

COMPUTER INFORMATION SYSTEMS

Credentials

Programming skills certificate.....	16 cr.
Introductory certificate	27–28 cr.
Networking Technology Integration certificate.....	31 cr.
Web Specialist certificate.....	30 cr.
Microcomputer Support Technician AAS degree.....	60–61 cr.
Programming AAS degree	60–62 cr.
Web Specialist AAS degree.....	64 cr.
Post-associate certificate	16 cr.

Major Description

If you're a problem solver by nature with a love of computers, our computer information systems (CIS) programs offer many options for different levels of interest and ability. Just starting out in computing? Enroll in our introductory certificate program for the basics in software applications and programming. Or, take the next step with an associate degree and beyond.

- Computer information systems: The certificate program will introduce you to the operating system and concepts of programming logic. You'll also obtain a basic knowledge of software applications and programming languages. Start here and select a CIS associate degree option later, or go straight from Schoolcraft to an entry-level job.
- Already have a degree? The post-associate certificate is designed for working professionals who have experience in the computer field but want to study the newest technology and keep up with the ever-changing field.
- Programming: Our associate degree and skills certificate programs will prepare you for a position as an entry-level computer programmer. You'll learn to analyze problems and write code to solve them.
- Microcomputer support technician: Technicians assist users by recommending hardware and software, interpreting manuals, organizing storage, networking workstations and creating systems solutions using the microcomputer.

- Networking technology integration: This program covers LANs, WANs, network architecture, processes, protocols and more. Upon completion you'll be ready to continue your studies for the Cisco Certified Entry Networking Technician (CCENT) or CompTIA Network+ certification.
- Web specialist: This certificate will provide you with the combination of technical programming knowledge and graphic design skills essential for a career in the ever-evolving world of the web.

Job Titles & Median Salaries or Hourly Rates

- Microcomputer Support Technician: \$37,280 (national)
- Programmer: \$71,380 (national)
- Computer Support Specialist: \$44,260 (national)
- Network and Computer Systems Administrator: \$69,160 (national)
- Web Page Designer: \$55,068 (Michigan)
- Web Developer: \$75,660 (national)

Computer Information Systems Introductory Certificate

The computer information systems certificate program introduces students to the operating system and concepts surrounding programming logic. In addition, students obtain a basic knowledge of software applications and programming languages.

Students may select one of the computer information systems associate degree programs at anytime during or after the first year. However, all degree requirements must be fulfilled.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 115	Introduction to Computer Based Systems.....	3
CIS 120	Software Applications	3
CIS 129	Introduction to Programming Logic.....	3
CIS Elective	Select 1	3
CIS 170	Microsoft Windows	
CIS 178	Technical Microsoft Windows	

Total Credits 12

First Year—Winter Semester

ENG 101	English Composition 1.....	3
MATH 113	Intermediate Algebra for College Students.....	4
CIS 176	Visual Basic.NET	3
CIS 225	Database Management Systems	3
Elective	Select from the list below	2–3

Total Credits 15–16

PROGRAM TOTAL 27–28 CREDITS

Electives

CIS 122	Microsoft Outlook	2
CIS 125	Principles of Information Security.....	3
CIS 251	IT Project Management	3
CIS 255	Introduction to LINUX.....	3

Computer Information Systems: Microcomputer Support Technician AAS Degree

This program is designed to prepare the student for entry-level positions supporting users of microcomputer components of the operating system. Technicians will assist microcomputer users by recommending appropriate hardware and software, interpreting software manuals, organizing the disk storage, networking workstations and creating systems solutions using the microcomputer.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 115	Introduction to Computer Based Systems	3
CIS 171	Introduction to Networking	3
MATH 113	Intermediate Algebra for College Students.....	4
ENG 101	English Composition 1	3

Total Credits 13

First Year—Winter Semester

CIS 120	Software Applications	3
CIS Elective	Select 1	3
CIS 170	Microsoft Windows	
CIS 178	Technical Microsoft Windows	
ENG 102	English Composition 2.....	3
CIS 173	Wireless Local Area Networks.....	3
CIS 235	Managing and Troubleshooting PCs.....	3

Total Credits 15

First Year—Spring Session

Social Science	Select 1	3–4
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	

Total Credits 3–4

Second Year—Fall Semester

CIS 180	Spreadsheet Applications—Current Software...	3
CIS 225	Database Management Systems	3
CIS 265	Networking 1	3
COMA 103	Fundamentals of Speech	3
Science*	Select any General Education Science course ...	4

Total Credits 16

Second Year—Winter Semester

CIS 215	Advanced Software Applications.....	3
CIS 250	Systems Development and Design	4
CIS 276	Networking 2	3
Elective	Select from the list below	3

Total Credits 13

PROGRAM TOTAL 60–61 CREDITS

* Number of credits may vary depending on the General Education Science course selection.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection

Electives

CIS 125	Principles of Information Security.....	3
CIS 172	Network Security Fundamentals.....	3
CIS 251	IT Project Management	3
CIS 255	Introduction to LINUX	3
CIS 260	Introduction to UNIX	3
CIS 273	TCP/IP and Network Architectures	3

Computer Information Systems: Networking Technology Integration Certificate

The curriculum provides students with an in-depth understanding of the theory, hardware, and software of computer networking. This program provides a complete introductory program for students or adult learners who are new to the field. For students who have networking experience, this program also offers more advanced networking study.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 171	Introduction to Networking	3
CIS 170	Microsoft Windows.....	3
or		
CIS 178	Technical Microsoft Windows.....	3
CIS 235	Managing and Troubleshooting PCs.....	3
CIS 267	Home Technology Integration.....	4
ENGR 100	Introduction to Engineering and Technology...	3

Total Credits 16

First Year—Winter Semester

CIS 172	Network Security Fundamentals.....	3
CIS 173	Wireless Local Area Networks.....	3
CIS 251	IT Project Management	3
CIS 271	Local Area Networks	3
CIS 273	TCP/IP and Network Architectures	3

Total Credits 15

PROGRAM TOTAL 31 CREDITS

Computer Information Systems: Programming AAS Degree

As business and industry embrace new technology and procedures, the need for specially trained people accelerates. This program is designed to prepare the student for a position as an entry-level programmer. Students will learn to become proficient in following directions, analyzing problems, and writing step-by-step instructions so that the computer will efficiently process the data needed to solve these problems. Accuracy, persistence, patience, and the ability to communicate both orally and in writing are important characteristics a computer programmer should possess.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 115	Introduction to Computer Based Systems.....	3
CIS 129	Introduction to Programming Logic.....	3
MATH 113	Intermediate Algebra for College Students.....	4
COMA 103	Fundamentals of Speech.....	3
ENG 101	English Composition 1.....	3

Total Credits 16

First Year—Winter Semester

ENG 102	English Composition 2.....	3
CIS Elective	Select 1	3
CIS 170	Microsoft Windows	
CIS 178	Technical Microsoft Windows	
CIS 225	Database Management Systems	3
Science*	Select any General Education Science course ..	4
Elective	Select from the list below	3

Total Credits 16

Second Year—Fall Semester

CIS 176	Visual Basic.NET	3
CIS 211	Introduction to C++.....	2
CIS Elective	Select 1	3
CIS 255	Introduction to LINUX	
CIS 260**	Introduction to UNIX	
Elective	Select from the list below	6

Total Credits 14

Second Year—Winter Semester

CIS 250	Systems Development and Design	4
CIS 290	Object-Oriented Programming with Java.....	3
CIS 221	Advanced C++.....	2
Social Science	Select 1	3-4
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
PSYCH 201	Introductory Psychology	
Elective	Select from the list below	2-3

Total Credits 14-16

PROGRAM TOTAL 60-62 CREDITS

* Number of credits may vary depending on the General Education Science course selection.

** CIS 260 is offered winter semester.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

CIS 120	Software Applications	3
CIS 122	Microsoft Outlook	2
CIS 125	Principles of Information Security.....	3
CIS 185	Introduction to HTML.....	3
CIS 223	Introduction to C#.....	3
CIS 238	JavaScript	3
CIS 251	IT Project Management	3
CIS 255	Introduction to LINUX.....	3
CIS 260	Introduction to UNIX	3

Computer Information Systems: Programming Skills Certificate

The Microsoft .NET framework is a common environment for building, deploying, and running web services and web applications in the Windows environment. This certificate is designed to introduce the student to the top four programming languages used in software development today. The student will use the new Visual Studio.NET, which is a common development environment for the new .NET Framework. The .NET Framework provides a feature-rich application execution environment, simplified development, and easy integration between a number of different development languages.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion. All program required courses must have been completed with a grade of 2.0 or better.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CIS 129	Introduction to Programming Logic.....	3
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Total Credits 3

First Year—Winter Semester

CIS 176	Visual Basic.NET	3
CIS 211	Introduction to C++.....	2

Total Credits 5

Second Year—Fall Semester

CIS 221	Advanced C++.....	2
CIS 223	Introduction to C#.....	3

Total Credits 5

Second Year—Winter Semester

CIS 290	Object-Oriented Programming with Java.....	3
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Total Credits 3

PROGRAM TOTAL 16 CREDITS

Computer Information Systems: Web Specialist AAS Degree

The technology of the Internet is constantly evolving both in terms of delivery infrastructure and website development tools. To stay abreast of these technological advances requires programming and design knowledge, skills and experience. A good site must include both quality visual communication design and functionality. Programming is needed for interactivity to search databases and track usage. Visual graphic design is needed to convey the content message and provide branding for products and services.

This degree is designed to prepare the Internet professional to design web pages and to program for the web. It provides the working knowledge of various programming languages, multimedia technologies, graphic development, and web design tools. The Internet professional may be involved with designing, developing, operating, maintaining and managing web-based publishing.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete all college and program requirements qualify for an associate in applied science degree.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3
CIS 129	Introduction to Programming Logic.....	3
CGT 136	Web Design and Development 1	3

Total Credits 15

First Year—Winter Semester

MATH 113	Intermediate Algebra for College Students.....	4
ENG 101	English Composition 1	3
CIS 171	Introduction to Networking	3
COMA 103	Fundamentals of Speech	3
CGT 163	Web Design and Development 2	3

Total Credits 16

First Year—Spring Session

ENG 102	English Composition 2	3
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Total Credits 3

Second Year—Fall Semester

CIS 250	Systems Development and Design	4
CGT 234	Web Design and Development 3	3
CIS 238	JavaScript	3
Social Science	Select 1	3
POLS 105	Survey of American Government	
PSYCH 153	Human Relations	
Elective	Select from the list below	3

Total Credits 16

Second Year—Winter Semester

HUM 106	Introduction to Art and Music	1
CGT 237	Dynamic Web Design With ColdFusion	3
CGT 211	Flash	3
Science*	Select any General Education Science course ...	4
Elective	Select from the list below	3

Total Credits 14

PROGRAM TOTAL 64 CREDITS

* Number of credits may vary depending on the General Education Science course selected.

Students planning to transfer should check the transfer institution's requirements/guides or discuss their options with a counselor or advisor. Number of credits may vary depending on the course selection.

Electives

CIS 125	Principles of Information Security.....	3
CIS 176	Visual Basic.NET	3
CIS 185	Introduction to HTML.....	3
CIS 223	Introduction to C#.....	3
CIS 225	Database Management Systems	3
CIS 255	Introduction to LINUX	3
CGT 141	Introduction Interactive Media and Game Design.....	3
CGT 206	Scripting for Interactive Media and Game Design.....	3

Computer Information Systems: Web Specialist Certificate

The technology of the Internet is constantly evolving both in terms of delivery infrastructure and web site development tools. To stay abreast of these technological advances requires programming and design knowledge, skills and experience. A good site must include both quality visual communication design and functionality. Programming is needed for interactivity to search databases and track usage. Visual graphic design is needed to convey the content message and provide branding for products and services.

This certificate is designed to provide students with an overview of the technical programming and graphic design areas for web page development.

All courses are not offered each semester. Students should work with an academic advisor or counselor to develop a schedule that will work for them. Students who satisfactorily complete the program requirements qualify for a certificate of program completion.

SAMPLE SCHEDULE OF COURSES

First Year—Fall Semester

CGT 109	Design Concepts and Technology	3
CGT 123	Illustration—Illustrator	3
CGT 125	Digital Imaging 1—Photoshop.....	3
CGT 136	Web Design and Development 1	3

Total Credits 12

First Year—Winter Semester

CIS 129	Introduction to Programming Logic.....	3
CGT 163	Web Design and Development 2	3
CIS 238	JavaScript	3
CGT 211	Flash	3

Total Credits 12

Second Year—Fall Semester

CGT 234	Web Design and Development 3	3
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Total Credits 3

Second Year—Winter Semester

CGT 237	Dynamic Web Design With ColdFusion	3
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Total Credits 3

PROGRAM TOTAL 30 CREDITS

Computer Information Systems Post-Associate Certificate

This post-associate certificate in computer science information systems is designed for working professionals who have experience and/or training in the computer field. This certificate will provide study in the newest technology and will enhance students' ability to meet the needs of the ever changing computer information systems environment.

Prior to admission in this program, students must have already completed a minimum of an accredited associate degree in applied science. All courses are not offered each semester. Students should work with an academic advisor or counselor to set up a schedule that will work for them. The post-associate certificate is awarded upon successful completion of 16 credit hours (exact number may vary slightly due to credit value of courses).

Program Courses

CIS 185	Introduction to HTML.....	3
CIS 211	Introduction to C++.....	2
CIS 221	Advanced C++.....	2
CIS 223	Introduction to C#.....	3
CIS 235	Managing and Troubleshooting PCs.....	3
CIS 238	JavaScript.....	3
CIS 250	Systems Development and Design.....	4
CIS 251	IT Project Management.....	3
CIS 255	Introduction to LINUX.....	3
CIS 260	Introduction to UNIX.....	3
CIS 265	Networking 1.....	3
CIS 276	Networking 2.....	3
CIS 290	Object-Oriented Programming with Java.....	3

Completion of a minimum of 16 credit hours is required.

Courses can be taken through independent study.