



# TRAINING AND CAREER PROGRAMS

## CERTIFICATE AND DEGREE PROGRAMS

### COMPUTER APPLICATIONS TECHNOLOGY

**Division Chair - Instructional Computing:** Betty Vickrey (623) 935-8081

**Degree:** Associate in Applied Science (AAS), Computer Applications Technology  
(NOTE: See page 65 for AAS degree requirements.)

**Certificate:** Computer Applications Technology

#### Computer Applications Technology AAS Degree Requirements

**Program Description:** This program consists of 70 credits and includes courses in the following microcomputer areas: general usage and applications, operating systems, word processing, database, spreadsheets, and desktop publishing. Other skills which are integrated with the microcomputer training are accounting, English and math.

Many of the courses are offered in a self-paced format to enable students to enter and complete the program in a timely and flexible manner. Students take the courses for personal development of microcomputer skills and to prepare for or enhance employment. The degree program is designed to prepare students for entry level occupations in the rapidly expanding field of business computer information systems. Upon completion of the program, students should be able to operate a microcomputer and use a variety of software in a professional manner.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

#### Required Courses: (39 Credits)

		<b>CREDITS</b>
ACC 111	Accounting Principles I	3
ACC 115	Computerized Accounting	2
BPC 110	Computer Usage and Applications	3
BPC/CIS 114	Electronic Spreadsheet (any module)	3
BPC/CIS 117	Database Management (any module)	3
BPC/CIS 120	Microcomputer Graphics (any module)	1
BPC/CIS 123AA	Microsoft Windows	1
+ BPC/OAS 135	Word Processing Software (any module)	2
BPC 138	Desktop Publishing (any module)	3
BPC/CIS 133DA	The Internet	3
CIS105	Survey of Computer Information Systems	3
+CIS190	Introduction to Local Area Networks	3
CIS298AC	Special Projects	3
+GBS 233	Business Communication	3
TQM101	Quality Customer Service	3

**NOTE:** Students must earn a grade of "C" or better for each course in the Required Courses category.

**Restricted Electives: (9 Credits)**

+ACC 112	Accounting Principles II	3
BPC118AB	Powerpoint: Level I	1
+CIS140	Survey of Multimedia Technology	2
+CIS 162	C Programming I	3
+CSC 181	Applied Problem Solving with BASIC	3
+CIS233DA	The Internet Web Publishing	3
OAS101AA	Typing I: Keyboard Mastery (1) OR	
OAS102	Typing II: Document Production (3)	1-3
TQM201	Total Quality Concepts	2

+indicates that a prerequisite is required

**General Studies Requirements: (25 Credits)****Core: (15 Credits)****First Year Composition:**

+ENG 101 First Year Composition (3) AND	
+ENG 111 Technical Writing (3)	
(ENG102 First Year Composition is acceptable if ENG111 is not available)	6

**Oral Communication:**

COM 100 Introduction to Human Communication (3) <b>OR</b>	
COM 110 Interpersonal Communication (3) <b>OR</b>	
COM 225 Public Speaking (3) <b>OR</b>	
COM 230 Small Group Communication (3)	3

**Critical Reading:**

+CRE 101 Critical and Evaluative Reading I (3) <b>OR</b>	
+CRE 111 Critical Reading for Business and Industry (3)	3

**Mathematics:**

+MAT 122 Intermediate Algebra Accelerated or equivalent	3
---	---

**Distribution: (10 Credits)****Humanities & Fine Arts:**

Any approved course	3
---------------------	---

**Natural Science:**

Any approved general studies course from the Natural Science area	4
---	---

**Social & Behavioral Sciences:**

ECN 112 Microeconomic Principles	3
----------------------------------	---

## Computer Applications Technology Certificate Requirements

**Program Description:** This program consists of 32 credits and includes courses in the following microcomputer areas: general usage and applications, operating systems, word processing, database, spreadsheets, and desktop publishing. With proper choices, a student who completes the Certificate may apply all those courses toward the AAS Degree program.

Many of the courses are offered in a self-paced format to enable students to enter and complete the program in a timely and flexible manner. Students take the courses for personal development of microcomputer skills and to prepare for or enhance employment. The degree program is designed to prepare students for entry level occupations in the rapidly expanding field of business computer information systems. Upon completion of the program, students should be able to operate a microcomputer and use a variety of software in a professional manner.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

### Required Courses: (28 Credits)

		CREDITS
ACC 111	Accounting Principles I	3
ACC 115	Computerized Accounting	2
BPC/CIS 114	Electronic Spreadsheet (any module)	3
BPC/CIS 117	Database Management (any module)	3
BPC/CIS 120	Microcomputer Graphics (any module)	1
BPC/CIS 123AA	Microsoft Windows	1
BPC/CIS 133AA	The Internet: Level I	1
+ BPC/OAS 135	Word Processing Software (any module)	2
BPC 138	Desktop Publishing (any module)	3
CIS105	Survey of Computer Information Systems	3
+GBS 233	Business Communication	3
TQM101	Quality Customer Service	3

NOTE: Students must earn a grade of "C" or better for each course in the Required Courses category.

### Restricted Electives: (4 Credits)

BPC118AB	Powerpoint: Level I	1
+CIS140	Survey of Multimedia Technology	2
+CIS190	Introduction to Local Area Networks	3
OAS101AA	Typing I: Keyboard Mastery (1) OR	
OAS102	Typing II: Document Production (3)	1-3

+indicates that a prerequisite is required

## COMPUTER HARDWARE AND DESKTOP SUPPORT

**Division Chair - Instructional Computing: Betty Vickrey**  
(623) 935-8081

**Certificate:** Computer Hardware and Desktop Support

### Computer Hardware and Desktop Support Certificate Requirements

**Program Description:** The Certificate of Completion in Computer Hardware and Desktop Support is designed to provide training to work in an entry-level computer maintenance and help-desk position. Students will be provided the opportunity to apply technical concepts, fundamentals, and interpersonal skills in a help-desk environment through an internship.

Computer hardware and help-desk professionals can work in several different scenarios. They may build computers, analyze and troubleshoot hardware problems, repair and refurbish computers, install and configure software, train end-users on application usage, and assist end-users with computer hardware and software problems. In addition to being technically competent, it is important to have strong interpersonal skills.

Career opportunities include help desk technician, computer repair technician, manufacturing, and sales. The salary range is \$20,000 to \$37,000 depending on experience and position. This area is expected to grow by 46% by the year 2005 as more computer equipment is used.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

#### Required Courses: (15-16 Credits)

		<b>CREDITS</b>
BPC 110	Computer Usage and Applications OR	
CIS 105	Survey of Computer Information Systems	3
BPC/CIS 121AB	MS-DOS Operating System	1
+BPC 170	Computer Maintenance I: A+ Prep	3
+BPC 171	Recycling Used Computer Technology	1
CIS 102	Customer Service/Technical Support	1
+CIS 103	Using Help Desk Software	2
+CIS190	Introduction to Local Area Networks OR	
CNT140	Cisco Networking Fundamentals OR	
MST 140	Microsoft Networking Essentials	3-4
+CIS290AA	Computer Information Systems Internship	1

NOTE: Students must earn a grade of "C" or better for each course in the Required Courses category.

+indicates that a prerequisite is required

## Desktop Publishing Certificate Requirements

**Division Chair - Instructional Computing: Betty Vickrey**  
**(623) 935-8081**

**Certificate:** Desktop Publishing

**Program Description:** The Desktop Publishing certificate is designed to prepare students to work with and design professional publications. Courses focus on training the student in project management, internet navigation, desktop design, web page design, graphics design, and written communication skills.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree or certificate requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

### Required Courses: (33 Credits)

	<b>CREDITS</b>
Certificate of Completion in Computer Technology	16
+BPC/CIS120BA Microcomputer Graphics: IBM Adobe Illustrator	1
+BPC/CIS120AF Microcomputer Graphics: IBM Adobe	1
BPC/CIS133DA The Internet/World Wide Web (3) OR	
BPC133AA The Internet/World Wide Web Level I (1) AND	
+BPC133BA The Internet/World Wide Web Level II (1) AND	
+BPC133CA The Internet/World Wide Web Level III (1)	3
+BPC138AA Windows Desktop Design & Publishing (3) OR	
+BPC138AB Macintosh Desktop Design & Publishing (3)	3
+BPC238AA Windows Advanced Desktop Publication (3) OR	
+BPC238AB Macintosh Advanced Desktop Publication (3)	3
+CIS233DA The Internet Web Publishing (3) OR	
+CIS233AA The Internet Web Publishing I (1) AND	
+CIS233BA The Internet Web Publishing II (1) AND	
+CIS233CA The Internet Web Publishing III (1)	3
CIS124AA Project Management Software: Level I	1
+TQM105 Writing for Quality Results	2

NOTE: Students must earn a grade of "C" or better in all courses within the program. And Certificates may contain additional course requirements.

+indicates course has prerequisites and/or corequisites

++ indicates any module

## HOSPITALITY/HOTEL MANAGEMENT

**Division Chair - Occupational Education: Steve Shriver**  
(623) 935-8461

**Degree:** Associate in Applied Science (AAS), Hospitality/Hotel Management  
(NOTE: See page 65 for AAS degree requirements.)

**Certificate:** Hospitality/Hotel Management

### Hospitality/Hotel Management AAS Degree Requirements

**Program Description:** The Hospitality/Hotel Management program is designed to train graduates for management careers in the hotel industry. The hospitality industry is among the fastest growing in the United States, offering numerous career opportunities. This program also transfers to four –year colleges and universities.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

<b>Required Courses: (32 Credits)</b>		<b>CREDITS</b>
HRM110	Introduction to Hospitality Management	3
HRM120	Hotel Facility Management	3
HRM126	Food Service Cost Systems	2
HRM130	Guest Services Management	3
HRM140	Food Production Concepts	3
HRM244	Quality Sanitation Management	3
CIS105	Computer Information Systems	3
HRM270	Hospitality Marketing	3
HRM275	Restaurant Management	3
HRM280	Hotel and Restaurant Law	3
MGT101	Techniques of Supervision	3

<b>Restricted Electives: (minimum of 7 credits)</b>		
ACC111	Accounting Principles I	3
HRM260	Hospitality Human Resources Management	3
HRM 296	Cooperative Education	1
HRM 298AA	Special Projects	1
TQM101	Quality Customer Service	3

NOTE: Students must earn a grade of "C" or better for each course in the Required Courses category.

### **General Studies Requirements: (25-27 Credits)**

#### **Core: (15-17 Credits)**

#### **First-Year Composition:**

ENG 101	First-Year Composition (3) and	
ENG102	First-Year Composition (3)	6

#### **Oral Communication:**

COM 100	Introduction to Human Communication (3) or	
COM100AA	Intro to Human Communication Part I (1) and	
COM100AB	Intro to Human Communication Part II (1) and	
COM100AC	Intro to Human Communication Part III (1) or	
COM110	Interpersonal Communication (3) or	
COM225	Public Speaking (3) or	
COM 230	Small Group Communication	3

**Critical Reading:**

CRE101	Critical and Evaluative Reading I or equivalent by assessment	3
--------	---	---

**Mathematics:**

	Any approved general studies course from the Mathematics area	3-5
--	---	-----

**Distribution: (10 Credits)****Humanities and Fine Arts:**

	Any approved general studies course from the Humanities area	3
--	--	---

**Natural Sciences:**

	Any approved general studies course from the Natural Sciences area	4
--	--	---

**Social and Behavioral Sciences:**

ECN111	Macroeconomic Principles OR	
PSY101	Introduction to Psychology (3) OR	
SOC101	Introduction to Sociology (3)	3

+indicates that a prerequisite is required

## Hospitality/Hotel Management Certificate Requirements

**Program Description:** The Hospitality/Hotel Management program is designed to train graduates for management careers in the hotel industry. The hospitality industry is among the fastest growing in the United States, offering numerous career opportunities. This program also transfers to four –year colleges and universities.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Required Courses: (32 Credits)**

		CREDITS
HRM 110	Introduction to Hospitality Management	3
HRM 120	Hotel Facility Management	3
HRM 126	Food Service Cost Systems	2
HRM 130	Guest Services Management	3
HRM 140	Food Production Concepts	3
HRM 244	Quality Sanitation Management	3
CIS105	Computer Information Systems	3
HRM 270	Hospitality Marketing	3
HRM 275	Restaurant Management	3
HRM 280	Hotel and Restaurant Law	3
MGT 101	Techniques of Supervision	3

**Restricted Electives: (6 credits)**

ACC111	Accounting Principles I	3
HRM260	Hospitality Human Resources Management	3
TQM101	Quality Customer Service	3

NOTE: Students must earn a grade of “C” or better for each course in the Hospitality/Hotel Management program.

## MICROSOFT NETWORKING TECHNOLOGY

**Division Chair - Instructional Computing: Betty Vickrey**  
**(623) 935-8081**

**Degree:** Associate in Applied Science (AAS), Microsoft Networking Technology  
 (NOTE: See page 65 for AAS degree requirements.)

**Certificates:** Microsoft NT Product Specialist  
 Microsoft Systems Engineer  
 Microsoft Networking Technology

### Microsoft Networking Technology AAS Degree Requirements

**Program Description:** Estrella Mountain Community College, a Microsoft Authorized Academic Training Program provider, prepares students for industry-recognized certification. The curriculum is taught by Microsoft Certified Professionals.

The Associate of Applied Science in Microsoft Networking Technology provides training for a supervisory-level position working with Windows NT networks. The program develops skills to install, configure, customize, optimize, and troubleshoot Windows NT Server, Windows NT Workstation, Microsoft Backoffice products, and to interoperate with Novell and UNIX systems. Courses in the program also prepare for Microsoft Certified Product Specialist and Microsoft Certified Systems Engineer examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

#### Program Prerequisites: (3 credits)

CIS105 Survey of Computer Information Systems (3) OR  
 Permission of Department or Division

#### Required Courses: (30 Credits)

		<b>CREDITS</b>
	BPC/CIS121AB MS-DOS Operating System	1
+	BPC170 Computer Maintenance I: A+ Prep	3
	CIS102 Customer Service/Technical Support	1
	CIS126DA UNIX Operating System (3) OR	
	CIS126AA UNIX Operating System: Level I (1) AND	
+	CIS126BA UNIX Operating System: Level II (1) AND	
+	CIS126CA UNIX Operating System: Level III (1)	3
+	CIS191 Novell NetWare System Administration	3
+	CIS270 Data Communications	3
	MST140 Microsoft Networking Essentials	3
+	MST150 Microsoft Windows NT Administration	3
+	MST152 Microsoft Windows NT Core	4
+	MST154 Microsoft Windows NT Enterprise	3
+	MST240 Microsoft Transmission Control Protocol/Internet Protocol (TCP/IP)	3

**Restricted Electives: (9 Credits)**

**Note:** Students should select nine (9) credits from the following courses in consultation with a program advisor:

BPC110	Introduction to Microcomputers	3
BPC171	Recycling Used Computer Technology	1
+ CIS159	Visual Basic Programming I	3
+ CIS162AB	C++: Level I	3
+ CIS296WA-WS	Cooperative Education (any module)	1-4
CNT140	Cisco Networking Fundamentals	4
+ CNT150	Cisco Networking Router Technologies	3
+ MST241	Microsoft Internet Information Server (IIS)	3
+ MST242	Microsoft Exchange Server	4
+ MST243	Microsoft Systems Management Server (SMS)	3
+ MST244	Microsoft Structured Query Language (SQL) Server Level I	3
+ MST246	Implementing Microsoft Internet Explorer	2
+ MST247	Microsoft Proxy Server	2
+ MST252	Microsoft Windows Network Update	3
+ MST254	Microsoft Structured Query Language (SQL) Server Level II	3
MST298AA-AC	Special Projects (Any module)	1-3

+indicates that a prerequisite is required

**General Studies Requirements: (25 Credits)****Core: (15 Credits)****First-Year Composition:**

+ ENG101	First-Year Composition (3) AND	
+ ENG102	First-Year Composition (3) OR	
+ ENG107	English for Speakers of Other Languages (3) AND	
+ ENG108	English for Speakers of Other Languages (3)	6

**Oral Communication:**

COM100	Introduction to Human Communication (3) OR	
COM110	Interpersonal Communication (3) OR	
COM230	Small Group Communication (3)	3

**Critical Reading:**

+ CRE101	Critical and Evaluative Reading I (3) OR equivalent as indicated by assessment	3
----------	---	---

**Mathematics:**

+ Any approved general studies course in the Mathematics area		3
---	--	---

**DISTRIBUTION: (10 Credits)****Humanities and Fine Arts:**

Any approved general studies course in the Humanities and Fine Arts area		3
--	--	---

**Social and Behavioral Sciences:**

Any approved general studies course in the Social and Behavioral Sciences area		3
--	--	---

**Natural Sciences:**

Any approved general studies course in the Natural Sciences area		4
--	--	---

## Microsoft Product Specialist Certificate Requirements

**Program Description:** Estrella Mountain Community College, a Microsoft Authorized Academic Training Program provider, prepares students for industry-recognized certification. The curriculum is taught by Microsoft Certified Professionals.

The Certificate of Completion in Microsoft Product Specialist provides training for an entry-level position working with Windows networks. Knowledge and skills are developed to install, configure, customize, optimize, and troubleshoot Windows servers and Windows client workstations. Courses in the program also prepare for Microsoft Certified Product Specialist and Microsoft Certified Systems Engineer examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

### Program Prerequisites: (3 credits)

CIS105      Survey of Computer Information Systems (3) OR  
Permission of Department or Division

### Required Courses: (14 Credits)

		CREDITS
	BPC/CIS121AB MS-DOS Operating System	1
+	BPC170 Computer Maintenance I: A+ Prep	3
	MST140 Microsoft Networking Essentials	3
+	MST150 Microsoft Windows NT Administration	3
+	MST152 Microsoft Windows NT Core	3

NOTE: Students must earn a grade of "C" or better for each course in the Required Courses category.

+indicates that a prerequisite is required

## Microsoft Systems Engineer Certificate Requirements

**Program Description:** Estrella Mountain Community College, a Microsoft Authorized Academic Training Program provider, prepares students for industry-recognized certification. The curriculum is taught by Microsoft Certified Professionals.

The Certificate of Completion in Microsoft Systems Engineer provides training for an intermediate- to supervisory-level position working with Windows networks. The program develops skills to install, configure, customize, optimize, and troubleshoot Windows servers, Windows client workstations and Microsoft Backoffice products. Courses in the program also prepare for Microsoft Certified Product Specialist and Microsoft Certified Systems Engineer examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (3 credits)**

CIS105 Survey of Computer Information Systems (3) OR  
Permission of Department or Division

**Required Courses: (23 Credits)**

		CREDITS
	BPC/CIS121AB MS-DOS Operating System	1
+	BPC170 Computer Maintenance I: A+ Prep	3
	MST140 Microsoft Networking Essentials	3
+	MST150 Microsoft Windows NT Administration	3
+	MST152 Microsoft Windows NT Core	4
+	MST154 Microsoft Windows NT Enterprise	3

Students should select a minimum of six (6) credits from the following courses in consultation with a program advisor.

+	MST240 Microsoft Transmission Control Protocol/Internet Protocol (TCP/IP)	3
+	MST241 Microsoft Internet Information Server (IIS)	3
+	MST242 Microsoft Exchange Server	4
+	MST243 Microsoft Systems Management Server (SMS)	3
+	MST244 Microsoft Structured Query Language (SQL) Server Level I	3
+	MST246 Implementing Microsoft Internet Explorer	2
+	MST247 Microsoft Proxy Server	2
+	MST252 Microsoft Windows Network Update	3
+	MST254 Microsoft Structured Query Language (SQL) Server Level II	3

NOTE: Students must earn a grade of "C" or better for each course in the Required Courses category.

+indicates that a prerequisite is required

## Microsoft Networking Technology Certificate Requirements

**Program Description:** Estrella Mountain Community College, a Microsoft Authorized Academic Training Program provider, prepares students for industry-recognized certification. The curriculum is taught by Microsoft Certified Professionals.

The Certificate of Completion in Microsoft Networking Technology provides training for a supervisory-level position working with Windows networks. The program develops skills to install, configure, customize, optimize, and troubleshoot Windows servers, Windows client workstations, Microsoft Backoffice products and to interoperate with Novell and UNIX systems. Courses in the program also prepare for Microsoft Certified Product Specialist and Microsoft Certified Systems Engineer examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (3 credits)**

CIS105 Survey of Computer Information Systems (3) OR  
Permission of Department or Division

**Required Courses: (33 Credits)****CREDITS**

	BPC/CIS121AB MS-DOS Operating System	1
+	BPC170 Computer Maintenance I: A+ Prep	3
	CIS102 Customer Service/Technical Support	1
	CIS126DA UNIX Operating System (3) OR	
	CIS126AA UNIX Operating System: Level I (1) AND	
+	CIS126BA UNIX Operating System: Level II (1) AND	
+	CIS126CA UNIX Operating System: Level III (1)	3
+	CIS191 Novell NetWare System Administration	3
+	CIS270 Data Communications	3
	MST140 Microsoft Networking Essentials	3
+	MST150 Microsoft Windows NT Administration	3
+	MST152 Microsoft Windows NT Core	4
+	MST154 Microsoft Windows NT Enterprise	3

Students should select a minimum of six (6) credits from the following courses in consultation with a program advisor.

+	MST240 Microsoft Transmission Control Protocol/Internet Protocol (TCP/IP)	3
+	MST241 Microsoft Internet Information Server (IIS)	3
+	MST242 Microsoft Exchange Server	4
+	MST243 Microsoft Systems Management Server (SMS)	3
+	MST244 Microsoft Structured Query Language (SQL) Server Level I	3
+	MST246 Implementing Microsoft Internet Explorer	2
+	MST247 Microsoft Proxy Server	2
+	MST252 Microsoft Windows Network Update	3
+	MST254 Microsoft Structured Query Language (SQL) Server Level II	3

NOTE: Students must earn a grade of "C" or better for all courses required within the program.

+indicates that a prerequisite is required

## MICROSOFT SOLUTIONS DEVELOPMENT

**Division Chair - Instructional Computing: Betty Vickrey**  
(623) 935-8081

**Degree:** Associate in Applied Science (AAS), Microsoft Solutions Development  
(NOTE: See page 65 for AAS degree requirements.)

**Certificate:** Microsoft Solutions Development

### Microsoft Solutions Development AAS Degree Requirements

**Program Description:** The Associate in Applied Science in Microsoft Solutions Development is designed to provide training in preparation for the Microsoft Certified Solutions Developer (MCSD) certification examinations. The MCSD credential is the premium certification for professionals who design and develop custom business solutions with Microsoft development tools, technologies, and platforms. Focus is on application development for desktop, distributed, and Internet/intranet environments.

Microsoft solutions developers design and develop custom solutions to build Web-based, distributed, and commerce applications by using Microsoft's products, such as Microsoft SQL Server, Microsoft Visual Studio, and Microsoft Component Services. Job tasks include analyzing business requirements, defining the technical architecture, designing a solution, coding and implementing a solution, testing the solution, deploying the solution, and maintaining the solution.

Career opportunities include systems architect, systems analyst, programmer, e-commerce administrator, database administrator, trainer, LAN administrator, network engineer, information systems manager, and contractor. There is a critical shortage of Microsoft developers as there are approximately 22,000 MCSDs worldwide. The growth of e-commerce and use of Microsoft products will increase the demand for qualified solution developers. Average salary in the southwest region is \$78,500.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (3 credits)**

CIS105 Survey of Computer Information Systems (3) OR  
Permission of Department or Division

**Required Courses: (25 Credits)**

		<b>CREDITS</b>
+ ACC230	Uses of Accounting Information (3) OR	
GBS151	Introduction to Business (3)	3
CIS102	Customer Service/Technical Support	1
CIS150	Programming Theory	3
+ CIS159	Visual Basic Programming I	3
+ CIS164AG	Oracle: Data Modeling and Relational Database Design (2) OR	
+ MST146	Data Modeling and Relational Database Design (2)	2
MST170	Visual Basic Desktop Application Development	4
+ MST172	Microsoft Visual Basic Distributed Applications	3
+ MST270	Microsoft Solution Architectures	3

Students should select three (3) credits from the following courses in consultation with a program advisor.

+ MST171	Microsoft FrontPage (3) OR	
+ MST174	Microsoft Visual InterDev (3) OR	
+ MST254	Microsoft Structured Query Language (SQL) Server Level II	3

**Restricted Electives: (14 Credits)**

CIS117DO	Introduction to Oracle: SQL and PL/SQL	3
+ CIS162AB	C++: Level I	3
+ CIS163AA	Java Programming: Level I	3
+ CIS166	Web Scripting/Programming	3
+ CIS225AB	Object-Oriented Analysis and Design	3
+ CIS233DA	The Internet Web Publishing	3
+ CIS235	e-Commerce	3
+ CIS296WA-WD	Cooperative Education (any module)	1-4
MST140	Microsoft Networking Essentials	3
+ MST150	Microsoft Windows NT Administration	3
+ MST152	Microsoft Windows NT Core	3
+ MST171	Microsoft FrontPage	3
+ MST174	Microsoft Visual InterDev	3
+ MST244	Microsoft Structured Query Language (SQL) Server Level I	3
+ MST254	Microsoft Structured Query Language (SQL) Server Level II	3
MST298AA-AC	Special Projects (Any module)	1-3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

**General Studies Requirements: (25-27 Credits)****Core: (15-17 Credits)****First-Year Composition:**

- + ENG101 First-Year Composition (3) AND
- + ENG102 First-Year Composition (3) OR
- + ENG107 English for Speakers of Other Languages (3) AND
- + ENG108 English for Speakers of Other Languages (3) 6

**Oral Communication:**

- COM100 Introduction to Human Communication (3) OR
- COM110 Interpersonal Communication (3) or
- COM230 Small Group Communication (3) 3

**Critical Reading:**

- + CRE101 Critical and Evaluative Reading I (3) OR  
equivalent as indicated by assessment 3

**Mathematics:**

- + MAT120 Intermediate Algebra with Review (5) or
- + MAT121 Intermediate Algebra, Standard (4) or
- + MAT122 Intermediate Algebra, Accelerated (3) or  
Equivalent as indicated by assessment or satisfactory completion  
of a higher level mathematics course 3-5

**DISTRIBUTION: (10 Credits)****Humanities and Fine Arts:**

- Any approved general studies course in the Humanities and Fine Arts area 3

**Social and Behavioral Sciences:**

- Any approved general studies course in the Social and Behavioral Sciences area 3

**Natural Sciences:**

- Any approved general studies course in the Natural Sciences area 4

**Microsoft Solutions Development Certificate Requirements**

**Program Description:** The Certificate of Completion in Microsoft Solutions Development is designed to provide training in preparation for the Microsoft Certified Solutions Developer (MCSD) certification examinations. The MCSD credential is the premium certification for professionals who design and develop custom business solutions with Microsoft development tools, technologies, and platforms. Focus is on application development for desktop, distributed, and Internet/intranet environments.

Microsoft solutions developers design and develop custom solutions to build Web-based, distributed, and commerce applications by using Microsoft's products, such as Microsoft SQL Server, Microsoft Visual Studio, and Microsoft Component Services. Job tasks include analyzing business requirements, defining the technical architecture, designing a solution, coding and implementing a solution, testing the solution, deploying the solution, and maintaining the solution.

Career opportunities include systems architect, systems analyst, programmer, e-commerce administrator, database administrator, trainer, and contractor. There is a critical shortage of Microsoft developers as there are approximately 22,000 MCSDs worldwide. The growth of e-commerce and use of Microsoft products will increase the demand for qualified solution developers. Average salary in the southwest region is \$78,500.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (5-6 credits)**

CIS233AA	Internet Web Publishing I (1) AND
CIS233BA	Internet Web Publishing II (1) OR
CIS233DA	Internet Web Publishing (3) AND
CIS105	Survey of Computer Information Systems (3) OR Permission of Department or Division

**Required Courses: (24 Credits)****CREDITS**

+ ACC230	Uses of Accounting Information (3) OR	
GBS151	Introduction to Business (3)	3
CIS150	Programming Theory	3
+ CIS159	Visual Basic Programming I	3
+ CIS164AG	Oracle: Data Modeling and Relational Database Design (2) OR	
+ MST146	Data Modeling and Relational Database Design (2)	2
MST170	Visual Basic Desktop Application Development	4
+ MST172	Microsoft Visual Basic Distributed Applications	3
+ MST270	Microsoft Solution Architectures	3

Students should select three (3) credits from the following courses in consultation with a program advisor.

+ MST171	Microsoft FrontPage (3) OR	
+ MST174	Microsoft Visual InterDev (3) OR	
+ MST254	Microsoft Structured Query Language (SQL) Server Level II	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

## NETWORKING TECHNOLOGY: CISCO

**Division Chair - Instructional Computing: Betty Vickrey**  
**(623) 935-8081**

**Degree:** Associate in Applied Science (AAS), Networking Technology: Cisco  
(NOTE: See page 65 for AAS degree requirements.)

**Certificates:** Networking Administration: Cisco  
Networking Technology: Cisco

### Networking Technology: Cisco AAS Degree Requirements

**Program Description:** Estrella Mountain Community College, a Cisco Systems recognized Regional Academy, prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals.

The Associate of Applied Science in Networking Technology: Cisco provides training for a supervisory position working with Cisco Systems networking and Internet hardware. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs); use the MS-DOS operating systems; troubleshoot problems with various common hardware and software configurations; perform administrative tasks in a network; develop methods for customer service; and describe the basic components of electronic systems. Courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Required Courses: (24 Credits)**

		CREDITS
	BPC121AB MS-DOS Operating System	1
+	BPC170 Computer Maintenance I: A+ Prep	3
	CIS102 Customer Service/Technical Support	1
+	CIS126DA UNIX Operating System (3) OR	
	CIS126AA UNIX Operating System: Level I (1) AND	
	CIS126BA UNIX Operating System: Level II (1) AND	
	CIS126CA UNIX Operating System: Level III (1) OR	
+	CIS191 Novell NetWare System Administration (3) OR	
+	MST150 Microsoft Windows Network Administration	3
	CNT140 Cisco Networking Fundamentals	4
+	CNT150 Cisco Networking Router Technologies	3
+	CNT160 Cisco Advanced Routing and Switching	3
+	CNT170 Cisco Project Based Learning	3
+	ELT100 Survey of Electronics	3

**Restricted Electives: (15 Credits)**

	BPC110 Computer Usage and Application (3) OR	
	CIS105 Survey of Computer Information Systems (3)	3
+	CIS126DA UNIX Operating System (3) OR	
	CIS126AA UNIX Operating System: Level I (1) AND	
	CIS126BA UNIX Operating System: Level II (1) AND	
	CIS126CA UNIX Operating System: Level III (1) OR	
+	CIS191 Novell NetWare System Administration (3) OR	
+	MST150 Microsoft Windows Network Administration	3
+	CIS190 Introduction to Local Area Networks OR	
	MST140 Networking Essentials	3
+	CIS270 Data Communication	3
	CIS296WA-WD Cooperative Education	1-4
	CIS298AA-AC Special Projects	1-3
+	MST145 Microsoft Client System Administration	3
+	MST240 Microsoft TCP/IP	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

**General Studies Requirements: (25 Credits)****Core: (15 Credits)****First-Year Composition:**

+	ENG101 First Year Composition AND	3
+	ENG102 First Year Composition	3

**Oral Communication:**

	COM100 Introduction to Human Communication OR	
	COM110 Interpersonal Communication OR	
	COM230 Small Group Communication	3

**Critical Reading:**

+	CRE101 Critical and Evaluative Reading I OR	3
	Equivalent as indicated by assessment.	

**Mathematics:**

+	MAT102 Mathematical Concepts/Applications	3
---	---	---

**Distribution: (10 Credits)****Humanities and Fine Arts:**

	Any approved general studies course in the Humanities and Fine Arts area	3
--	--	---

**Social and Behavioral Sciences:**

	Any approved general studies course in the Social and Behavioral Sciences area	3
--	--	---

**Natural Sciences:**

	Any approved general studies course in the Natural Sciences area	4
--	--	---

## Networking Administration: Cisco Certificate Requirements

**Program Description:** Estrella Mountain Community College, a Cisco Systems recognized Regional or Local Academy, prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. The Certificate of Completion in Internetworking Administration provides training for a position working with Cisco Systems networking and Internet hardware. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs). Courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

### Required Courses: (13 Credits)

		<b>CREDITS</b>
CNT140	Cisco Networking Fundamentals	4
+ CNT150	Cisco Networking Router Technologies	3
+ CNT160	Cisco Advanced Routing and Switching	3
+ CNT170	Cisco Project Based Learning	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

## Networking Technology: Cisco Certificate Requirements

**Program Description:** Estrella Mountain Community College, a Cisco Systems recognized Regional or Local Academy, prepares students for industry-recognized certification. The curriculum is taught by Cisco Systems Certified Professionals. The Certificate of Completion in Networking Technology: Cisco provides training for a position working with Cisco Systems networking and Internet hardware. Knowledge and skills are developed to install, configure, maintain, and troubleshoot Cisco routers and components, advanced routing protocols, Local Area Networks (LANs), and Wide Area Networks (WANs), use the MS-DOS operating systems; troubleshoot problems with various common hardware and software configurations; and perform administrative tasks in a network; Courses in the program also prepare students for the Cisco Certified Networking Associate examination.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Required Courses: (20 Credits)****CREDITS**

BPC121AB	MS-DOS Operating System	1
+ BPC170	Microcomputer Maintenance I	3
+ CIS126DA	UNIX Operating System (3) OR	
CIS126AA	UNIX Operating System: Level I (1) AND	
CIS126BA	UNIX Operating System: Level II (1) AND	
CIS126CA	UNIX Operating System: Level III (1) OR	
+ CIS191	Novell NetWare System Administration (3) OR	
+ MST150	Microsoft Windows Network Administration	3
CNT140	Cisco Networking Fundamentals	4
+ CNT150	Cisco Networking Router Technologies	3
+ CNT160	Cisco Advanced Routing and Switching	3
+ CNT170	Cisco Project Based Learning	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

### Oracle Applications Developer Certificate Requirements

**Program Description:** This program provides students with the latest Oracle Applications Developer skills necessary to perform the duties of an Oracle Applications Developer as well as the requisite knowledge needed for the Oracle Certified Professional (OCP) Program examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree or certificate requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (7 Credits)****Credits**

BPC/CIS123AA	Microsoft Windows (1)	1
CIS105	Survey of Computer Information Systems	3
+ENG101	First-Year Composition (3) OR	
OAS108	Business English (3)	3

**Required Courses: (18 Credits)****Credits**

+CIS117DO	Introduction to Oracle: SQL & PL/SQL	3
+CIS164AB	Oracle: Developer PL/SQL	2
+CIS164AC	Oracle: Developer Forms I	3
+CIS164AD	Oracle: Developer Forms II	2
+CIS164AE	Oracle: Developer Reports	3
+CIS164AG	Oracle: Data Modeling and Relational Database Design	2
MGT101	Techniques of Supervision (3) or	
MGT175	Business Organization and Management (3)	3

NOTE: Students must earn a grade of "C" or better in all courses within the program.

+indicates that a prerequisite is required

## Oracle Database Administration Certificate Requirements

**Program Description:** This program provides students with the latest Oracle Database Administration skills necessary to perform the duties of an Oracle DBA as well as the requisite knowledge needed for the Oracle Certified Professional (OCP) Program examinations.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree or certificate requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

### Program Prerequisites: (8 Credits) Credits

BPC/CIS123AA	Microsoft Windows	1
CIS105	Survey of Computer Information Systems	3
CIS122AC	UNIX Operating System: Multi-User	1
+ENG101	First Year Composition (3) OR	
OAS108	Business English(3)	3

### Required Courses: (16 Credits) Credits

+CIS117DO	Introduction to Oracle: SQL & PL/SQL	3
+ CIS117DP	Oracle: Database Administration	3
+CIS117DQ	Oracle :Backup and Recovery	2
+CIS117DR	Oracle: Performance: Tuning	3
+ CIS164AG	Oracle: Data Modeling and Relational Database Design	2
MGT101	Techniques of Supervision (3) OR	
MGT175	Business Organization and Management (3)	3

NOTE: Students must earn a grade of "C" or better in all courses within the program.

+indicates course has prerequisites and/or corequisites.

## ORGANIZATIONAL LEADERSHIP

**Division Chair - Occupational Education: Steve Shriver**  
(623) 935-8461

**Degree:** Associate in Applied Science (AAS), Organizational Leadership  
(NOTE: See page 65 for AAS degree requirements.)

**Certificate:** Organizational Leadership

### Organizational Leadership AAS Degree Requirements

**Program Description:** This program is designed to provide students with knowledge and skills to meet the challenges of a changing workplace. Courses will prepare students by developing leadership and communication skills and techniques for planning for, directing and evaluating business situations. This program will also present procedures for effective allocation of time, money, materials, space and personnel.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

<b>Required Courses: (17-18 Credits)</b>		<b>CREDITS</b>
CIS105	Survey of Computer Information Systems (3) OR	
BPC110	Computer Usage and Application (3)	3
GBS110	Human Relations in Business/Ind (3) OR	
MGT251	Human Relations in Business (3)	3
+ GBS233	Business Communications (3) OR	
TQM105	Writing for Quality Results (2)	2-3
MGT175	Business Organization and Management	3
GBS151	Introduction to Business	3
MGT101	Techniques of Supervision (3) OR	
MGT229	Management and Leadership I (3)	3

NOTE: Students must earn a grade of "C" or better for all courses in the "Required Courses" category.

+indicates that a prerequisite is required

#### **Restricted Electives: (19-22 Credits)**

Students must choose 19-22 industry/job specific elective credits and have them approved by a business advisor and the Dean of Instruction. These industry/job specific credits must include a minimum of 9 credits with a common prefix. These restricted electives must be chosen from the core requirements of an AAS Degree program, Certificate, or a specialized program of study.

#### **General Studies Requirements: (25-27 Credits)**

##### **Core: (15-17 Credits)**

##### **First-Year Composition:**

Any approved general studies course in the First-Year Composition area 6

##### **Oral Communication:**

COM230 Small Group Communications 3

##### **Critical Reading:**

Any approved general studies course in the Critical Reading area 3

##### **Mathematics:**

Any approved general studies course in the Mathematics area 3-5

##### **Distribution: (10 Credits)**

##### **Humanities and Fine Arts:**

Any approved general studies course in the Humanities and Fine Arts area 3

##### **Social and Behavioral Sciences:**

Any approved general studies course in the Social and Behavioral Sciences area 3

##### **Natural Sciences:**

Any approved general studies course in the Natural Sciences area 4

## Organizational Leadership Certificate Requirements

**Program Description:** This program is designed to provide students with knowledge and skills to meet the challenges of a changing workplace. Courses will prepare students by developing leadership and communication skills and techniques for planning for, directing and evaluating business situations. This program will also present procedures for effective allocation of time, money, materials, space and personnel.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

<b>Required Courses: (17-18 Credits)</b>		<b>CREDITS</b>
CIS105	Survey of Computer Information Systems (3) OR	
BPC110	Computer Usage and Application (3)	3
GBS110	Human Relations in Business/Ind (3) OR	
MGT251	Human Relations in Business (3)	3
+ GBS233	Business Communications (3) OR	
TQM105	Writing for Quality Results (2)	2-3
MGT175	Business Organization and Management	3
GBS151	Introduction to Business	3
MGT101	Techniques of Supervision (3) OR	
MGT229	Management and Leadership I (3)	3

NOTE: Students must earn a grade of "C" or better for all courses in the "Required Courses" category.

+indicates that a prerequisite is required

## PROGRAMMING AND SYSTEM ANALYSIS

**Division Chair - Instructional Computing: Betty Vickrey**  
(623) 935-8081

**Degree:** Associate in Applied Science (AAS), Programming and System Analysis  
(NOTE: See page 65 for AAS degree requirements.)

**Certificate:** Programming and System Analysis

### Programming and System Analysis AAS Degree Requirements

**Program Description:** This program is designed to provide students with an in depth exploration of different computer language and technical skills. It includes operating systems, local area networks, business communication, team roles, and dynamics.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites: (3 credits)**

CRE101	Critical and Evaluative Reading I (3) OR Equivalent by assessment	3
--------	--	---

**Required Courses: (31 Credits)****CREDITS**

CIS105	Survey of Computer Information Systems	3
CIS121AB	MS-DOS Operating System (1) OR	
CIS121AE	Windows Operating System: Level I (1)	1
+ CIS150	Programming Theory	3
+ CIS159	Visual Basic Programming I	3
+ CIS162	C Programming I (any module)	3
+ CIS163AA	Java Programming: Level I	3
+ CIS190	Introduction to Local Area Networks	3
+ CIS225	Business Systems Analysis and Design	3
+ CIS250	Management Information Systems	3
+ GBS233	Business Communications	3
TQM204	Team Roles and Dynamics	3

**Restricted Electives: (12 Credits)**

CIS117DM	Microsoft Access: Database Management	3
CIS126DA	UNIX Operating System	3
+ CIS158	COBOL Programming I	3
+ CIS259	Visual Basic Programming II	3
+ CIS262	C: Level II (any module)	3
+ CIS263AA	Java Programming: Level II	3
+ CIS290AC	Computer Information Systems Internship	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

**General Studies Requirements: (22 Credits)****Core: (12 Credits)****First-Year Composition:**

ENG101	First-Year Composition (3) OR	
ENG107	First-Year Composition for ESL (3) AND	
ENG102	First-Year Composition (3) OR	
ENG108	First-Year Composition for ESL (3)	6

**Oral Communication:**

Any approved general studies course in the Oral Communication area	3
--	---

**Critical Reading:**

Met by CRE101 in Program Prerequisites area	0
---	---

**Mathematics:**

MAT212	Brief Calculus	3
--------	----------------	---

**Distribution: (10 Credits)****Humanities and Fine Arts:**

Any approved general studies course in the Humanities and Fine Arts area	3
--	---

**Social and Behavioral Sciences:**

ECN111	Macroeconomic Principles (3) OR	
ECN112	Microeconomic Principles (3)	3

**Natural Sciences:**

Any approved general studies course in the Natural Sciences area	4
--	---

## Programming and System Analysis Certificate Requirements

**Program Description:** This program is designed to provide students with an in depth exploration of different computer language and technical skills. It includes operating systems, local area networks, business communication, team roles, and dynamics.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

**Program Prerequisites:** None

<b>Required Courses: (31 Credits)</b>		<b>CREDITS</b>
CIS105	Survey of Computer Information Systems	3
CIS121AB	MS-DOS Operating System (1) OR	
CIS121AE	Windows Operating System: Level I (1)	1
+ CIS150	Programming Theory	3
+ CIS159	Visual Basic Programming I	3
+ CIS162	C Programming I (any module)	3
+ CIS163AA	Java Programming: Level I	3
+ CIS190	Introduction to Local Area Networks	3
+ CIS225	Business Systems Analysis and Design	3
+ CIS250	Management Information Systems	3
+ GBS233	Business Communications	3
TQM204	Team Roles and Dynamics	3

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

## SMALL BUSINESS MANAGEMENT

**Division Chair - Occupational Education: Steve Shriver (623) 935-8461**

**Certificate:** Small Business Management

### Small Business Management Certificate Requirements

**Program Description:** This program is designed to meet the needs of individuals who own and/or manage a small business. It is a flexible program composed on one-credit courses which can be offered on non-traditional schedules and can be completed rapidly. These factors increase the opportunity for more members of the small business community to take advantage of these courses. This certificate offers a planned content core with additional flexibility to tailor the remainder of the program to the individual needs of the participant.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

<b>Required Courses: (10 Credits)</b>		<b>CREDITS</b>
SBS200	Small Business Operations	2
SBS202	Small Business Bookkeeping and Tax Preparation	1
SBS203	Financing and Cash Management for a Small Business	1
SBS204	Small Business Marketing and Advertising	2
SBS207	Producing Sales for a Small Business	1
SBS213	Hiring and Managing Employees	1
+ SBS216	Planning for Small Business	2

<b>Restricted Electives: (2 Credits)</b>		
SBS211	Small Business Computer Applications	1
SBS214	Small Business Customer Relations	1
SBS215	Managing Stress in Small Business	1
SBS217	Starting/Managing a Home Business	1

NOTE: Students must earn a grade of "C" or better for all courses in the program.

+indicates that a prerequisite is required

## Total Quality Management Certificate Requirements

**Division Chair - Occupational Education: Steve Shriver**  
**(623) 935-8461**

**Certificate:** Total Quality Management

**Program Description:** This program prepares students to be competitive in today's domestic and global economies. It provides the student quality management theories and skills to better serve both internal and external customers. Emphasis is on practical application of skills and knowledge.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

<b>Required Courses: (9 Credits)</b>		<b>CREDITS</b>
TQM101	Quality Customer Service	3
TQM201	Total Quality Concepts	2
TQM214	Principles of Process Improvement	2
TQM230	Teamwork Dynamics	2

NOTE: Students must earn a grade of "C" or better for all courses in the program.

## Web Developer Certificate Requirements

**Program Description:** This certificate prepares a software developer to properly create and maintain web applications. In addition to web page development, this certificate prepares software developers to fully manage and develop corporate web systems using interactive applications. Developers will be able to write programs to manage corporate database via the web.

**Note:** Students should consult with an advisor in planning their academic schedule in order to complete degree and certificate requirements in an expedient manner. Required courses may not be available every semester or year. Due to limited course offerings, students may find it necessary to extend completion time lines and attend both day, evening and summer classes.

Required Courses: (33 Credits)	Credits
CIS105 Survey Computer Info Systems	3
CIS/BPC117DM Microsoft Access: Database Management	3
CIS/BPC120FA Microcomputer Graphics: IBM Adobe Photoshop (1) OR	
CIS/BPC120FB Mac Photo Shop (1)	1
CIS126DA UNIX Operating System (3) OR	
CIS126AA UNIX Operating System: Level I (1) AND	
CIS126BA UNIX Operating System: Level II (1) AND	
CIS126CA UNIX Operating System: Level III (1)	3
CIS/BPC133DA The Internet: WWW	3
+CIS150 Programming Theory	3
+CIS163AA Java Programming: Level I	3
+ CIS166 Web Scripting/Programming	3
+CIS226++ Internet/Intranet	3
(Note: any module)	
+CIS233DA The Internet Web Publishing	3
+CIS235 e-Commerce	3
CIS298AB Special Projects	2

NOTE: Students must earn a grade of "C" or better for each course listed in the "Required Courses" area.

+ indicates course has prerequisites and/or corequisites.)



## SPECIALIZED PROGRAMS

No matter what Associate of Applied Science Degree students are pursuing, Estrella Mountain offers many general education, occupational, and prerequisite courses. Because Estrella Mountain is a member of the Maricopa Community College District, all Estrella Mountain courses transfer to any college within the system. This means that all degree programs offered at sister institutions are available to Estrella Mountain students through a 1+1 program. In many cases, students can obtain the first year of college coursework at Estrella Mountain and then transfer to a sister community college to complete the second year of coursework in the chosen occupational field. Advisors are located in Komatke Hall to provide students with additional information about program requirements.

### HEALTH CARE INTEGRATED EDUCATIONAL SYSTEM (HCIES)

In collaboration and partnership with the health care community and its response to the dynamic changes occurring in the health care arena and health care professions' practice, the MCCD integrated the curriculum of all allied health and nursing programs. All HCIES program pathways and educational offerings emphasize the achievement of relevant competencies and provide value to the individual, the employer, and the community. As a result, graduates of the various HCIES program pathways will meet the community's demand for a flexible, multi-skilled health care workforce that meets employer and consumer needs. Refer to individual college catalogs for specific health care program pathways.

There are three levels to the program; Estrella Mountain offers Level I which includes the following courses:

		<b>CREDITS</b>
HCC130AA	Health Care Today	0.5
HCC130AB	Workplace Behavior in Health Care	0.5
HCC130AC	Personal Wellness and Safety	0.5
HCC130AD	Communication & Team Work in the Health Care Organization	1
HCC109	CPR for the Health Care Provider	0.5

Estrella Mountain also offers some courses in Level II:

HCC145AA	Medical Terminology for Health Care Workers I	1
HCC145AB	Medical Terminology for Health Care Workers II	1
HCC145AC	Medical Terminology for Health Care Workers III	1
HCC130AE	Legal and Ethical Issues in Health Care	0.5
HCC130AF	Decision Making in the Health Care Setting	0.5

(Contact Steve Shriver, Division Chair for Occupational Education at (623) 935-8461.)



The Southwest Skill Center opened in the summer of 1999 at Estrella Mountain Community College. The 28,000 square foot building is designed for training programs which includes Business Technology Occupations, Medical Assistant, and C-TECH (network cabling-copper based system) programs.

Regular training hours are 8:00 a.m. to 4:00 p.m., Monday through Friday. The Medical Assistant Program also offers an evening session. Evening hours are 5:00 p.m. to 9:00 p.m., Monday through Thursday.

### **Business Technology Occupations**

Students develop computer and office skills to prepare for jobs in today's automated offices. Recent graduates have secured positions such as information processors, data entry clerks, image keyers, and customer service representatives.

For more information contact :

Coordinator of Instruction: Robert Delaney at 623-535-2720 or

C-TECH Instructor: Steve Villa at 623-535-2762

Director: Adolfo Gamez at 623-535-2710

## BUSINESS TECHNOLOGY OCCUPATIONS

### BTO Career Ladder

Business Technology Office Assistant  
with Microsoft Office Suite  
26 Weeks (910 Clock Hours)

Business Technology Receptionist with  
Elective  
17 Weeks (595 Clock Hours)

Business Technology Office Assistant  
with Basic Accounting Skills  
23 Weeks (805 Clock Hours)

Data Entry Clerk  
6 Weeks (210 Clock Hours)

Business Technology Office Assistant  
with intro to Internet  
23 Weeks (805 Clock Hours)

Business Technology File Clerk  
6 Weeks (210 Clock Hours)

Business Technology Office Assistant  
with Elective  
23 Weeks (805 Clock Hours)

Introduction to Business Skills  
3 Weeks (105 Clock Hours)

Business Technology Office Assistant  
20 Weeks (700 Clock Hours)

Introduction to Computers  
1 Week (35 Clock Hours)

### BTO Specialty Career

Introduction to Internet  
7 Weeks (245 Clock Hours)

### Single Course Offerings

Microsoft Power Point  
3 Weeks (105 Clock Hours)

Introduction to Windows 98  
7 Weeks (245 Clock Hours)

Microsoft Access  
3 Weeks (105 Clock Hours)

Basic Accounting Skills  
7 Weeks (245 Clock Hours)

Microsoft Excel  
3 Weeks (105 Clock Hours)

Microsoft Word  
3 Weeks (105 Clock Hours)

Business Technology Occupations  
Special Projects (Time varies)

## Medical Assistant Program /Health Care Core

### HEALTH CARE CORE

Students interested in a health career have many career paths to choose from: Medical Assistant, Nursing Assistant and Practical Nursing. Each one begins with the Health Care Core of the Maricopa Community College District's Health Care Integrated Education System. This model, first implemented throughout MCCD in 1998, utilizes common and shared competencies as the beginning of each career pathway. Thus, students can change pathways or change campuses without duplicating courses. All students participating in a health care education program will be required to complete a preclinical drug screening at the student's expense.

### MEDICAL ASSISTANT COURSES

The SouthWest Skill Center offers the Medical Assistant courses during the day from 8:00 a.m. to 4:00 p.m., Monday through Friday, and in the evenings from 5:00 p.m. to 9:00 p.m., Monday through Thursday. Medical assistants are skilled professionals who have demonstrated their knowledge in both clinical and administrative areas. They can run a busy office and handle the medical tests performed in a doctor's office. The Valley's growing and aging population ensures that health care is an expanding job market - that jobs in the health care field will be available for trained workers. As part of MCCD's Health Care Integrated Education System, the SWSC Medical Assistant courses cover the same content material as the credit courses and are included in an articulation agreement, which makes them transferrable within the MCCD college district.

## HEALTH CARE CORE

### Level I - Courses Common to all Health Care Pathways (must be completed prior to Level II)

<b>HCC130AA</b>	Health Care Today
<b>HCC130AB</b>	Workplace Behavior in Health Care
<b>HCC130AC</b>	Personal Wellness and Safety
<b>HCC130AD</b>	Communication and Teamwork
<b>HCC109</b>	CPR for the Health Care Provider

### Level II - Common/Shared Courses

<b>HCC145AA</b>	Medical Terminology for Health Care Workers I
<b>HCC145AB</b>	Medical Terminology for Health Care Workers II
<b>HCC145AC</b>	Medical Terminology for Health Care Workers III
<b>HCC130AE</b>	Legal and Ethical Issues in Health Care
<b>HCC130AF</b>	Decision Making in the Health Care Setting

## MEDICAL ASSISTANT COURSES

### Day/Evening Program

Medical Assistant Back/Front Office 30 Weeks (805 Clock Hours)
Medical Assistant Back Office 16 Weeks (560 Clock Hours)
Medical Assistant Front Office 14 Weeks (490 Clock Hours)

### Back Office Courses

HCE162	Aseptic Techniques
HCE109	Phlebotomy and Specimen Processing
HCE110	Practicum: Fundamental Phlebotomy Skills
HCE167	Laboratory Testing in Patient Care Service Centers
HCE221	Administration of Medication
HCE261	Applied EKG
HCE251	Emergencies in the Medical Office
HCE274	Administrative Medical Assisting Externship

### Front Office Courses

HCE226	Administrative Procedures
HCE227	Insurance Billing and Coding
HCE229	Automated Computer System for Medical Office Management

## C-TECH Network Cabling - Copper Based Systems

This program is designed to provide students with the knowledge and skills necessary to become entry level technicians in the Network Cabling industry. After successful completion of this course, a certificate will be issued by C-TECH Associates, Inc.

### Tier 1- CTH101 Introduction to Workplace Ethics:

Students will receive an introduction to customer service standards, interviewing skills and techniques, workplace etiquette, professional work image, and resume preparation.

### Tier 3- CTH103 Introduction to Network Cabling-Copper Based Systems:

Students will benefit from the work ready skills in networking at the physical layer level, while using the hands-on training aid...ACT with DAVE, a "live" simulation of work-related experience.

### Tier 2- CTH102 Introduction to Telecommunications:

Students will have a basic understanding of copper and fiber optic-based cabling systems. They will have an exciting insight into telecommunications past, present and future.

### Tier 4- CTH104 Introduction to Fiber Optics- The Physical Layer:

Students will be provided with a theoretical and hands-on knowledge of Fiber Optics. This course has been designed with input from industry professionals. Students will develop skills and theory sought by employers of entry-level technicians.



# MCCD OCCUPATIONAL PROGRAMS

## COLLEGES WHERE PROGRAMS ARE OFFERED:

**CGCC**=Chandler Gilbert Community College  
**EMCC**=Estrella Mountain Community College  
**GCC**=Glendale Community College  
**GWCC**=Gateway Community College  
**MCC**=Mesa Community College  
**PC**=Phoenix College  
**PVCC**=Paradise Valley Community College  
**RSCC**=Rio Salado College  
**SCC**=Scottsdale Community College  
**SMCC**=South Mountain Community College

## AGRICULTURE

### Agribusiness Sales and Service

Pest Management	MC
Pest Management Aide	MC

### Agricultural Production and Management

Agribusiness	GC, MC
(See Agribusiness Sales and Service and Horticulture sections for additional programs and related areas)	
Ranch and Livestock Management Aide	MC
Ranch and Livestock Management Specialist	MC
Urban Horticulture	GC, MC
(See Horticulture section for additional programs and related areas)	
Veterinary Technician/Animal Health	MC

### Equine Training and Management

Equine Science	SC
----------------	----

## Horticulture

Landscape Aide	MC
Landscape Design and Installation	GC
Landscape Management	GC
Landscape Specialist	MC
Nursery Operations	GC
(See Agricultural Production and Management section for additional programs and related areas)	

## BUSINESS

### Accounting

Accounting	PC
Accounting - Specialized Para-Professional	PV
Bookkeeping	SC
Bookkeeping/Accounting	GW
Microcomputer Accounting	GW, PC, PV
(See Business Administration for additional information and related areas)	
Paraprofessional Accounting	GC

**Business Administration**

Business	MC
Business (Fastrack)	SC
General Business	CG, GC, PC, PV
(See Management section for additional information and related areas)	
Import / Export Trade	EM, GW, MC, PV,
International Business	EM, GW, MC, PC, PV, SC

**Computer Science**

Computer Applications	PC
Computer Applications Technology	EM
Computer Hardware Maintenance and Desktop Support	CG, EM, GW, MC, PC, SC
Computer Information Systems	GC, MC, PC, PV, SC, SM
AS/400 Operations	GC
AS/400 Applications Development	GC
Helpdesk Specialist	GC
Oracle Applications Developer	GC, EM
Oracle Database Administrator	GC, EM
Web Design	SC
Web Developer	GW, PV, EM
Computer Networking Technology	PV
Computer Systems Maintenance	PV
Computer Technology	RS
Business Office Technology	RS
Desktop Publishing	RS, EM
Networking	RS
Office User Specialist Preparation Skills	RS
Programming	RS
Solutions Developer	RS
Basic Systems Engineer	RS
Systems Professional	RS
Technology Helpdesk Support	RS
Technology Troubleshooting & A+ Preparation	RS
Webmaster	RS
Education Technology	GW
Internet/Intranet Web Development Technology	MC
Microcomputer Applications	GC
(See Office Occupations section for additional information and related areas)	
Microcomputer Applications:	
Office Specialist/Core Level	CG
Microcomputer Applications: Office Specialist/ Expert Level	CG
Microcomputer Business Applications	CG, GC
Microsoft Networking Technology	CG, EM, GC, GW, PC, PV, SC, SM
Microsoft Product Specialist	CG, EM, GC, GW, PC, PV, SC, SM
Microsoft Solutions Development	CG, EM, GC, GW, MC, PC, PV, SC, SM
Microsoft Systems Engineer	CG, EM, GC, GW, PC, PV, SC, SM
Network Administration	GW, SC
Network Support	SC
Networking Administration: Cisco	CG, EM, GC, GW, SM, PC
Networking System Administration	MC
Networking Technology: Cisco	CG, EM, GC, GW, SM, PC

Personal Computer Applications	SC
Programming Methodology	MC
Programming and System Analysis	EM, GC, GW, MC, PC, PV, RS, SC, SM

**Finance**

Banking and Finance	PC
Real Estate	GC, MC

**Management**

Business Management	SM
Credit Union Management	PC
Credit Union Management I	PC
Credit Union Management II	PC
General Business	GW
Management	PC, MC, SC
Management I	PC
Management II	PC
Materials Management	GW
Middle Management	GC, PV
Public Relations	GC
(See Middle Management section for additional programs and related areas)	
Retail Management	GC
Small Business Management	EM
(See Production and Inventory Management section for additional programs and related areas)	
Supermarket Management	SM
Supervision	GC
Supervision and Management I	SM
Supervision and Management II	SM
Tribal Development	SC
Wholesale Food Management	SM

**Marketing**

Marketing MC	
Marketing I	PC
Marketing II	PC
Retail Fashion	SC
Salesmanship	MC

**Media Technology**

Motion Picture/Television Production	SC
Acting and Directing	SC
Broadcasting	SC
Computer Animation	SC
Computer Graphics	SC
Dance Technology	SC
Editing	SC
Graphic Design	SC
Media Arts Technology	SC
Production	SC
Scoring	SC
Screenwriting	SC
Sound Design	SC

**Maricopa Institute for Arts and Entertainment**

Technology	SC
Media Arts: Computer Art/Illustration	CG, MC, PC, PV
Media Arts: Desktop Publishing	PC, MC
Media Arts: Digital Animation	PC, MC
Media Arts: Digital Imaging	CG, PC, MC
Media Arts: Music Technology	PC, MC
Media Arts: Web Page Design	PC, MC
Video Production Technology	GC

**Middle Management**

Public Relations	MC
------------------	----

(See Management and Media Technology sections for additional information and related areas)

**Office Occupations**

Administrative Information Management Support	PV
Administrative Office Coordinator	EM, GC
Administrative Office Professional	MC
Call Center Supervision	GC
Computer Software Applications	PV
Court Clerkship	GW
Court Reporting	GW
Data Entry Clerk	EM, GC
General Office Secretary	EM, GC
Legal Assisting	PC
Legal Secretarial	PC
Legal Office Support	PC
Medical Office Support	PC
Medical Office Support: Basic Clerical	PC
Medical Office Support: Basic Transcription	PC
Office Automation Systems	GW, PV, SC, SM
Office Coordinator	EM, GC
Office Fundamentals	SC
Office Specialist: Computer Applications	GW
Office Support	GW, PC
Office Support I	PC
Office Support II	PC
Receptionist	EM, GC
Scoping	GW
Word Processing	SC

**Total Quality Management**

Organizational Leadership	EM, GW, MC, PC, PV, RS
Quality Customer Service	GW, MC, PC, PV, RS
Credit Card: Customer Service	RS
Human Services - Assistance: Customer Service	RS
Human Services - Eligibility: Customer Service	RS
Telecommunications: Customer Service	RS
Travel Agency: Customer Service	RS
Utilities Customer Service	RS
Quality Process Leadership	EM, GW, MC, PC, PV, RS
Total Quality Management	EM, GC

**HEALTH OCCUPATIONS****Allied Health**

Community Health Advocate, Diabetes	MC
Developmental Disabilities Specialist	GC, CG
Diagnostic Medical Ultrasound Technology	GW
Direct Care Practice	MC
EKG/Telemetry Technician	PC
Health Information	PC
Health Information Technology	PC
Health Services Management	GW
Health Unit Coordinating	GW
Hospital Central Service	GW
Medical Assisting	PC
Clinical Medical Assisting	PC
Medical Billing	PC
Medical Coding: Physician Based	PC
Medical Front Office	PC
Medical Radiography	GW
Medical Transcription	GW
Nuclear Medicine Technology	GW
Patient Care Technician	PC
Preoperative Nursing	GW
Phlebotomy	PC
Physical Therapist Assisting	GW
Radiography	SC
Respiratory Care	GW
Respiratory Care Technology	GW
Speech Language Pathology	SC
Surgical Technician First Assistant	GW
Surgical Technology	GW

**Dental**

AzDA Clinical Dental Assisting	RS
Dental Assisting	PC
Dental Hygiene	PC, RS
Dental Office Management	PC

**Emergency Medical Technology****Advanced Emergency Medical**

Technology (Paramedic)	GC, PC, SC
Basic Emergency Medical Technology	GC, MC, PC, SC
Emergency Communications and Deployment	PC
Intermediate Emergency Medical Technology	GC, MC, PC
(See Allied Health section for additional information and related areas)	
Paramedicine	MC

**Nursing**

Nursing	GC, GW, MC, PC, SC
Nurse Assisting	GC, GW, MC, PC, SC
Practical Nursing	GC, GW, MC, PC, SC

**HOME ECONOMICS**

Early Childhood Education	
Adolescent Studies	PC
Child Care MC	
Child Care Administration	PC
Child Development	MC

Classroom Management for Infants, Toddlers and Preschool Children	PC
Early Childhood Development	SC, SM
Early Childhood Education	PV
Early Childhood Lead Teacher	GC
Early Childhood Small Business Development	SC
Early Childhood Teaching	GC
Family Resources	PC
Family Support	PC
Infant Toddler Development	SC
<b>Education</b>	
Bilingual Teacher Aide	MC
Teacher Assisting	MC
<b>Food and Nutrition</b>	
Commercial Food Preparation	PC
Culinary Studies	PC
Dietetic Technology	CG, PV
Food Service Administration	PC
Professional Food and Beverage Service	PC
<b>Home Economics</b>	
Fashion Design	PC
Apparel Construction	PC
Fashion Design Level I	PC
Fashion Design Level II	PC
Fashion Illustration Level I	PC
Fashion Illustration Level II	PC
Fashion Illustration Level III	PC
Pattern Design Level I	PC
Pattern Design Level II	PC
Interior Design	MC, PC, SC
Advanced Interior Design	MC, PC
Home Furnishing	GC, MC, PC
<b>Merchandising</b>	
Apparel Merchandising	MC
Fashion Merchandising	PC
<b>SERVICE OCCUPATIONS</b>	
Administration of Justice	
Administration of Justice	GC, MC, PC
Administration of Justice Comprehensive	PC
Administration of Justice Fundamentals	PC
Administration of Justice Studies	SC
Adult Corrections	PC
Advanced Corrections	RS
Basic Corrections	RS
Corrections	RS
Correctional Program Officers Training	PC
Correctional Service Office Training	PC
Corrections Supervision/Management	PC
Crime and Accident Scene Photography	PC
Crime and Intelligence Analysis	CG
Crime Scene Technology	SC
Detention Services	RS
Evidence Technology	PC
Fingerprint Classification and Identification	PC

Judicial Studies	MC
Justice Agencies Support	GC, MC, PC
Justice Agencies Support Level I	GC, MC, PC
Justice Agencies Support Level II	GC, MC, PC
Justice Studies	SC
Law Enforcement Investigator	GC
Law Enforcement Supervision	SC
Law Enforcement Technology	RS
Law Enforcement Technology Field Training	RS
Parole Officer Training	PC
Peace Officer Certification I - Limited Reserve Officer	MC
Peace Officer Certification II - Full Authority Peace Officer	MC
Police Academy	GC
Police Academy Preparation	GC
Police Academy Preparation Level I	SC
Police Science	GC, MC, SC
Police Science I	GC, MC
Police Science II	GC, MC
Police Science III	GC, MC, SC
Police Supervision	GC
Public Safety Technology	RS
Tribal Court Advocacy	PC
Tribal Court Advocacy I	PC
Tribal Court Advocacy II	PC
<b>Fire Science</b>	
Basic Firefighter	MC
Driver Operator	MC
Fire Academy	GC, SC
Fire Officer I	MC
Fire Science	GC, PC
Fire Science Technology	GC, MC, SC, RS
Hazardous Materials Response	PC
Industrial Hazardous Materials Response	PC
Recruit Firefighters	GC
<b>Hospitality</b>	
Airline Operations	RS
Culinary Arts	SC
Hospitality/Hotel Management	EM
Hospitality and Tourism/Golf Management	SC
Hospitality and Tourism/Hotel Management	SC
Hospitality and Tourism/Restaurant Management	SC
Travel Industry Technology	PC
<b>Library Media Technology</b>	
Books and Print Material	MC
General Proficiency in Library and Information Resource Management	MC
Information and Customer Service	MC
Library and Information Resource Management	MC
Library and Information Systems	MC
Media/Multi-media for Libraries	MC
On-Line and Electronic Resources	MC

**Mortuary Science**

Mortuary Science	MC
------------------	----

**Parks, Recreation, Leisure and Fitness Studies**

Recreational Resources and Facilities Management	PC
Recreational Resources and Facilities Management: Horticulture	PC
Recreational Resources and Facilities Management: Equipment Maintenance and Repair	PC
Recreational Resources and Facilities Management: Pesticides	PC
Recreational Resources and Facilities Management: Pro Shop Management	PC
Recreational Resources and Facilities Management: Turf and Irrigation	PC

**Health and Physical Education/Fitness**

Teaching, Healing Meditation & Stress Management	PV
Therapeutic Massage	PC

**Social Sciences**

Aerobics Instructor	GC
Chemical Dependency	RS
Chemical Dependency Level I	RS
Chemical Dependency Level II	RS
Interpreter Preparation	PC
Personal Trainer	GC
Sign Language Communication Pre-Employment	PC

**Social Services**

Advanced Aging Services Management and Administrative Training	PC
Aging Services Management and Administrative Training	PC
Assisted Living: Directed Care Services	PC
Assisted Living: Management	PC
Assisted Living: Personal Care Services	PC
Assisted Living: Supervisory Care Services	PC
Basic Mediation	PC, SM
Gerontology	PC
Human Services	GC

**TECHNOLOGY AND TRADE INDUSTRIAL****Air Conditioning and Refrigeration**

Commercial-Industrial Air Conditioning/Facilities	GW
Industrial Refrigeration	GW
Residential and Light Commercial Air Conditioning and Refrigeration	GW

**Apprenticeship Related Instruction**

Carpentry	GW
Construction Management	GW
Construction Trades: Carpentry	GW
Construction Trades: Millwright	GW
Construction Trades: Painting	GW
Construction Trades: Sheet Metal	GW

Electricity	GW
Ironworking	GW
Millwright	GW
Painting	GW
Pipefitter-Refrigeration	GW
Plumbing	GW
Roofing	GW
Sheet Metal	GW
Steamfitting	GW

#### **Aviation and Aeronautics**

Aircraft Construction Technology	CG
Aircraft Maintenance Technology	CG
Aircraft Maintenance Technology (Part 147)	CG
Airframe Maintenance (Part 147)	CG
Airway Science Technology, Flight Emphasis	CG
Aviation Electronics Maintenance Technology	CG
Avionics Technology	CG
Composite Technology	CG
Flight Technology	CG
Powerplant Maintenance (Part 147)	CG
Sheet Metal Structures Technology	CG

#### **Automotive Technology**

Air Conditioning	MC
Air Conditioning and Electrical Accessories	GW
Automotive Chassis	GC
Automotive Drive Trains	GW
Automotive Electrical Systems	MC
Automotive Engine Performance Diagnosis and Air Conditioning	GC
Automotive Engines and Drive Trains	GC
Automotive Performance Technology	MC
Automotive Suspension, Steering and Brakes	GW
Automotive Technology	GC, GW
Brakes, Alignment, Suspension and Steering	MC
Engine Performance and Diagnosis	GW, MC
Transmissions and Power Trains	MC

#### **Building and Construction**

Building Safety Technology	SC
Building Safety and Construction Technology	PC
Planning and Development Technology	SC

#### **Commercial Art/Advertising Art**

Computer Graphic Design	GC, PC
Electronic Pre-Press	GC
Multimedia	GC
Multimedia Imaging & Animation	GC
Multimedia Web Design	GC

#### **Drafting Technology**

Applied Technology-Electro/Mechanical Drafting	MC
Applied Technology Manufacturing Semiconductor Processes	MC
Architectural CAD Technology	GC
Architectural Drafting	PC
Architectural Technology	SC
Architecture	MC

CAD-Based Design Documentation	GC
Civil CAD Technology	GC
Computer-Aided Drafting	MC, PC
Construction Drafting Technology	MC
Construction Drafting I	MC
Construction Drafting II	MC
Construction Drafting III	MC
Electro/Mechanical Drafting	MC
Electromechanical Process Technology	MC
Manufacturing Design Technology	GC
Manufacturing Semiconductor Processes	MC
Mechanical Drafting	MC
Micro Circuit Mask Design	MC
Microcomputer Servicing	GC
Process Technology Level I	MC
Process Technology Level II	MC
Electronics/Electrical Technology	
Cable Telecommunications Installation	SM
Cable Telecommunications Service	SM
Computer and Networking Technology	GC
Electric Utility Technology	SC
Electrical Technology	GW
Electromechanical Automation Technology	MC
Electromechanical Automation Technology I	MC
Electromechanical Automation Technology II	MC
Electronic Industries Technology I	MC
Electronics Engineering Technology	GC, MC
Electronics Manufacturing Technology	GC
Electronics/Microprocessor Technology	MC
Electronics Technology	MC
Electronics Technology I	MC
Electronics Technology II	MC
Local Area Networks Servicing	GC
Cisco Networking	GC
Telecommunications Technology	SM
<b>Environmental Technology</b>	
Biotechnology	MC
Environmental Health and Safety Technology	PV
Hydrologic Studies	GW
Occupational Safety and Health Technology	GW
Safety, Health and Environmental Studies	PV
Wastewater Treatment	RS
Water Distribution and Collection	RS
Water and Industrial Wastewater Treatment Technology	GW
Water Purification Technology	GW
Water Treatment	RS
Water/Wastewater Technology	RS
<b>Engineering</b>	
Civil Engineering Technology	PC
Engineering Technology	GC
<b>Manufacturing</b>	
Aerospace Manufacturing Technology	GW
Applied Technology - Manufacturing Automation	MC
Applied Technology - Manufacturing CNC	MC

Applied Technology - Manufacturing Machining	MC
Applied Technology - Manufacturing Management	MC
Applied Technology - Manufacturing Quality Assurance	MC
Manufacturing Automation	MC
Manufacturing CNC	MC
Manufacturing Engineering Technology	MC
Manufacturing Machining	MC
Manufacturing Management	MC
Manufacturing Quality Assurance	MC
Manufacturing Technology	GW
Manufacturing Welding	MC

(See Welding Technology section for additional information and related areas)

**Machinist**

Machinist, Tool and Die	MC
Machinist, Tool and Die Level I	MC
Machinist, Tool and Die Level II	MC

Welding Technology	
Applied Technology - Welding	MC
Welding Certification	MC

(See Manufacturing section for additional information and related areas)

**Maricopa Skill Center and SouthWest Skill Center at EMCC Certificates**

The Maricopa Skill Center (MSC), a division of GateWay Community College, located at 1245 E. Buckeye Road, Phoenix, and the SouthWest Skill Center at Estrella Mountain Community College, 3000 North Dysart Road, Avondale offers entry-level courses and programs for hands-on job training. The more than 150 non-credit Skill Center certificates are open-entry /open-exit, and self-paced (with the exception of nursing):

**Auto Body**

Basic Refinishing and Metal Repair  
Industrial Spray Painter

**Career Sampler** (A month-long exploration of up to four career choices)

**Computer, Office, Business and Banking Programs**

Accounting/Payroll	
Administrative Clerk/Assistant	EMCC/SWSC
Bank Operations	
Bank Teller	
Call Center	EMCC/SWSC
Cashier	
Computer Repair and A+ Certification	
Computer Software Courses	EMCC/SWSC
Customer Service	EMCC/SWSC
Data Entry	EMCC/SWSC
Encoder	
Graphic Design Applications	
Internet: Basic, Intermediate, HTML, Web Design	
Microcomputer Software Applications	
Office Applications in Legal, Medical, Medical Insurance and Paralegal office skills	
Office Assistant	EMCC/SWSC
Receptionist	EMCC/SWSC
Reservations Agent	
Transcriber	
Travel Agent	



### **Skill Center Certificates (continued)**

#### **Facilities Maintenance**

Facilities Maintenance Worker including Carpentry,  
Electrical, Plumbing and Introduction to HVAC skills

#### **Food Preparation**

Cook's Apprentice  
Kitchen/Baker's helper

#### **Health Care**

Health Core Curriculum (HCC) <sup>1</sup> EMCC

#### **Machine Trades**

Machine Operator  
Manual/CNC Operator  
Lathe/Milling Operator  
CNC/Fanuc Control Upgrade

#### **Meat Cutting**

Meat Cutter Apprentice  
Meat Wrapper/Deli Worker

#### **Medical Assistant (Level II)**

Front Office/Back Office<sup>1</sup> EMCC/SWSC

#### **Nursing (Levels II and III)**

Nursing Assistant<sup>1</sup>  
Practical Nursing<sup>2</sup>

#### **Printing**

Job Shop Printer  
Offset Press Operator  
Bindery Operator

#### **Welding**

Combination Welder  
Arc, MIG, Flux Core and TIG Welding  
Introduction to Pipe Welding

#### **<sup>1</sup>Health Care Integrated curriculum**

<sup>2</sup>MCCD Nursing Programs curriculum blocks 1 and 2

*Estrella Mountain offers a variety of campus programs designed for specialized and flexible needs. These include Developmental Education, Fitness Center, Genesis West, Honors Program, Inspire. Teach and Learning for Life (Community Education Program).*

## **Additional Campus Programs**

