NETWORKING
COMPUTER INFORMATION SYSTEMS/TELECOMMUNICATIONS

Coherent Sequence

The courses in the First Semester (Introduction to Computers, Microcomputer Applications, Visual BASIC I, and PC Repair and Maintenance) are designed to teach the students computer concepts and software use for personal, educational, and business purposes as well as providing them with introductory Visual Programming skills. In this semester students also learn the first part of the material necessary to prepare them for Microsoft's A+ Certification examination.

The Second Semester courses (Visual BASIC II, Internet, Networking Essentials) are designed to teach students advanced event driven programming techniques, database creation, access, and report generation through Crystal Report. This semester students also produce Web page using Front Page. Finally, they are involved in learning the second portion of the material required for Microsoft's A+ Certification examination.

The Third Semester courses (E-commerce Applications, Advanced Microcomputer Applications, Cisco Certification Prep I, and Windows 2000 Professional) are designed to teach students how to use and evaluate E-commerce applications in terms of their functionality, how to produce commercial document, spreadsheets, graphs, databases, and presentations. In this semester students also learn the first half of the required material for Microsoft's MCP and Cisco's CNA Certification examinations.

The Fourth Semester courses (Cisco Certification Prep II, and Windows 2000 Server) are designed to teach students the second half of the required material to prepare them for Microsoft's MCP and Cisco's CNA certification examinations.

Relation to Job Skills and Knowledge of the Occupation:

Today, computer networks have become the major means of communications, information storage, and retrieval and throughout the world.

Networking curriculum prepares students with the skills necessary to design, implement, maintain and administer LANs and WANs and with connectivity to the Internet. The curriculum also prepares students for the industry standard LAN and WAN certification examinations.

Form 2 - New/Change Program Form (ACT 31-II)
Summary Analysis of Occupational Programs
Community College Act 31 (Variable Stipend)
Fiscal Year 2001-2002

Type of Program		Type of Degree		Reason for Submission		Committee Use	
X	Advanced Technology	X	Associate Degree	X	New Program		Approved
	Statewide		Certificate		Changed Program		Disapproved
	Other Occupational		Diploma		5-Year Review		

Date last reviewed: 2000

Institution:	**Community College of Beaver**	Completed By:	Heidie G. McCauley	Date:	4/11/01

Program Title: **Networking** - Computer Information Systems/Telecommunications

CIP Code Number		CIP Program Title Number:	**Networking**

Catalog Page #: _____   Credits Required: 66

A Typed Copy or Catalog Version of the Program Description and Objective Must be Attached to this Form

	Specialized and Related Courses			Other Courses	
Course #	**Course Title:**	**Credits**	**Course #**	**Course Title:**	**Credit**
BD150	Introduction to Computers	3	HE155	English Composition I	3
BD155	PC Repair and Maintenance	3	HE150	Writing for Business and Technology OR	3
BD160	Visual BASIC I	3	MAXX	Math Elective	3
BD165	Visual BASIC II	3	HPXX	Social Science Elective	3
BD170	Internet	3	HPXX	Social Science Elective	3
BD175	Networking Essentials	3	BBXX	Business Elective	3
BD180	Windows 2000 Professional	3	XXXX	General Education Elective	3
BD182	E-Commerce Applications OR				
BD243	Advanced Microcomputer Applications	3			
BD238	Cisco Certification Prep I	3			
BD240	Cisco Certification Prep II	3			
BD241	Microcomputer Applications	3			
BD252	Windows 2000 Server	3			
BD260	Technology Internship OR				
BDXX	CIS/Telecom Elective	3			
TCXX	High Technology Elective OR				
EEXX	Electronic Engineering Elective OR				
BDXX	CIS/Telecom Elective	3			

Total Number of Courses:	15	Total Number of	45	Total Number of Courses:	7	Total Number of Credits:	21

*Attach a relevant narrative on how the specialized and related courses are coherently sequenced and directly relate to the job skills and knowledge of the occupation

Continued from Previous Page
New/Change Program Form (ACT 31-II)
Summary Analysis of Occupational Programs
Community College Act 31 (Variable Stipend)
Fiscal Year 2000-2001

Type of Program
Advanced Technology
Statewide
Other Occupational

Type of Degree
Associate Degree
Certificate
Diploma

Reason for Submission
New Program
Changed Program
5-Year Review

Committee Use
Approved
Disapproved

Institution:		Completed By:		Date:	
Program Title:					
CIP Code Number:		CIP Program Title: Number:			

Catalog Page #: _____   Credits Required: _____

Total Number of Courses:	15	Total Number of	45	Total Number of Courses:	7	Total Number of Credits:	21

Form 3 - Advanced Technology Programs (ACT 31-III)
Summary Analysis of Advanced Technology Programs
Community College Act 31 (Variable Stipend)
Fiscal Year 2001-2002

<u>Reason for Submission</u>

X   New Program
___ Changed Program
___ 2001 Review

Total Credit Hours in Program: 66
Total Contact Hours in Program: ___

Catalog Edition: 2000 – 2001

CIP Code: ___
Advanced Technology Contact Hours: 580

Minimum for Certificate Program: 100
Minimum for Degree Program: 150

Institution: **Community College of Beaver County**

Program Title: **Networking** - Computer Information Systems/Telecommunications

List Advanced Technology Outcomes:

1. Repair and upgrade a microcomputer.
2. Make, install, and document network cables.
3. Install, configure, manage, and troubleshoot a Windows-based Client.
4. Plan, install, configure, manage, and troubleshoot a Windows-based Server.
5. Setup and configure routers for LAN use.
6. Setup and configure routers for WAN use.
7. Manage and troubleshoot routing problems.
8. Install, configure, and manage an E-commerce server.
9. Take Microsoft's A+ Certification examination and successfully pass the exam
10. Take Microsoft's MCP Certification exam and successfully pass the exam.
11. Take Microsoft's MCSE Certification exam and successfully pass the exam.
12. Take Cisco's CNA exam and successfully pass the exam.
13. Acquire on the job experience in LAN and WAN areas.

Course Number	Page Number	Lecture Hours	Lab Hours	Advanced Tech Contact Hours	Specific Advanced Technology Instructional Activities, Including Any Analytical Understanding of and Hands on Use of Equipment
BD150	107	45	20	30	Study of computer hardware: input/output devices, storage devices, processors through use of microcomputers. Basic operating system functions through use of the latest version of Windows operating system. Study of computer communications hardware and software: NIC, modems, cables, hubs, browsers, search engines, e-mail using computers connected to the Internet via a LAN.
BD155		45	35	45	Includes the preliminary activities required for A+ certification. A study of motherboard. RAM: types, upgrading, handling. Hard Drives: functions, installation, interfaces, and support. I/O: types, interfaces, support, drives, and sharing devices through a network. Basic electronic: electricity, power supplies, and test instruments. Viruses, disaster recovery, and establishing a

					maintenance plan.
BD160	108	45	20	35	A study of "Event Driven Programming" through use of Visual BASIC: VB controls and their associated properties and procedures calls, building interactive GUI based on common interface standards. General programming logic and syntax. Developing Event Driven applications using variables, arithmetic, relational, and logical operators. Use of the Menu editor.
BD165	108	45	20	35	Study of the tools and methods available in Visual BASIC (OLE, ActiveX Controls) to increase the interaction between a user and the computer. Study of loops, advanced decision structures, and data validation. Use of VisData to create databases. Use of QSL instructions in VB environment. Use of Crystal Report to access data stored over variety of DBMS.
BD170	108	45	20	35	A study of the Internet's structure and TCP/IP protocol suite, use of search engines to access the information available on the Internet for academic and business use; use of POP3 e-mail and ftp; designing and coding Home Pages using HTML and MS Front Page.
BD175		45	35	45	Includes the advance material required for A+ Certification: OSI network architecture, Network topologies, LAN Protocols (IEEE 802.2, IEEE.802.3, IEEE802.5, etc.), WAN protocols (X.25, ISDN, Frame Relay, ATM, FDDI, SONET, and SMDS). Installing NT NOS, Installing network services components, solving network problems.
BD180		45	35	45	Includes the preliminary activities required for MCP Certification. Installing Windows 2000 Professional. Using MMC, Task Scheduler, and Control Panel. Managing the File Systems and storage. Creating Users, Groups, Profiles, and Policies. Security and Access Control. Installing the required hardware and software for RAS. Installing and managing a Printer Server, Installing and tuning software applications on Win 2000. Troubleshooting, disaster protection, and Recovery.
BD182		45	35	40	A study of E-commerce software development tools and the security threats due to these types of software. Converting a traditional commerce to an E-commerce using Yahoo's and BigStep on-line store software applications. Creating an E-commerce store catalog using MS Access.
BD238		45	35	45	Includes preliminary activities required for Cisco CNA Certification. Study of transistors, resistors, capacitors. A detailed examination of Motherboard, CPU, RAM, ROM, Expansion slots. A detailed examination of NIC, Modem, Video card, Sound card. Comparing and contrasting Hub, Switches, and Bridges. Structured cabling: EIA/TIA-5586B standards. Making, Installing, documenting and labeling network cables. Routing and addressing using TCP/IP protocols suit.
BD240		45	35	45	Includes advanced activities required for Cisco CNA Certification. Study of use of routers for LANs, Use of Routers for WAN. Gaining access to other routers using Cisco Discovery Protocol. Router Startup and Setup. Routing protocols and router configuration. IP Address configuration and verification.
BD241	108	45	20	35	An introductory level study of microcomputer based decision support systems and productivity tools; use of electronic spreadsheets to create mathematical and statistical, and business models; use of data base management to design, collect and generate reports for business applications; use of presentation software to prepare presentations for variety of occasions.

BD243 (Recommended Elective)	45	35	45	Generate form letters, mailing labels, and envelops using MS Word. Using MS Excel's financial functions and 3-D formulas create spreadsheets and graphs. Create databases, design the interface to interact with the databases and generate reports using MS Access. Create presentations containing clip arts, graphs, and animations.
BD252	45	35	45	Covers advanced level activities required for Microsoft MCP Certification. A study of methods used for planning for a network model, network server hardware, network protocols, archive directory and security. Server installation and configuration. Storage, backup, and performance configurations. Managing user accounts and client connectivity. Managing Groups, Folders, Files, and Object Security. Application software installation and configuration. Network printer installation and configuration. Remote access and VPN. Managing Internet access and network interoperability. Server monitoring and optimization. Troubleshooting
BD260	0	90	15	Analyze, design and implement a LAN with connectivity to the Internet. Manage and troubleshoot Windows bases servers and clients. Setup, configure, and troubleshoot routers utilized for LAN and/or WAN. Install, configure, and maintain an E-commerce server
BD168 (Recommended Elective)	45	35	40	Working with variables, functions, and events to create interactive Web pages. Use of Java script and DHTML to create animations on the Web pages. Cookies and security concerns when using the Web.