

# Computer Applications, Networking, &

# Information Science Certificates

# 17-18

## COUNSELING CENTER ADVISING

- For the Degree program, see Computer Applications, Networking, Information Science Associate Degree
- Requires a minimum grade of "C" on each course
- Maximum of 6 pass/no pass units accepted
- Minimum of 12 units completed in residence at AVC with a minimum of 9
- examination will not be included in these 12 units)
- Substitutions, with prior permission, may be made for certain courses that may not be offered in the two-year period.
- · Refer to catalog or online website for course listings, descriptions, and suggested course sequence if available.

# Certificate Programs (5)

Science  Major Required Courses units ACCT 201, Financial Accounting 4 BUS 101, Intro. to Business or MGT 101, Mgt. Principles 3 BUS 105, Business Mathematics or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus 3-5 CA 103, Intro. to Computer & Discince or CA 221, Computer Concepts and Applications in Business or CIS 101, Intro. to Computer Accounting Algorithms or CIS 145, Intro. to Membrane Algorithms or CIS 145, Intro. to Programming and Algorithms or CIS 145, Intro. to Programming and Algorithms or CIS 145, Intro. to BASIC Program Electives (see below) 2-5 Units Required for Certificate 30 CIS 141, Introduction to Networking 3 CIS 111, Intro Computers & Discince CA 121, Microcomputer Spreadsheets or ACCT 121, Microcomputer Applications in Business 4 CA 103, Intro. to Computer & Discince CA 103, Intro. to Computer & Discince CA 103, Intro. to Computer & Discince CA 211, Computer Concepts and Applications in Business 4 CIS 145, Introduction to Visual BASIC NET Programming 3 CIS 141, Introduction to Networking 3 CIS 151, Introduction to Networking 3 CIS 141, Introduction to BASIC Program Elective  Major Required Courses units CA 103, Intro. to Computer Spreadsheets ATH 128, College Algebra for Liberal Arts Arts Arts Arth 128, College Algebra for Liberal Arts Arth 129, Cromputer Concepts and Applications in Business 3 CA 171, Microcomputer Spreadsheets 3 CA 1721, Microcomputer Spreadsheets 3 CA 173, Intro. to Computer Applications Arth 129, Cocquational Work Experience 1-8 Arth 129, Cocquational Work Experience 1-8 Arth 129, Cocq	<b>Business Computer Information</b>	Systems	3	
Major Required Courses   units			CA 171, Introduction to Networking	3
BUS 101, Intro. to Business or MGT 101, Mgr. Principles 3 BUS 105, Business Mathematics or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus 3-5 CA 103, Intro. to Computers & Dig. Tech. or CA 221, Computer Concepts and Applications in Business or CIS 101, Intro. to Computers & Dig. Tech. or CA 221, Computer Concepts and Applications in Business or ACT 121, Microcomputer Accounting CA 171, Introduction to Networking 3 CIS 111, Intro. to Programming 4 Algorithms or CIS 145, Intro. to Visual BASIC.NET Programming 3 CIS 114, Introduction to BASIC Program Electives (see below)  Program Electives (see below) 3 CIS 140, Intro. to Computer Applications Applications in Business 3 CA 103, Intro. to Computer Accounting CA 212, Computer Concepts and Applications in Business 3 CA 103, Intro. to Computers & Dig. Tech. 3 CA 121, Microcomputer Accounting CA 221, Computer Concepts and Applications in Business 3 CA 199, Occupational Work Experience 18 CA 221, Computer Concepts and Applications in Business 3 CIS 143, Introduction to Usual BASIC. NET Programming 3 CIS 144, Introduction to Linux 3 CIS 145, Introduction to Basiness 4 CA 121, Microcomputer Accounting CA 212, Computer Concepts and Applications in Business 3 CIS 143, Introduction to Usual BASIC. NET Programming 3 CIS 144, Introduction to Linux 3 CIS 145, Introduction to Basiness 3 CA 103, Intro. to Computers & Dig. Tech. 3 CA 121, Microcomputer Spreadsheets 4 CA 221, Computer Marker Complete any 4 to 6 unit	Major Dogwinod Courses	• <b>:</b> 4a		
BUS 101, furno, to Business or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus of Algorithms or CIS 101, Intro. to Computer Spreadsheets or ACCT 121, Microcomputer Accounting 3 CIS 144, Intro to Programming 3 Program Electives (see below) 2-6 Units Required for Certificate 30 Algorithms or CIS 145, Intro. to Programming 3 CIS 145, Introduction to Business 3 CA 103, Intro. to Computer Accounting 2 BUS 101, Introduction to Business 3 CA 103, Intro. to Computer Accounting 2 CACT 121, Microcomputer Accounting 2 BUS 103, Intro. to Computer Sc Dig. Tech. 3 CA 121, Microcomputer S				
BUS 105, Business Mathematics or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus  CA 103, Intro. to Computer & Dig. Tech. or CA 221, Microcomputer Spreadsheets or ACCT 121, Microcomputer Spreadsheets or ACCT 121, Microcomputer Spreaming and Algorithms or CIS 145, Intro. to Visual BASIC. NET Programming 3 CIS 141, Introduction to BASIC Programming 3 CIS 142, Microcomputer Accounting 2 CIS 111, Intro to Computer Spreadsheets 3 CA 199, Occupational Work Experience 1-8 CA 121, Microcomputer Spreadsheets 3 CA 199, Occupational Work Experience 1-8 CA 121, Microcomputer Spreadsheets 3 CA 199, Occupational Work Experience 1-8 CA 221, Computer Concepts and Applications in Business 4 CA 221, Computer Concepts and Applications in Business 4 CA 221, Computer Concepts and Applications in Business 4 CA 221, Computer Concepts and Applications in Business 4 CR 221, Computer Concepts and Applications in Business 4 CR 221, Computer Concepts and Applications in Business 4 CR 221, Computer Concepts and Applications in Business 4 CR 221, Computer Concepts and Applications in Business 5 CR 221, Computer Concepts and Applications in Business 6 CR 221, Computer Concepts and Applications in Business 6 CR 221, Computer Concepts and Applications in Business 7 Computer Accounting 2 CR 221, Computer Concepts and Applications in Business 8 CR 221, Computer Concepts and Applications in Business 8 CR 221, Computer Concepts and Applications in Business 8 CR 221, Computer Concepts 8 CR 221, Compu		4	•	3
BUS 105, Business Mathematics or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus  Or CA 221, Computer Sorgamming and Algorithms Select any 2-6 units from the following: ACT 121, Microcomputer Accounting Program Electives  Or CS 101, Introduction to BASIC Program Electives  Or ACT 121, Microcomputer Accounting Algorithms or CSI 145, Introduction to BASIC Program Electives  Or CS 101, Introduction to BASIC Program Electives  Or ACT 121, Microcomputer Accounting  Or Wisual BASIC.NET Programming  Or CSI 141, Introduction to BASIC Program Electives  Or CS 221, Computer Concepts and Applications in Business  Or CSI 141, Introduction to BASIC Program Electives  Or ACT 121, Microcomputer Accounting  Or A 121, Microcomputer Accounting  Or A 122, Microcomputer Spreadsheets  Or A 123, Microcomputer Spreadsheets  Or A 124, Microcomputer Spreadsheets  Or A 125, More the following:  ACT 126, Microcomputer Spreadsheets  Or A 127, Microcomputer Spreadsheets  Or A 128, Accoupational Work Experience  Or A 129, Occupational Work Experience  Or A 129, Occupational Work Experience  Or May Drogramming  Or May Drogramming  Or Spreadsweet  Or A 129, Occupational Work Experience  Or May Drogramming  Or May Drogramming  Or May Drogramming  Or May Drogramming  Or Spreadsweet  Or May Drogramming  Or May Drogrammi		3		
or MATH 128, College Algebra for Liberal Arts or MATH 140, Precalculus Or CA 221, Computer Concepts and Applications in Business or CIS 101, Intro. to Computer Se Dig. Tech. 18 Applications in Business or ACT 121, Microcomputer Spreadsheets or ACCT 121, Microcomputer Spreadsheets or AC				
or MATH 140, Precalculus  CA 123, Intro. to Computer Se Dig. Tech. or CA 221, Computer Concepts and Applications in Business or CIS 101, Intro. to Computer Spreadsheets or ACCT 121, Microcomputer Spreadsheets or ACCT 121, Microcomputer Spreamming and Algorithms or CIS 145, Introduction to BASIC Programming 13 CIS 141, Introduction to BASIC Programming 26 CA 121, Microcomputer Accounting 3 CIS 141, Introduction to BASIC Programming 3 CIS 141, Introduction to Business 9 CIS 145, Introduction to Business 9 CA 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 CA 121, Microcomputer Spreadsheet 3 CA 121, Microcomputer Oncepts and Applications in Business 4 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 145, Introduction to Business 3 CIS 157, Introduction to Programming 3 CA 151, Microcomputer Oncepts and Applications in Business 4 CIS 111, Introduction to Programming 3 CIS 171, Introduction to Programming 3 CIS 172, Introduction to CF, NET Programming 3 CIS 173, Introduction to CF, NET Programming 3 CIS 174, Introduction to CF, NET Programming 3 CIS 175, Java Programming			Program Elective (see below)	3
CA 103, Intro, to Computer & Dig. Tech. or CA 221, Computer Concepts and Applications in Business or CIS 101, Intro, to Computer Accounting ACA 121, Microcomputer Spreadsheets or ACCT 121, Microcomputer Accounting Algorithms or CIS 145, Intro, to Visual BASIC.NET Programming Algorithms or CIS 145, Intro, to Visual BASIC.NET Programming Brogram Electives (see below) Program Electives CA 121, Microcomputer Accounting CACT 121, Microcomputer Spreadsheets ACA 121, Microcomputer Spreadsheets CA 221, Computer Concepts and Applications in Business Applications Applications in Business CAMATH 120, Computer Mahamatics CAMATH 128, College Algebra for Liberal Arts AATH 140, Precalculus ACMATH 140, Precalculus	Liberal Arts		Units Required for Certificate	31-32
Complete any 3 units from the following: ACA 121, Computer Concepts and Applications in Business or CIS 101, Intro. to Computer Spreadsheets or ACCT 121, Microcomputer Spreadsheets Accounting ACA 171, Introduction to Networking 3 CIS 111, Intro. to Programming and Algorithms or CIS 145, Intro. to Visual BASIC.NET Programming 3 CIS 141, Introduction to BASIC Program Electives (see below) 2-6 Units Required for Certificate 30 Program Electives Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Intro duction to Business 3 CA 103, Intro. to Computers & Dig. Tech. 30 CIS 145, Introduction to Visual BASIC. NET Programming 3 CRIS 141, Introduction to BASIC Program Electives Units Required for Certificate 30 Caption of the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 CA 103, Intro. to Computer Accounting 4 CA 111, Microcomputer Spreadsheets 3 CA 103, Intro. to Computer Accounting 3 CA 113, Microcomputer Spreadsheets 3 CA 103, Intro. to Computer Accounting 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 111, Intro. to Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Computer Info. Science 3 CIS 111, Introduction to Programming 3 CIS 111, Introduction to Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Computer Accounting 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 111, I	or MATH 140, Precalculus	3-5	Dragnam Flootiyas	unita
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Accounting 2-3 CA 171, Introduction to Networking CIS 111, Intro. to Programming and Algorithms or CIS 145, Intro. to Visual BASIC. NET Programming 3 CIS 141, Introduction to BASIC Program Electives (see below) 2-6 Units Required for Certificate 30  Program Electives units Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computer Spreadsheets 3 CA 121, Microcomputer Spreadsheets 3 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Visual BASIC. NET Programming 3 ACIS 199, Occupational Work Experience 1-8 CA 221, Computer Concepts and Applications with a counselorativisor for availability of courses.  Computer Applications  Major Required Courses units CA 103, Intro. to Computers & Dig. Tech. Arts or MATH 120, Cinear Algebra 3-5 PHIL 110, Intro. to Copy and Analytic Geometry or MATH 120, Cilculus and Analytic Geometry 5 Computer Applications  Major Required Courses units CA 103, Intro. to Computer Spreadsheets 3 CA 121, Microcomputer Spreadshe				4
CA 171, Introduction to Networking CIS 111, Intro. to Programming and Algorithms or CIS 145, Intro. to Visual BASIC.NET Programming 3 CIS 141, Introduction to BASIC Program Electives (see below) 2-6 Units Required for Certificate 30 Program Electives Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting BUS 105, Business Mathematics 3 CA 193, Intro. to Computer Spreadsheets 3 CA 199, Occupational Work Experience CA 221, Computer Concepts and Applications in Business Arts CA 111, Introduction to Programming and Algorithms 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 199, Occupational Work Experience 1-8 CATH 128, College Algebra for Liberal Arts Arts CA 111, Introduction to Programming and Algorithms 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 124, Introduction to Business 4 CIS 111, Introduction to Programming 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 124, Assembly Language and Computer Architecture 3 CIS 125, Assembly Language and CIS 161, Intro. to C Programming 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 126 Computer Mathematics 3 CIS 127, Assembly Language and CIS 128, Assembly Language and CIS 129, Occupational Work Experience AMATH 128, College Algebra for Liberal Arts or MATH 150, Calculus and Analytic Geometry or MATH 120, Linear Algebra 3-5 PHIL 110, Intro. to Logic Program Electives (see below)  Units Required for Major  3 CIS 175, Introduction to LINUX 3 CIS 175, Introduction to C#-NET Programming 3 CIS 175, Introduction to C#-Programming 3 CIS 175, Java Programming	*	2-3	CIS 145, Introduction to Visual BASIC.	
CIS 111, Intro. to Programming and Algorithms or CIS 145, Intro. to Visual BASIC. Programming 3 Program Electives (see below) 2-6 Units Required for Certificate 30 Major Required Courses Units (Cast 111, Introduction to Business Aca 103, Intro. to Computer Spreadsheets 3 Cast 111, Introduction to Programming and Algorithms 3 Cast 111, Introduction to Programming and Algorithms 3 Cast 111, Introduction to Visual BASIC. NET Programming 3 Cast 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts Or Cast 221, Computer Concepts and Applications in Business 3 Cast 101, Introduction to Visual BASIC. Net Programming 3 Cast 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts Or Cast 221, Computer Concepts and Applications in Business 4 Computer Applications or Cast 221, Computer Concepts and Applications in Business 3 Cast 101, Intro. to Logic 3 Cast 111, Introduction to Visual BASIC. Net Programming 3 Cast 112, Microcomputer Spreadsheets 3 Cast 113, Introduction to Cast 113, Introduction to Cast 114, Introduction to Cast 115, Microcomputer Spreadsheets 3 Cast 114, Introduction to Visual BASIC. Net Programming 3 Cast 115, Introduction to Visual BASIC. Net Programming 3 Cast 114, Introduction to Visual BASIC. Net Programming 3 Cast 115, Introduction to Visual BASIC. Net Programming 3 Cast 114, Introduction to Visual BASIC. Net Programming 3 Cast 115, Introduction to Cast 115, In			NET Programming	3
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Visual BASIC.NET Programming CIS 141, Introduction to BASIC Program Electives (see below) 2-6 Units Required for Certificate 30  Program Electives Units Required Courses Units Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computers & Dig. Tech. 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Microcomputer Spreadsheets 3 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Programming and Algorithms 3 CIS 145, Introduction to Programming and Algorithms 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 161, Intro. to C Programming 3 MATH 128, College Algebra for Liberal Arts Arts MATH 128, College Algebra for Liberal Arts MATH 140, Precalculus  MATH 128, College Algebra for Liberal Arts MATH 140, Precalculus  MATH 140, Precalculus  Major Required Courses Units Complete any 4 to 6 units from the following: CIS 173, Introduction to C++ Programming 3 CIS 173, Introduction to C++ Programming 3 CIS 175, Int			CIS 199, Occupational Work Experience	1-8
Program Electives (see below) 2-6 Units Required for Certificate 30 Program Electives units Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 121, Microcomputer Spreadsheets 3 CA 190, Occupational Work Experience 1-8 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Visual BASIC. NET Programming and Algorithms 3 CIS 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts MATH 140, Precalculus 5 MATH 140, Precalculus 6 CA 221, Computer Concepts and Applications in Business 9 MATH 140, Precalculus 6 MATH 150, Calculus and Applications in Business 9 MATH 120, Linear Algebra for Liberal Arts 6 Computer Applications 9 Major Required Courses 1-8 CA 111, Word Processing—Microsoft Word 3 CA 121, Microcomputer Spreadsheets 3 CA 25 (15 111, Intro. to Computer Info. Science 3 CIS 111, Intro. to Computer Mathematics 3 CIS 113, Data Structures 3 CIS 121, Computer Mathematics 3 CIS 121, Intro. to C Programming 3 CIS 121, Intro. to C Programming 3 MATH 128, College Algebra for Liberal Arts of MATH 120, Calculus and Analytic Geometry 3 CIS 173, Introduction to LiNUX 3 CIS 173, Introduction to C#.NET Programming 3 CIS 175, Java Programming 3 CIS 175		3		
Program Electives (see below) 2-6 Units Required for Certificate 30  Program Electives units Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computers & Dig. Tech. 3 CA 121, Microcomputer Spreadsheets 3 CA 131, Relational Database Management and Design 3 CA 151, Microcomputer Operating Systems 3 CA 151, Microcomputer Info. Science 3 CA 151, Microcomputer Poperating Database Management and Design 3 CIS 101, Intro. to Computer Info. Science 3 CA 151, Microcomputer Operating Systems 3 CLS 131, Relational Database Management and Design 3 CA 151, Microcomputer Operating Systems 3 CLS 111, Intro. to Computer Info. Science CS 13 (CS 151, Intro. to Computer Info. Science CS 151 (Intro. to Computer Mathematics 3 CIS 1101, Intro. to Computer Info. Science CIS 111, Intro. to Computer Mathematics 3 CIS 111, Intro. to Computer Mathematics 3 CIS 151, Intro. to C Programming 3 CIS 121, Computer Mathematics 4 CIS 111, Intro. to C Programming 3 CIS 161, Intro. to C Programming 4 CIS 161, Intro. to C Programming 4 CIS 161, Intro. to C Programming 5 CIS	CIS 141, Introduction to BASIC		Computer Software Developer	
Units Required for Certificate  Program Electives  units Select any 2-6 units from the following: ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computers & Dig. Tech. 3 CA 121, Microcomputer Spreadsheets 3 CA 199, Occupational Work Experience 1-8 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts 3 MATH 128, College Algebra for Liberal Arts 4 Arts 3 MATH 120, Calculus and Analytic Geometry or MATH 220, Linear Algebra 3-5 PHIL 110, Intro. to Logic 3 Program Electives (see below) 4-6 Units Required for Major 3 CIS 173, Introduction to C++ Programming 3 CIS 175, Java Programming 3 CIS	Programming	3	Computer Software Developer	
Management and Design   3	Program Electives (see below)	<u>2-6</u>	Major Required Courses	units
Select any 2-6 units from the following:  ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computer Se Dig. Tech. 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Microcomputer Spreadsheets 3 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Programming and Algorithms 3 CIS 121, Computer Concepts and Applications to Visual BASIC. NET Programming 3 CIS 145, Introduction to Visual BASIC. NET Programming 3 CIS 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts or MATH 150, Calculus and Analytic Geometry or MATH 220, Linear Algebra 3-5 PHIL 110, Intro. to Logic 3 Program Electives (see below) 4-6 Units Required for Major 3 CIS 1573, Introduction to C++ Programming 3 CIS 173, Introduction to C++ Programming 3 CIS 173, Introduction to C++ Programming 3 CIS 174, Introduction to C++ Programming 3 CIS 175, Java Programming 3 CIS 179, Occupational Work Experience 1-8 Math 128, College Algebra for Liberal Arts or CA 221, Computer Concepts and Applications in Business 3-4 CA 111, Word Processing-Microsoft Word 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Microcomputer Occupits 3 CIS 113, Introduction to Programming 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 121, Introduction to Cis 121, Introduction to Cis 121, Introduction to Cis 121, Introduction to C++ Programming 3 CIS 123, Assembly Lang	Units Required for Certificate	30		
Select any 2-6 units from the following:  ACCT 121, Microcomputer Accounting 2 BUS 101, Introduction to Business 3 BUS 105, Business Mathematics 3 CA 103, Intro. to Computer Spreadsheets 3 CA 199, Occupational Work Experience 1-8 CA 221, Computer Concepts and Applications in Business 4 CIS 111, Introduction to Visual BASIC. NET Programming 3 CIS 199, Occupational Work Experience 1-8 MATH 128, College Algebra for Liberal Arts 0 MATH 140, Precalculus 5 MGT 101, Management Principles 3 # Consult with a counselor/advisor for availability of courses.  Computer Applications  Major Required Courses units CA 103, Intro. to Computer Se Dig. Tech. or CA 221, Computer Concepts and Applications in Business 3-4 CA 111, Word Processing-Microsoft Word 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Introduction to Programming 3 CIS 199, Occupational Work Experience 1-8 MATH 140, Precalculus 5 Major Required Courses units CA 103, Intro. to Computer Se Dig. Tech. or CA 221, Computer Concepts and Applications in Business 3-4 CA 111, Word Processing-Microsoft Word 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Microcomputer Spreadsheets 3 CA 121, Microcomputer Spreadsheets 3 CIS 101, Intro. to Programming 3 CIS 113, Data Structures 3 CIS 121, Computer Mathematics 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 121, Computer Architecture 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 121, Computer Architecture 3 CIS 123, Assembly Language and Computer Architecture 3 CIS 124, Intro. to CP rogramming 3 MATH 128, College Algebra for Liberal Arts or MATH 150, Calculus and Analytic Geometry 0 MATH 220, Linear Algebra 3-5 PHIL 110, Intro. to Logic 3 Program Electives (see below) 4-6 Units Required for Major 36 Units Required for Major 36 CIS 151, Introduction to C++ Programming 3 CIS 175,	Program Flactives	unite	e e	
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CA 121, Microcomputer Spreadsheets 3 MATH 220, Linear Algebra 4  CA 131, Relational Database Management and Design 3		3	•	_
CA 131, Relational Database Management and Design  MATH 220, Linear Algebra  4			•	
Management and Design 3			IVIATH 220, Linear Algebra	4
CA 151, Microcomputer Operating		3		
	CA 151, Microcomputer Operating			

# **Computer Networking** (Core & Multi-Platform)

CA 107, Microcomputer Hardware and Software Support

units

3

**Required Courses** 

and Software Support	3	
CA 151, Microcomputer Operating		
Systems	3	
CA 171, Intro. to Networking	3	
CA 175, Administering Windows Server	3	
CA 176, Windows Server Networking	3	
CA 182, Network Security	3 3 3 3 3	
CIS 157, Intro. To LINUX	3	
CIS 159, SUSE Linux Server		
Administration	3	
Program Electives (see below)		
<b>Units Required for Certificate</b>	<u>6</u> 30	
<b>Program Electives</b>	units	
Complete 6 units from the following netwo	orking	
program electives.	Ü	
CA 103, Intro. to Computers & Dig. Tech.	3	
CA 131, Relational Database		
Management and Design	3	
CA 132, Oracle SQL		
Database Management	3	
CA 153, Windows Installation and		
System Support	3	
CIS 111, Introduction to Programming		
and Algorithms	3	
CIS 113, Data Structures	3	
CIS 123, Assembly Language and		
Computer Architecture	3	
CIS 141, Introduction to Basic		
Programming	3	
CIS 145, Intro. to Visual BASIC.NET		
Programming	3	
CIS 161, Introduction to C Programming	3 3 3	
CIS 173, Introduction to C++ Programming	3	
CIS 175, Java Programming	3	
121 with a satisfactory grade or placem	ent by	
AVC assessment into a math course hig	her	
.1 MATTIT 100		

bv than MATH 102.

# Requirements for Two or **More Certificates**

To earn more than one certificate, a course can be used as part of as many certificate requirements as the student wishes to obtain.

## Transfer

Students planning to continue studies at a four-year college or university after AVC should visit the Transfer Resource Center and consult with a counselor as soon as possible to develop a plan of studies.

The "Catalog Rights Policy" sets forth the criteria used for determining the degree requirements under which students may graduate. Please refer to the AVC Catalog for a detailed description or consult with a counselor. For an educational plan, please consult with a counselor. To obtain counseling services please call: (661) 722-6338

### **Prerequisite Completion**

If a course is listed as a prerequisite for another course, that prerequisite course must be completed with a satisfactory grade in order to enroll in the next course. According to Title 5, Section 55200(d), a satisfactory grade is a grade of "A," "B," "C" or "P". Students who enroll in classes for which they do not meet the prerequisites will be involuntarily dropped. Students will be notified of this involuntary drop.

#### Antelope Valley College's website: www.avc.edu

To contact the Career Technical Education Division, please call: 661-722-6300 ext. 6370

ACCT 121 \*MICROCOMPUTER ACCOUNTING Prerequisite: Completion of ACCT 201 or ACCT 111 within the past five years. Advisory: Basic keyboarding skills, and Eligibility for READ 099. (CSU, AVC)

ACCT 201 \*FINANCIAL ACCOUNTING Advisory: Completion of ENGL 101/ENGL 101SL, and Eligibility for MATH 115, MATH 116 or MATH 124

(CSU, UC, AVC)

BUS 101 \*INTRODUCTION TO BUSINESS Advisory: Eligibility for College Level Reading and ENGL 099 (CSU, UC, AVC)

BUS 105 \*BUSINESS MATHEMATICS Advisory: Eligibility for READ 099 and MATH 070. (AVC)

CA 103 \* INTRODUCTION TO COMPUTERS & DIGITAL TECHNOLOGY Advisory: Eligibility for ENGL 099, READ 099 and MATH 070. (CSU, UC, AVC)

CA 107 \*MICROCOMPUTER HARDWARE AND SOFTWARE SUPPORT

Advisory: Completion of CA 103, CA 221 or CIS 101, and Eligibility for ENGL 099, READ 099, and MATH 070. (AVC)

#### CA 111 \*WORD PROCESSING-MICROSOFT WORD

Advisory: Completion of CA 103 or CA 221 and OT 101, and the Ability to type 30 wpm, and Eligibility for ENGL 099 and READ 099. (CSU, AVC)

CA 121 \*MICROCOMPUTER SPREADSHEETS *Advisory*: Completion of CA 103 or CA 221, and Eligibility for READ 099 and MATH 070. (CSU, AVC)

CA 131 \*RELATIONAL DATABASE MANAGEMENT AND DESIGN Advisory: Completion of CA 103 or CA 221, and Eligibility for READ 099 and MATH 070. (CSU, AVC)

#### CA 132 \*ORACLE SQL DATABASE MANAGEMENT

Advisory: Completion of CA 103, CA 121, CA 131, or CIS 101, and Eligibility for ENGL 099, READ 099, and MATH 102. (CSU, AVC)

#### CA 151 \*MICROCOMPUTER OPERATING SYSTEMS

Advisory: Completion of CA 103 or CA 221, and Eligibility for ENGL 099 and READ 099. (CSU, AVC)

#### CA 153 \*WINDOWS INSTALLATION AND SYSTEM SUPPORT

Advisory: Completion of CA 103 or CIS 101, Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, AVC)

CA 171 \*INTRODUCTION TO NETWORKING Advisory: Completion of CA 103 or CA 221, and Eligibility for ENGL 099, READ 099 and MATH 070.

CA 175 \*ADMINISTERING WINDOWS SERVER Advisory: Completion of CA 103 or CA 221 or CIS 101, and Eligibility for ENGL 099 and READ 099.

CA 176 \*WINDOWS SERVER NETWORKING Prerequisite: Completion of CA 175. Advisory: Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, AVC)

CA 182 \*NETWORK SECURITY Advisory: Completion of CA 171 or CA 175, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, AVC)

#### CA 199 \*OCCUPATIONAL WORK EXPERIENCE

Prerequisite: To participate in work experience, students must have a job or internship which is either paid or voluntary and have the approval of the supervisor and instructor supervising work experience in the specific subject area. PRIOR TO ENROLLING, students must attend a scheduled orientation or meet individually with the supervising instructor for an individual orientation. (CSU, AVC)

#### CA 221 \*COMPUTER CONCEPTS AND APPLICATIONS IN BUSINESS

Advisory: Completion of ACCT 201, and Eligibility for College Level Reading, ENGL 101/ENGL 101SL and MATH 070. (CSU, UC, AVC)

#### CIS 101 \*INTRODUCTION TO COMPUTER INFORMATION SCIENCE

Advisory: Eligibility for ENGL 099, READ 099 and MATH 102 (CSU, UC, AVC)

#### CIS 111 \*INTRODUCTION TO PROGRAMMING AND ALGORITHMS

Advisory: Completion of CA 103 or CA 221 or CIS 101, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, UC, AVC)

### CIS 113 \*DATA STRUCTURES

Prerequisite: Completion of CIS 111 or CIS 161. Advisory: Completion of CIS 121 and MATH 128 or MATH 140, and Eligibility for ENGL 099, READ 099. (CSU, UC, AVC)

CIS 121 \*COMPUTER MATHEMATICS Advisory: Completion of CIS 111, CIS 113, and MATH 128 or MATH 140, and Eligibility for College Level Reading and ENGL 099. (CSU, UC, AVC)

CIS 123 \*ASSEMBLY LANGUAGE AND COMPUTER ARCHITECTURE

Advisory: Completion of CIS 111, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, UC, AVC)

#### CIS 141 \*INTRODUCTION TO BASIC PROGRAMMING

Advisory: Completion of CA 103 or CIS 101, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, UC, AVC)

CIS 145 \*INTRODUCTION TO VISUAL BASIC.NET PROGRAMMING

Advisory: Completion of CIS 141 and either CIS 111 or CIS 173, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, AVC)

CIS 157 \*INTRODUCTION TO LINUX Advisory: Completion of CA 103, CA 221 or CIS 101, and Eligibility for ENGL 099, READ 099 and MATH 102. (CSU, AVC)

#### CIS 159 \*SUSE LINUX SERVER ADMINISTRATION

Prerequisite: Completion of CA 151, CA 171, or CIS 157. Advisory: Eligibility for ENGL 099 and READ 099. (CSU, AVC)

CIS 161 \*INTRODUCTION TO C PROGRAMMING Advisory: Completion of CIS 101, and Eligibility for ENGL 099, READ 099 and MATH 128. (CSU, UC, AVC)

CIS 173 \*INTRODUCTION TO C++

PROGRAMMING

Prerequisite: Completion of CIS 161. Advisory: Eligibility for ENGL 099, READ 099 and MATH 128. (CSU, UC, AVC)

CIS 175 \*JAVA PROGRAMMING Prerequisite: Completion of CIS 111.

Advisory: Eligibility for ENGL 099, READ 099 and MATH 128. (CSU, UC, AVC)

CIS 199 \*OCCUPATIONAL WORK EXPERIENCE

Prerequisite: To participate in work experience, students must have a job or internship which is either paid or voluntary and have the approval of the supervisor and instructor supervising work experience in the specific subject area. PRIOR TO ENROLLING, students must attend a scheduled orientation or meet individually with the supervising instructor for an individual orientation. (CSU, AVC)

MGT 101 \*MANAGEMENT PRINCIPLES Advisory: Eligibility for ENGL 099, READ 099 and MATH 065. (CSU, AVC)

MATH 102 \*INTERMEDIATE ALGEBRA Prerequisite: Eligibility for MATH 102 (AVC assessment) or Completion of MATH 070. Advisory: Eligibility for READ 099. (AVC)

MATH 140 \*PRECALCULUS

Prerequisite: Eligibility for MATH 140 (AVC Assessment) or Completion of MATH 105 and MATH 135. Advisory: Eligibility for College Level Reading.

MATH 150 CALCULUS AND ANALYTIC GEOMETRY

Prerequisite: Eligibility of Math 150 (AVC Assessment test) or Completion of MATH 140. Advisory: Eligibility for College Level Reading. (CSU, UC, AVC)

MATH 220 LINEAR ALGEBRA

Prerequisite: Completion of MATH 160. Advisory: Eligibility for College Level Reading. (CSU, UC, AVC)

PHIL 110 INTRODUCTION TO LOGIC Advisory: Eligibility for College Level Reading, ENGL 099 and MATH 070. (CSU, UC, AVC)

#### Advisory:

A condition of enrollment that a student is advised, but not required, to meet before or in conjunction with enrollment in a course or educational program.

#### Prerequisite:

A condition of enrollment that a student is required to meet in order to demonstrate current readiness for enrollment in a course or educational program. Prerequisites are enforced and a student will be blocked from enrolling or involuntarily dropped after enrolling if the student does not meet the stated prerequisite. A student must complete a course prerequisite with a satisfactory grade of A, B, C or P (pass).

#### Corequisite:

A condition of enrollment consisting of a course that a student is required to simultaneously take in order to enroll in another course. Corequisites are enforced and a student will be blocked from enrolling if the student does not meet the stated requisite.