripting: JavaScript	3
CWB 208 Web Application Development: PHP	3
Required Credits	33-34
Computer Information Systems Requirements	28-29
Total Credits	61-63

Certificate

Cisco Network Associate

This area of emphasis prepares you to take the Cisco INTRO and Cisco ICND (Interconnecting Network Devices) certification exams equating to the Cisco Certified Network Associate (CCNA) certification. Content includes basic network principles, basic router and switch configuration, intermediate routing and switching, and Wide Area Networking (WAN). Focus is on hands-on performance and assessment.

Required Courses		Credits
CIS 220	Fundamentals of UNIX	3
CNG 121	Computer Technician I: A+	4
CNG 122	Computer Technician II: A+	4
CNG 211	Windows Configuration: Vista	3
CNG 260	Cisco Network Associate I	5
CNG 261	Cisco Network Associate II	5
CNG 262	Cisco Network Associate III	5
CNG 263	Cisco Network Associate IV	5
Total Credits		34

Certificate

Computer Support Technician

This area of emphasis provides both hardware and operating systems experience needed to work as a support person for both local and Wide Area Network environments.

Required Courses		Credits
CIS 220	Fundamentals of UNIX	3
CNG 121	Computer Technician I: A+	4
CNG 122	Computer Technician II: A+	4
CNG 124	Networking I: Net+	3
CNG 125	Networking II: Net+	3
CNG 131	Network Security Fundamentals	3
CNG 209	MS Server Active Directory Configuration	4
CNG 211	Windows Configuration: Vista	3
CNG 212	Manage MS Server Environment	4
Faculty advisor-approved elective		3
Total Credits		34

Certificate

Game Development

This area of emphasis prepares you for entry-level programming positions in the gaming industry. You will have the opportunity to work with an industry standard gaming engine.

Required Courses		Credits
CWB 162	Intro to Image Editing: Photoshop or	3
MGD 111	Adobe Photoshop I	3
CSC 119	Introduction to Programming	3
CSC 236	C# Programming or	4
CSC 160	Computer Science I: C++	4
CIS 220	Fundamentals of UNIX	3

CWB 245	Complete Web Animation: Flash or	3
MGD 143	Web Motion Graphics Design I: Flash	3
CSC 126	Game Design and Development or	3
MGD 167	Game Design I	3
CSC 227	3D Game Programming	3
CSC 228	3D Game Scripting	3
CWB 262	Advanced Image Editing: Photoshop or	3
MGD 211	Adobe Photoshop II	3
Choose two electives		6-7
CSC 161	Computer Science II	4
CSC 240	Java Programming	3
CSC 251	Programming Visual Basic.NET	3
CSC 261	Programming C#.NET	3
Total Credits		34-35

Certificate

Microsoft Web/Windows Developer (MCPD)

This area of emphasis provides you with the skill set necessary to complete the MCTS (Microsoft Certified Technology Specialist) and MCPD (Microsoft Certified Professional Developer). You will develop and maintain Windows and Web applications that use the .NET Framework and Visual Studio.

Required Courses		Credits
CSC 119	Introduction to Programming	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) or	3
CSC 236	C# Programming	4
CWB 110	Complete Web Authoring: HTML	3
CWB 164	XML	3
CIS 240	Database Design and Development	3
CIS 251	Intro to Structured Query Language (SQL)	3
CSC 251	Programming in Visual Basic .NET or	
CSC 261	Programming in C# .NET	3
CSC 250	Programming with MS ADO .NET	3
CSC 253	MS ASP .NET Web Application Development	3
CSC 262	VS.NET Application Development: VB & C#	3
CIS 252	Implement and Maintain SQL Server Database	3
Total Credits		33-34

Certificate

Microsoft Database Administrator (MCITP)

This area of emphasis provides you with the skills necessary to design, implement, and administer Microsoft SQL Server databases.

Required Courses	Credits
CSC 160 Computer Science I	4
or	
CSC 236 C# Programming	4
CIS 220 Fundamentals of Unix	3
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CIS 252 Implement and Maintain SQL Server Database	3
CIS 253 Programming Microsoft SQL Server Database	3
CSC 250 Programming with MS ADO .NET	3
CWB 110 Complete Web Authoring: HTML	3
CWB 164 XML	3
Choose two of the following:	6
CSC 253 MS ASP .NET Web Application Development	3
CSC 262 VS.NET Application Development: VB & C#	3
Faculty advisor-approved elective	
Total Credits	34

Certificate

Microsoft Server Administrator (MCITP)

This area of emphasis provides the skills necessary to manage and troubleshoot system environments based on Microsoft Server Platforms.

Required Courses	Credits
CIS 220 Fundamentals of Unix	3
CNG 121 Computer Technician I: A+	4
CNG 122 Computer Technician II: A+	4
CNG 124 Networking I: Net+	3
CNG 125 Networking II: Net+	3
CNG 209 MS Server Active Directory Configuration	4
CNG 210 MS Server Network Configuration	4
CNG 211 Windows Configuration: Vista	3
CNG 212 Manage MS Server Environment	4
Total Credits	32

Certificate

Oracle Database Administrator

This area of emphasis provides you with the necessary skills to design, implement, and administer an Oracle Database.

Required Courses	Credits
CIS 220 Fundamentals of UNIX	3
CSC 236 C# Programming	4
or	
CSC 160 Computer Science I	4
CIS 240 Database Design and Development	3
CIS 251 Intro to Structured Query Language (SQL)	3
CIS 243 SQL PL/SQL	3
CIS 246 Oracle Database Administrator I	4
CIS 247 Oracle Database Administrator II	4
CIS 249 Oracle Performance Tuning	4
CWB 110 Complete Web Authoring	3
CWB 164 XML	3
Total Credits	34

Certificate

PC Applications Specialist

This area of emphasis prepares you to become an entry-level microcomputer specialist with an emphasis in applications. Upon completion of the course work, you will be prepared to sit for the Microsoft Office certification examinations.

Required Courses	Credits
CSC 119 Introduction to Programming	3
CIS 118 Introduction to PC Applications: MS Office	3
CIS 128 Windows Complete	3
CIS 140 Microsoft Outlook	1
CIS 135 Complete PC Word Processing: MS Word	3
CIS 145 Complete PC Database: MS Access	3
CIS 155 PC Spreadsheet Concepts: MS Excel	3
CIS 165 Complete Presentation Graphics: MS PowerPoint	3
CNG 101 Introduction to Networking	3
CWB 110 Complete Web Authoring: HTML	3
Faculty approved electives	6
Total Credits	34

Certificate

Programming Specialist

This area of emphasis prepares you to become an entry-level programmer. Upon completion of this program, you will have written a minimum of 30 programs ranging from simple business programs to the design and completion of a complex business system.

Required Courses		Credits
CSC 119	Introduction to Programming and either	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) 3 or	3
CSC 236	C# Programming or only	4
CSC 160	Computer Science I	4
CIS 220	Fundamentals of UNIX	3
CIS 240	Database Design and Development	3
CNG 101	Introduction to Networking	3
CIS 221	UNIX Shellscripting or	3
CWB 205	Complete Web Scripting: JavaScript	3
CIS 268	System Analysis and Design	3
Two object-oriented programming languages with at least one, second-semester course		6
Faculty advisor-approved electives		9
Total Credits		34-37

Certificate

Web Design

This area of emphasis prepares you for an entry-level position in Internet Web design. You will learn necessary skills using a variety of programs, all focusing on page design and implementation.

Required Courses		Credits
CIS 128	Windows Complete	3
CIS 220	Fundamentals of UNIX	3
CSC 119	Introduction to Programming	3
CWB 110	Complete Web Authoring: HTML	3
CWB 130	Complete Web Editing Tools: Dreamweaver	3
CWB 162	Image Editing I: Photoshop	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 245	Complete Web Animation I: Flash	3
CWB 246	Complete Web Animation II: Flash	3
CWB 262	Image Editing II: Photoshop	3
Faculty advisor-approved electives		6
Total Credits		36

Certificate

Web Development

This area of emphasis prepares you for an entry-level position in Internet Web development with a focus on the programming and database aspects of Web sites. Course offerings provide a mix of programming and applications that examine both the client and server aspects of Web sites. Creation of dynamic Web pages using databases is explored.

Required Courses		Credits
CWB 110	Complete Web Authoring: HTML	3
CSC 119	Introduction to Programming	3
CSC 154	Introduction to MS Visual Basic .NET (OOP) 3 or	3
CSC 236	C# Programming	4
CIS 220	Fundamentals of UNIX	3
CIS 240	Database Design and Development	3
CIS 251	Intro. to Structured Query Language (SQL)	3
CSC 240	Java Programming or	3
CSC 251	Programming in VB.NET or	3
CSC 261	Programming in C#.NET	3
CWB 164	XML	3
CSC 248	Internet Java Programming or	3
CSC 253	MS ASP .NET Web Application Development	3
CWB 205	Complete Web Scripting: JavaScript	3
CWB 208	Web Application Development: PHP	3
Total Credits		34-35