

# *COMPUTER INFORMATION SYSTEMS*

## *Certificates*

- *Computer Technician*
- *Webmaster*

## *Associate*

- *Associate in Computer Information Systems*
- *Associate in Computer Science*
- *Web Design & Internet Development*

## *Partnership Programs*

- *Central Michigan University*
- *Davenport University*
- *Ferris State University*
- *Franklin University*
- *Saginaw Valley State University*

See information on our partnership programs on the web at

<http://www.kirtland.edu/students/transferfrom/>

## **Foundation**

Kirtland Community College recognizes the importance of students possessing basic academic skills in English, reading, and mathematics in order to successfully complete college-level courses. Therefore, all entry-level students are required to demonstrate their proficiency in basic academic skills, as these courses are the foundation for success in all programs. The student's advisor will indicate which of the following courses need to be taken based on ACT scores or COMPASS placement testing results. It is highly recommended that students take these courses during the first semester in order to prepare for the road ahead, as well as possibly satisfying prerequisites needed for more advanced courses. Specific courses needed may be tracked below. *Students must plan additional time to complete their program requirements if placement results demonstrate the need to begin with preparatory courses (courses numbered less than 10000).*

- |  |   |
|--|---|
| <input type="checkbox"/> ENG-10000 Writing Lab (if required) | <input type="checkbox"/> Mathematics: _____ |
| <input type="checkbox"/> English: _____                      | <input type="checkbox"/> Reading: _____     |

**For more information, please contact the Computer Information Systems Department.**

Lisa Balbach ([lisa.balbach@kirtland.edu](mailto:lisa.balbach@kirtland.edu))

989-275-5000, extension 414

# COMPUTER TECHNICIAN

## Certificate of Completion (CTEC0)

**Minimum Credits: 33**  
**Contact Hours: 33-34**

### Introduction

Kirtland Community College's Computer Technician program is designed to provide a comprehensive background of training necessary for success in technically oriented, computer-related jobs. Students will acquire skills that will allow them to analyze hardware and software related problems, assess solutions, implement the best solution, and evaluate the results. The program is intended to lay a foundation for a large variety of entry-level positions in the computer repair field. Emphasis is placed on both theoretical and hands-on applications. Students may also elect to pursue the Associate in Applied Science: Technology Management degree at any point in this program.

Course	Title	Credits
CIS-10500	Introduction to Computers	3
CIS-19600	Hardware Certification	3
CIS-19700	OS Certification	3
CIS-22400	UNIX	2
CIS-26000	Intro to Computer Networking	3
CIS-27001	Programming I	3
CIS-280--	Internship in Computer Info Sys	3-9
CIS-21000 Or CIS-26100 And CIS-26200 And CIS-26300	Internet & Web Page Development Or Internet And Web Pages And Advanced Web Pages	3
ENG-10000	Writing Lab, if needed	0-1
ENG-10303	English Composition I w/Computers	3
<b>Electives from following list:</b>		1-6
CIS-11700	Visual Basic I	3
CIS-17001	Microsoft Office	3
CIS-22500	Spreadsheets	3
CIS-23501	Database Design	3
CIS-26400	JavaScript	3
CIS-27101	Programming II	4
MTH-12000	Intermediate Algebra	4
OIS-10100	Basic Keyboarding	1



# WEB DESIGN & INTERNET DEVELOPMENT

Associate in Applied Science (DWDI0)

Minimum Credits: 73-77

Contact Hours: 84-88

## Introduction

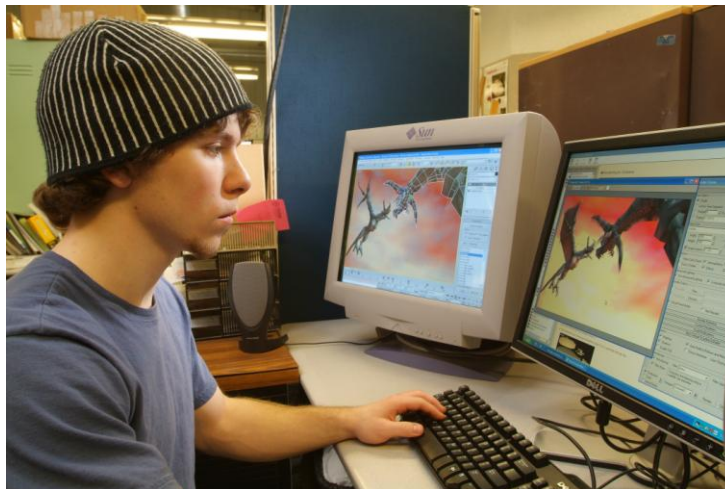
Kirtland's Associate in Applied Science—Web Design & Internet Development—is designed to provide specialized instruction that is necessary for entry and success in the web development, graphic design and Internet sale/marketing industries. The curriculum is based upon solid academic, computer, business and studio art courses focusing on conceptual, theoretical, practical, and technical skills. The major core curriculum is based upon traditional practices and in-depth use of technology.

### General Education Requirements, 21-25 credits:

Course	Title	Credits
CIS-10500	Introduction to Computers	3
ENG-10000	Writing Lab (if required)	0-1
ENG-10303	English Composition I with Computers	3
ENG-10602	Technical Writing	3
MTH-12000	Intermediate Algebra or higher	3-4
POL-10100	Introduction to American Government	3
SPE-10500 Or SPE-11400	Fund of Speech Or Intro to Interpersonal/Public Comm	3
	Any Science course with a lab	3-5

### Major Requirements, 52 credits:

ART-10500	Introduction to Design	3
ART-10600	Fundamentals of Drawing I	3
ART-11500 Or ART-27550	Photography I Or Digital Darkroom	3
ART-17000	Graphic Studio	3
ART-19000	Digital Communications	3
ART-27545	Computer Generated Images I	3
ART-25000 Or ART-27546	Illustration I Or Computer Generated Images II	3
ART-28000	Portfolio I	3
BUS-10100	Introduction to Business	3
BUS-21100	E-Commerce Mangement (This course should be taken after CIS-21000)	3
CIS-21000	Internet & Web Development	3
CIS-21500	Web Animation & Multimedia	3
CIS-21900	MacIntosh OS X	1
CIS-26400 Or CIS-27200	JavaScript Or Web Programming	3
CIS-27001	Programming I	3
MKT-11500	Customer Relations	3
MKT-20200	Internet Marketing	3
MKT-20400	Advertising	3



# WEBMASTER

Certificate of Completion (CWEB0)

Minimum Credits: 45

Contact Hours: 48-54

## Introduction

Kirtland Community College's Webmaster certificate is designed to provide a background of training necessary for web based programming and development. The certificate is designed to meet the needs of two distinct groups of students: students desiring more technical programming and students desiring more artistic programming. The two tracks described below meet the needs of each group. Both tracks provide students with the skills needed to develop both static and dynamic (interactive) web pages. Students following either track may also elect to pursue the Associate in Applied Science: Technology Management degree at any point in this program.

## Technical Track

Courses in this track focus on basic and advanced web development programming skills. Students will also obtain a broad background in hardware, software and networking.

## Graphic Design Track

Many graphic designers are also webmasters. Courses in this track include both graphic design and basic web programming skills which will give students expertise in both areas.

### Required Courses in Both Tracks (30 credits):

The courses outlined below are required in both tracks of this certificate program:

Course	Title	Credits
ART-10500	Introduction to Design	3
ART-19000	Digital Communications	3
ART-27545	Computer Generated Images I	3
ENG-10403 Or ENG-10602	English Composition II w/Computers Or Technical Writing w/Computers	3
CIS-10500	Introduction to Computers	3
CIS-21000	Internet and Web Development	3
CIS-21500	Web Animation & Multimedia	3
CIS-26400	JavaScript	3
CIS-27001	Programming I	3
CIS-27201	Web Programming	3

### Additional Courses in Technical Track (15 credits):

CIS-22400	UNIX	2
CIS-26000	Intro to Networking	3
CIS 27101	Programming II	4
<b>CIS Electives (Select 2 courses):</b>		
CIS-11700	Visual Basic I	3
CIS-17001	Microsoft Office	3
CIS-19600	Hardware Certification	3
CIS-19700	OS Certification	3
CIS-23501	Database Design	3
CIS-28000	Internship	3

### Additional Courses in Graphic Design Track (16 credits):

ART-10600	Fundamentals of Drawing I	3
ART-11500	Photography I	3
ART-25000	Illustration I	3
ART-28000	Portfolio I	3
CIS-21900	MacIntosh OS X	1
<b>Art Electives (Select 1 course):</b>		
ART-17000	Graphic Studio	3
ART-20600	Drawing II	3
ART-21500	Photography II	3
ART-27546	Computer Generated Images II	3

# ASSOCIATE IN COMPUTERS

Computer Science (DACP0)  
or Computer Information Systems (DACP1)

**Minimum Credits: 60**

**Contact Hours: 62-69**

**Contact Hours: 65-70**

## Introduction

Students interested in pursuing a career in the computer field should plan to eventually complete a bachelor's degree at a four-year school of their choice. Computer majors are found in two separate areas: Computer Information Systems and Computer Science.

Computer Science degrees are mathematically and engineering oriented. Positions of employment would include computer programmers, systems programmers, software engineers, systems engineers, database administrators, network administrators, systems administrators, or systems analysts. Degrees in this area include the following: Software Engineering, Computer Science, Computer Engineering or Computer Networking.

Computer Information Systems degrees are business oriented. Positions of employment would include computer programmers, application programmers, systems analysts, network administrators, database administrators, systems administrators, web developers, or microcomputer specialists. Degrees in these areas include the following: Management Information Systems (MIS), Computer Information Systems (CIS) or Information Systems (IS).

**Students planning to transfer to a four-year college or university must consult with a Computer Information Systems (CIS) advisor and carefully study the requirements of the four-year institution from which they intend to secure a bachelor's degree.** Appropriate course substitutions may be made upon the recommendation of a student's advisor and with the approval of the appropriate dean. Substitutions are only made in accordance with the specific requirements of the baccalaureate degree granting institution to which the student intends to transfer.

Students who have previously attended other colleges or universities may apply earned transfer credit in subject areas (i.e., psychology, elective, biology elective etc.) where deemed appropriate. This degree also satisfies the requirements of the MACRAO Transfer Agreement as defined in the handbook section of the college catalog.

### Suggested sequencing of courses for Computer Science (DACP0):

<b><u>Year 1: Fall Semester</u></b> Chemistry with lab CIS 10500—Intro to Computers ENG-10000—Writing Lab ENG-10303—English Composition I MTH-13000—College Algebra or higher or elective from list if math sequence is complete (excluding MTH-20500/20600)	<b><u>Year 2: Fall Semester</u></b> CIS-27001—Programming I GEO-10000 or POL-20000 or POL-20100—World Geography or International Relations or Comparative Government Humanities elective from ART, MUS, or THE MTH-22002—Calculus I or higher or elective course from list if math sequence is already completed SPE-10500 or SPE-11400—Fund of Speech or Interpersonal & Public Comm
<b><u>Year 1: Winter Semester</u></b> ENG-10403—English Composition II MTH-18001—Pre-Calculus or higher or elective from list if math sequence is complete (excluding MTH-20500/20600) POL-10100—Intro to American Government PSY-10100 or SOC-10100—Intro to Psychology or Intro to Sociology CIS or MTH elective from list	<b><u>Year 2: Winter Semester</u></b> BIO course from list CIS-27101—Programming II CIS or MTH elective from list HIS course from list Humanities elective—Language or Literature course

### Suggested sequencing of courses for Computer Information Systems (DACP1):

<b><u>Year 1: Fall Semester</u></b> Chemistry with lab CIS 10500—Intro to Computers ENG-10000—Writing Lab ENG-10303—English Composition I MTH-12000—Intermediate Algebra or higher or elective from list if math sequence is complete (excluding MTH-20500/20600)	<b><u>Year 2: Fall Semester</u></b> CIS-27001—Programming I GEO-10000 or POL-20000 or POL-20100—World Geography or International Relations or Comparative Government Humanities elective--Language or Literature course SPE-10500 or SPE-11400—Fund of Speech or Interpersonal & Public Comm CIS elective from approved list
<b><u>Year 1: Winter Semester</u></b> BIO course from list ENG-10403—English Composition II MTH-13000—College Algebra or higher or elective from list if math sequence is complete (excluding MTH-20500/20600) POL-10100—Intro to American Government PSY-10100 or SOC-10100—Intro to Psychology or Intro to Sociology	<b><u>Year 2: Winter Semester</u></b> CIS-27101—Programming II CIS or MTH elective from list HIS course from list Humanities elective from ART, MUS, or THE 2 CIS electives from approved list

**Note: Electives are degree-specific, and are listed on the following pages. For assistance with course selection, sequencing and arranging your schedule, please consult with your advisor.**

**ASSOCIATE IN COMPUTERS**

Computer Science (DACP0)

**Minimum Credits: 60****Contact Hours: 62-69****Communications (12-13 credits):**

Course	Title	Credits
CIS-10500	Introduction to Computers	3
ENG-10000	Writing Lab, if required	0-1
ENG-10303	English Composition I w/Computers	3
ENG-10403	English Composition II w/Computers	3
SPE-10500 Or SPE-11400	Fundamentals of Speech Or Intro to Interpersonal & Public Communication	3

**Humanities (8-10 credits):**

	Select 2-3 credits from Art, Music, or Theatre	2-3
<i>Note:</i>	Select 3-4 credits from Languages or Literature <i>See CIS advisor for recommended courses.</i>	3-4
HIS-10500 Or HIS-10600 Or HIS-20100 Or HIS-20200 Or HIS-20300 Or HIS-20400	History of World Societies to 1500 Or History of World Societies Since 1500 Or United States History to 1865 Or United States History Since 1865 Or Michigan History Or The American Civil War	3

**Social Science (9-10 credits):**

PSY-10100 Or SOC-10100	Introduction to Psychology Or Introduction to Sociology	3
GEO-10000 Or POL-20000 Or POL-20100	World Geography Or International Relations Or Comparative Government	3-4
POL-10100	Introduction to American Government	3

**Math/Natural Science (10-24 credits):**

MTH-12000	Intermediate Algebra (if needed)	0-4
MTH-13000	College Algebra (if needed)	0-4
MTH-18001	Pre-Calculus (if needed)	0-4
MTH-22002	Calculus I or higher	3-4
<i>Note:</i>	Chemistry w/lab <i>See CIS advisor for recommended course.</i>	4-5
BIO-10100 Or BIO-20100 Or BIO-20200 Or BIO-21000 Or BIO-21300 <i>Note:</i>	General Biology Or General Botany Or General Zoology Or Microbiology Or Nature Study <i>See CIS advisor for recommended course.</i>	3-4

**CIS Requirements and approved electives (7-21 credits):**

CIS-27001	Programming I	3
CIS-27101	Programming II	4
<b>Approved electives * (See note below):</b>		
CIS-11700	Visual Basic I	3
CIS-17001	Microsoft Office	3
CIS-22400	UNIX	2
CIS-23501	Database Design	3
CIS-26000	Intro to Computer Networking	3
MTH-22102	Calculus II	4
<b>*Note:</b>	<b>MTH-20500 or 20600 cannot be used to fulfill requirements for this degree.</b>	

**ASSOCIATE IN COMPUTERS**

Computer Information Systems (DACP1)

**Minimum Credits: 60****Contact Hours: 65-70****Communications (12-13 credits):**

Course	Title	Credits
CIS-10500	Introduction to Computers	3
ENG-10000	Writing Lab, if required	0-1
ENG-10303	English Composition I w/Computers	3
ENG-10403	English Composition II w/Computers	3
SPE-10500 Or SPE-11400	Fundamentals of Speech Or Intro to Interpersonal & Public Communication	3

**Humanities (8-10 credits):**

	Select 2-3 credits from Art, Music, or Theatre	2-3
Note:	Select 3-4 credits from Languages or Literature See CIS advisor for recommended courses.	3-4
HIS-10500 Or HIS-10600 Or HIS-20100 Or HIS-20200 Or HIS-20300 Or HIS-20400	History of World Societies to 1500 Or History of World Societies Since 1500 Or United States History to 1865 Or United States History Since 1865 Or Michigan History Or The American Civil War	3

**Social Science (9-10 credits):**

PSY-10100 Or SOC-10100	Introduction to Psychology Or Introduction to Sociology	3
GEO-10000 Or POL-20000 Or POL-20100	World Geography Or International Relations Or Comparative Government	3-4
POL-10100	Introduction to American Government	3

**Math/Natural Science (10-17 credits):**

BIO-10100 Or BIO-20100 Or BIO-20200 Or BIO-21000 Or BIO-21300	General Biology Or General Botany Or General Zoology Or Microbiology Or Nature Study	3-4
Note:	See CIS advisor for recommended course.	
Note:	Chemistry w/lab See CIS advisor for recommended course.	4-5
MTH-12000	Intermediate Algebra (if needed)	0-4
MTH-13000	College Algebra	3-4

**CIS Requirements and approved electives (10-21 credits):**

CIS-27001	Programming I	3
CIS-27101	Programming II	4
<b>Approved electives * (See note below):</b>		
ACC-12100	Accounting Principles I	4
ACC-12200	Accounting Principles II	4
BUS-10100	Introduction to Business	3
CIS-11700	Visual Basic I	3
CIS-17001	Microsoft Office	3
CIS-22400	UNIX	2
CIS-22500	Spreadsheets	3
CIS-23501	Database Design	3
CIS-26000	Intro to Computer Networking	3
ECO-20100	Principles of Economics-Macroeconomics	3
ECO-20200	Principles of Economics-Microeconomics	3
*Note:	<b>MTH-20500 or 20600 cannot be used to fulfill requirements for this degree.</b>	