



CLINTON ♦ MUSCATINE ♦ SCOTT
COMMUNITY COLLEGES
⇒ EASTERN IOWA COMMUNITY COLLEGE DISTRICT

INFORMATION TECHNOLOGY

- *Software Development*
 - *Web Design*
- *Networking*
 - *CCNA*
 - *CCNP*

PROGRAM DESCRIPTION

ASSOCIATE IN APPLIED SCIENCE DEGREE

**Information Technology
Scott Community College
Kahl Educational Center
Davenport, IA 52801**

Lori Walljasper/Jerry Wilkerson
Department Co-Coordinators
563-336-5217/563-336-5212

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CISCO Coordinator
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Revised October 2007

*Accounting Specialist, A,
Art, Auto Collision Auto
Repair, Aviation, Bankin
Biology Business Admini
Chemistry, Child Care,
Computer Science, Cons
Culinary Arts, Criminal
Justice, Dental Assisting,
Diesel, Drama, Educatio
Electroneurodiagnostic,
Electronics, English, En
Compliance, Farm Mana
Feed and Fertilizer Mark
Heating, Ventilation and
Air Conditioning, Histor
Horticulture Science, Ind
Engineering Technology
- CAC/CNC, Industrial
Safety and Health, Interi
Design, Library Technic
Assistant, Management
Support Systems, Manufa
Microcomputer Informat
Technology, Music, Jour
Management and Supervi
Marketing/Sales/Retailin
Mathematics Network
Administrator, Pharmar
Technician, Physical Ed
Recreation, Physical The
Assistant, Physics, Politic
Science, Pre-Chiropractic
Pre-Engineering, Pre-He
Nursing, Pre-Mortuary
Science, Pre-Pharmacy,
Pre-Physical Therapy, Pr
Pre-Veterinary, Pre-Law,
Printing, Psychology, Ra
Sign Language Interpret
Sociology & Social Work,
Speech, Truck Driving,
Accounting Specialist, A
Agriculture, Art, Auto C
Collision Repair, Autom
Aviation, Banking, Biolo
Business Administration,
Chemistry, Child Care,
Communications Media,
Computer Science, Cons
Culinary Arts, Criminal*

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PROGRAM DESCRIPTION

We have become an information society, one that relies on computers to process our data into meaningful information. With this increase in computer usage, comes a shortage of competent computer programmers, web designers, network administrators, and PC support technicians.

The Information Technology (IT) department offers an Associate in Applied Science (A.A.S.) Degree. This two-year degree has two concentration areas: Software Development (Programming) and Networking. The department also offers the CCNA and CCNP CISCO Networking Certificates and a Certificate in Web Design.

Software Development: This A.A.S. degree concentration area provides the fundamentals necessary for solving business-oriented problems through the use of computer programming languages. Students obtain extensive hands-on experience writing programs using the .NET framework, Java, COBOL, and Oracle PL/SQL. Object-Oriented Program (OOP) and Client/Server design is covered as well as system analysis and design to provide the student with a wide variety of programming experience in the Windows and Web environments.

Networking: this A.A.S. degree concentration area provides students with strong PC troubleshooting and repair skills, desktop support, network administration, and router/switch configuration experience. Hands-on assignments with both onsite and remote equipment allow students to troubleshoot and practice on equipment they will set up and maintain in the field.

JOB OUTLOOK AND EMPLOYMENT OPPORTUNITIES

Think computer jobs are being outsourced? Well, think again. The Bureau of Labor Statistics estimates that between 2004 and 2014 there will be 1.49 million new computer/IT-related job openings. Network Security, Web Application Development, Wireless Communications, and Business Intelligence are just some of the areas of investment in technology that are driving IT jobs. In a recent Robert Half Technology Survey; Windows Server Administration (Server 2000/2003), Network Administration, (Cisco) Database Management, .NET development, Linux Administration, and Java development were listed as some of IT's Hottest Skills.

In partnership with the college's Job Placement Office, the IT department faculty help match potential employers with students and graduates. Local employers know to call Scott Community College when looking for talented, entry-level, IT staff – for both part and full time positions.

Graduates of the Information Technology degree program can expect to be employed as programmer trainees, programmer/analysts, applications programmers, LAN administrators, Help Desk coordinators, or Microcomputer Support Specialists. \$19,700 to \$58,000 annually based on type of job, company, and experience levels. A survey of recent graduates indicates starting salaries upwards to \$42,000.

Check out the Bureau of Labor Statistics at <http://www.bls.gov>

PROGRAM FACULTY

Rick Ahlgren, CCNA, CCAI (retired)	(563)336-5264 rahlgren@eicc.edu	MS, Western Illinois University	Cisco Academy Coordinator IT Instructor – part time
Lori Walljasper, CCP, CDE, CCNA, CCAI	(563)336-5217 llwalljasper@eicc.edu	MA, University of Iowa	Co-Department Coordinator IT Instructor
Jerry Wilkerson	(563)336-5212 jjwilkerson@eicc.edu	BA, Westmister College	Co-Department Coordinator IT Instructor

ESTIMATED PROGRAM COSTS

This table was created with Fall 2007 tuition figures. Current tuition may be found at: <http://www.eicc.edu/highschool/paying/Tuition/index.html>

<i>Estimated Costs</i>	<i>A.A.S. degree</i>	<i>CISCO Networking Certificates</i>	<i>Certificate in Web Design</i>
Tuition and fees	\$6528 (in-state) \$9792 (out-of-state)	\$2040 (in-state) \$3060 (out-of-state)	\$2448 (in-state) \$3672 (out-of-state)
Textbooks* and supplies(approximate)	\$1500	\$160	\$450

** Used textbooks are available at a reduction of about 25%*

FINANCIAL AID

There are several scholarships specific to this degree program including: AITP Scholarship, Business Technologies Faculty Scholarship, and the MIC/BCP Scholarship. Other technical scholarships are available (ex. ALCOA). See the Financial Aid office for more information.

PROGRAM ENTRY COMPETENCIES

1. Ability to read at the high-school level.
2. Ability to add, subtract, multiply, divide, find percentages, and do word problems.
3. Ability to read complex charts and graphs.
4. Ability to use and understand complex language.
5. Ability to type at least 20 words per minute is **VERY** helpful.

ADMISSIONS PROCESS

The student must follow the college application process (fill out the application form and have transcripts sent). He/she must take the college placement/assessment test. In order to be successful in the Information Technology (IT) curriculum, the student must score appropriately on the assessment test or must enroll in the following classes **BEFORE** starting the IT classes.

- MAT41 - Basic Math
- RDG33 - Intro to College Reading
- ENG13 - Basic Writing
- Keyboarding is **STRONGLY** Recommended

Check out the following website for Admission information:

<http://www.eicc.edu/highschool/gettingin/onlinereg.html>

PROGRAM AWARDS / EXTRA POINTS

- Associate in Applied Science Degree in Information Technology - Software Development Concentration
- Associate in Applied Science Degree in Information Technology - Networking Concentration
- Certificate in CISCO Networking CCNA
- Certificate in CISCO Networking CCNP
- Certificate in Web Design

ARTICULATION

Although an Associate in Applied Science Degree assumes graduates to seek employment after graduation, the Microcomputer Information Degree program articulates very well with St Ambrose University and Western Illinois University.

For more information, visit the following links:

St Ambrose/EICCD Cisco Articulation – in revision

St Ambrose BAMT Degree – <http://web.sau.edu/cps/acel/academicprograms.htm>

Western Illinois University BOT program - <http://www.wiu.edu/SES/BOT/>

ATTENDING PART TIME

If you have not been in school for over five years, it is recommended that you take SDV114 - Strategies for Academic Success. Also, a keyboarding class is STRONGLY recommended.

Start out with any of the following:

- NET114 Foundations of Information Technology
- CIS121 Introduction to Programming Logic
- CSC110 Introduction to Computers
- MAT110 Math for Liberal Arts
- General Education Electives (can take any time)

As you begin your coursework, you will be assigned an academic advisor who can then help you schedule classes for future semesters.

IS IT RIGHT FOR ME?

Do you pay attention to detail? Do you like to work with computers? Do you like a challenging, fast-paced, constantly changing work environment? Can you stick with a problem, no matter how perplexing, until you have it solved? Are you a team player? Are you creative? If so, maybe Information Technology is for you!

ADDITIONAL INFORMATION

Contact our instructors for a personalized tour and to discuss your academic plan.

INFORMATION TECHNOLOGY DEGREE REQUIREMENTS

FIRST SEMESTER

NET114 Foundations of Information Technology.....	3
CIS121 Introduction to Programming Logic.....	3
OR	
PHI110 Introduction to Logic.....	3
MAT110 Math for Liberal Arts	3
OR	
MAT121 College Algebra.....	3
CSC110 Introduction to Computers.....	3
General Education Elective – Eng/Comm	3
Semester Totals	15

SECOND SEMESTER

NET303 Windows Workstation Operating System	3
Programming/Networking Electives	13
Semester Totals	16

THIRD SEMESTER

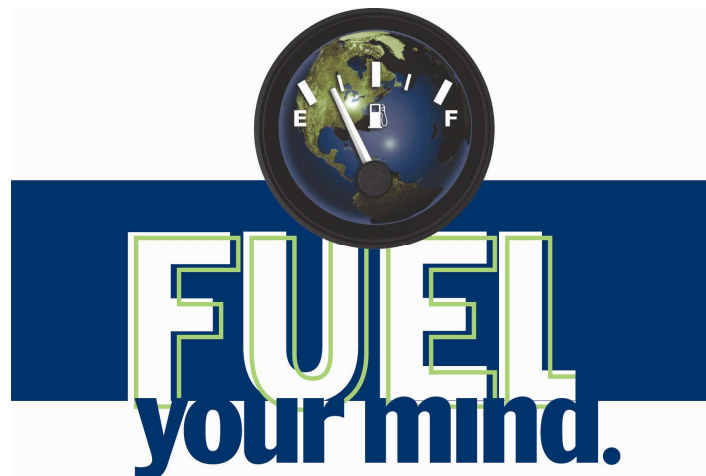
Programming/Networking Electives	13
General Education Electives – Hum/Soc Sci	3
Semester Totals	16

FOURTH SEMESTER

NET851 Innovations in Technology	3
Programming/Networking Electives	11
General Elective	3
Semester Totals	17

CURRICULUM TOTALS..... 64

***networking majors must take the four Cisco Networking courses**





Scott Community College is both a Regional and Local Academy for CCNA and a Local Academy for CCNP visit <http://cisco.netacad.net> for more information.

INFORMATION TECHNOLOGY

CISCO Networking Certificate – CCNA Requirements

NET214 CISCO Networking	5
NET224 CISCO Routers.....	5
NET234 CISCO Switches.....	5
NET244 CISCO WAN.....	5
CERTIFICATE TOTAL.....	20

INFORMATION TECHNOLOGY

CISCO Networking Certificate – CCNP Requirements

NET254 Advanced Routing.....	5
NET264 Remote Access	5
NET274 Multi-layer Switching	5
NET284 Internetwork Troubleshooting	5
CERTIFICATE TOTAL.....	20

INFORMATION TECHNOLOGY

Certificate in Web Design – Requirements

First Semester

CIS606 Visual Basic I.....	3
CSC110 Introduction to Computers.....	3
CIS161 C++ I	3
CIS210 Web Development I.....	3
	12

Second Semester

CIS211 Web Development II.....	3
CIS171 Java	3
CIS220 Fundamentals of Web Design.....	3
NET910Cooperative Work Experience or Elective	3
	12
CERTIFICATE TOTAL.....	24

COURSE DESCRIPTIONS

CIS:121 Introduction to Programming Logic

3 cr. CMS

Introduction to structured programming logic using a variety of methods to solve programming problems. Topics covered include flowcharting, pseudocode, hierarchy charts, truth tables, control breaks, arrays, logic constructs and an intro to object-oriented programming.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

CIS:161 C++ I

3 cr. CMS

This course is designed to give students a basic understanding of the C++ language. Topics covered include the Visual C++.Net environment, variables, calculations, loop structures, decision structures, pointers, arrays, functions and function templates.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisites: IT:132 and at least one semester at of a programming language

CIS:164 C++ II

3 cr. S

This course is a continuation of CIS:161 C++ I. Topics covered include the Visual C++.net environment, classes, Inheritance, Windows Programming, Foundation Classes and File and Database access.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: CIS:161.

CIS:171 Java

3 cr. MS

This course provides an introduction to object-oriented programming using the Java programming language. The course covers methods, objects, and classes with the emphasis on modularity and reusable code. Students design programs demonstrating conditionals, iteration, array handling and event processing.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: CIS:161 recommended.

CIS:210 WebDevelopment I

3 cr. CMS

Students will learn how to evaluate, design, construct and maintain web pages and web sites. Topics include HTML, XHTML, DHTML Graphics, animation and FTP.

(39.6 Lec. Hrs/39.6 Lab Hrs.)

Prerequisites:NET114 and at least one semester of a programming language.

CIS:211 WebDevelopment II

3 cr. CMS

Students will learn how to evaluate, design, construct and maintain interactive Internet Web pages and Web sites using Dynamic Hyper Text Markup Language (DHTML). Topics include: JavaScript, server-side and client-side programs, variables, arrays, control structures, form validation, object properties, methods and event handlers, multimedia via Java applets and ColdFusion.

(39.6 Lec. Hrs/39.6 Lab Hrs.)

Prerequisites:NET114 and at least one semester of a programming language.

CIS:220 Fundamentals of Web Design

3 cr. CM

This course focuses on the overall production processes surrounding web site design with particular emphasis on design elements involving layout, navigation, and interactivity.

(39.6 Lec. Hrs/39.6 Lab Hrs.)

Prerequisites: CIS210

CIS 274: Introduction to e-Commerce

3 cr. S

This course explores how the landscape of online commerce is changing and evolving. With balanced coverage of both the technological and the strategic aspects of successful e-commerce, students are able to tackle the real-world business cases included in each chapter. Reflecting changes in the economy and how businesses are responding, this course emphasizes revenue and transaction cost reduction models as an alternative to the older ideas of business models. Topics covered include Technology Infrastructure: The Internet and the World Wide Web, Selling on the Web: Revenue Models and Building a Web Presence Marketing on the Web, Business-to-Business Strategies: From Electronic Data Interchange to Electronic Commerce, and The Environment of Electronic Commerce: Legal, Ethical, and Tax Issues.

(39.6 Lec. Hrs/39.6 Lab Hrs.)

Prerequisites: None

CIS:307 Introduction to Databases**3 cr. CM**

This course provides the student with an overview in database management systems. The student will learn about database fundamentals, database modeling, Structured Query Language (SQL), database administration and current issues. Students will develop databases in hands on experiences.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: CSC110, NET303 or or equivalent experience

CIS 338 :Introduction to Oracle**3 cr. S**

This course is designed to enable students to learn the fundamental aspects of Structured Query Language(SQL) in order to create and maintain Oracle database objects, as well as store, manipulate and retrieve data from and Oracle database. Also students will learn fundamental aspects of Oracle's programming Language/Structure Query Language(PL/SQL) application code blocks that can be shared by Oracle forms, reports and data management applications.

(39.6 Hrs/39.6 Lab Hrs.)

Prerequisites:NET114, NET303 and at least one semester of a programming language.

CIS:402 COBOL I**3 cr. S**

Introductory concepts of COBOL, the Common Business Oriented Language, will be presented in this course. Using the structured approach, this course will cover the basics of logic design, basic COBOL syntax, common COBOL verbs, arithmetic operations, report editing, techniques for comparing, and programming multiple levels of control for report formats.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite/Co-requisite: NET:114, CIS:121 is strongly recommended.

CIS:504 Systems Analysis and Design**3 cr. CMS**

This course covers the makeup, analysis, design and implementation of systems projects with emphasis on learning how to analyze existing systems and recommend automated improvements. Object-oriented design techniques are discussed and good communication skills will be emphasized.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisites: At least two programming classes.

CIS:606 Visual Basic.NET I**3 cr. CMS**

This hands-on course covers essential aspects of Visual Basic.NET. Students will design applications demonstrating their understanding of controls, properties, methods, events, user variables, functions, expressions, multiple forms, menus, lists and arrays, web forms, and file handling.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Co-Prerequisite: CIS:121 is strongly recommended.

CIS:607 Visual Basic.NET II**3 cr. MS**

This course is a continuation of CIS:606, Visual Basic.NET I. Students develop Windows-based and Web-based applications that access databases. Advanced controls, error handling, reporting, class modules, multi-tier database applications, and packaging and distribution also be emphasized.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: CIS:606.

CIS:608 Visual Basic NET III**3 cr. M**

Students continue to study advanced Visual Basic topics including, integration with and development for MS Windows applications, development for mobile devices, and MS Windows and web services.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Co-requisite or or Pre-requisites: IT:CIS607

CIS:704 Unix/Linux**3 cr CMS**

This course is designed to give students a basic understanding of the UNIX operating system, commands, and system administrative duties required when administering a UNIX-based system.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:100, NET:303

CIS 949 Special Topics**v cr. C**

Courses of instruction involving material of timely, special or unusual interest not contained in the regular course offerings. Students may submit a proposal for a special project to an instructor. These courses may be offered by faculty members with the approval of their department chair and the dean of the college. These may be courses exploring areas of special interest to the proposing faculty member, department or to the students. Course may be repeatable for credit.

(v Lec. Hrs./v Lab Hrs.) **Prerequisite:** Permission of Instructor.

CFR 100: Introduction to Computer Forensics**3 cr.S**

This course is designed to provide the student with a comprehensive understanding of Computer Forensics, Investigation Tools and Techniques. Students will learn how to set up an Investigator's office and Laboratory, as well as examine what computer forensic hardware and software available. Topics covered include procedures for identification, preservation, and extraction of electronic evidence, Auditing and investigation of network and host intrusions and forensic tools.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisites: Advanced class standing and security check

NET: 105 PC Printer Maintenance and Repair**3 cr. C**

This course will prepare the student to: troubleshoot laser, inkjet and dot matrix printer failures, repair or replace the failing units, perform any required adjustments or alignments, and verify proper printer operation. Proper preventive maintenance techniques will also be covered.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: None

NET: 107 Hardware/Software Installation and Troubleshooting**3-4 cr. CMS**

This course provides students with "hands-on" experience in installing microcomputer hardware and software. Online resources and reference manuals will be utilized for troubleshooting hardware and software problems. Students will develop the necessary skills to enter this field installing the operating system, adding peripherals, connecting the computer to a local area network and to the Internet. This is a hands-on, lab-oriented course that stresses laboratory safety and working effectively in a group environment. This course will help prepare students for CompTIA's A+ Certification.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET 303.

NET114: Foundations of Information Technology**4 cr. CMS**

This course is designed as an introduction to the general uses, concepts, application and implementation of information technology within business and industry. Topics include Internet and the world Wide Web, Hardware and Software Design, Operating Systems, Communications and Networks, Programming Languages, Computer Security and e-Commerce.

(59.9 Lec/39.6 Lab Hrs.)

Prerequisite: None

NET: 155 Wireless LANs**3 cr. CMS**

This course provides a hands-on guide to planning, designing, installing and configuring wireless LANs that prepares students for the Certified Wireless Network Administrator (CWNA) certification. The course provides an in-depth coverage of wireless networks with extensive coverage of IEEE 802.11b/a/g/pre-n implementation, design, security, and troubleshooting. The lecture is reinforced with hands-on projects.

(39.6 Lec Hrs/39.6 Lab Hrs.)

Prerequisite: NET 114, NET 303 or permission of instructor.

NET:214 CISCO Networking (Networking Fundamentals)**5 cr. CM**

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. Students build simple LAN topologies by applying basic principles of cabling; performing basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. (79.2 Lec. Hrs./39.6 Lab Hrs.)

Recommended prerequisites: NET:114, NET:303 and MAT:110.

NET:224 CISCO Routers (Routing Protocols and Concepts)**5 cr. CMS**

This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Troubleshooting skills are practiced and emphasized. (79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:214.

NET:224 CISCO Switches (LAN Switching and Wireless)**5 cr. CMS**

This course provides a comprehensive, theoretical, and practical approach to learning the technologies and protocols needed to design and implement a converged switched network. Students configure a switch for basic functionality and how to implement Virtual LANs, VTP, and Inter-VLAN routing in a converged network. The different implementations of Spanning Tree Protocol in a converged network are presented, and students develop the knowledge and skills necessary to implement wireless technology in a small to medium network. (79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:214.

NET:244 CISCO WAN (Accessing the WAN)**5 cr. CMS**

This course covers how to implement and configure common data link protocols and how to apply WAN security concepts, principles of traffic, access control and addressing services. The course uses the Cisco Enterprise Composite model (ECM) to introduce integrated network services and explains how to select the appropriate devices and technologies to meet ECM requirements. Students learn how to detect, troubleshoot, and correct common enterprise network implementation issues. This course prepares the student for the ISCW certification exam. (79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET224, NET234.

NET:254 Advanced Routing (Building Scalable Internetworks)**5 cr. S**

Focusing on advanced routing, this course covers configuration of EIGRP, OSPF, IS-IS, and BGP routing protocols, and how to manipulate and optimize routing updates between these protocols. Other topics include multicast routing, IPv6, and DHCP configuration. Students will learn how to create an efficient and expandable enterprise network. Students will also learn how to install, configure, monitor, and troubleshoot network infrastructure equipment. This course prepares the student for the BSCI certification exam. (79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:244 or CCNA Certification

NET:264 Remote Access (Implementing Secure Converged WANs)**5 cr. S**

Students are introduced to secure enterprise-class network services for teleworkers and branch sites. Students will learn how to secure and expand the reach of an enterprise network with a focus on VPN configuration and securing network access. Topics include teleworker configuration and access, frame-mode MPLS, site-to-site IPSEC VPN, Cisco EZVPN, strategies used to mitigate network attacks, Cisco device hardening, and IOS firewall features.

This course prepares the student for the BCRAN certification exam.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:244 or CCNA Certification

NET:274 Multi-Layer Switching (Building Multilayer Switched Networks)**5 cr. S**

This hands-on, lab-oriented course stresses the design, implementation, operation, and troubleshooting of multilayer switched networks. Students learn how to build of the appropriate Cisco IOS services to build reliable, scalable, multilayer-switched LANs. Focus areas of the course include VLANs, Spanning Tree Protocol, wireless client access, minimizing service loss, and minimizing data theft in a campus network. This course prepares the student for the BCMSN certification exam.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:244 or CCNA Certification

NET:284 Internetwork Troubleshooting (Optimizing Converged Networks)**5 cr. S**

This course introduces students to effective QoS techniques for optimization in converged networks with voice, wireless, and security applications. Topics include implementing a VoIP network, specific mechanisms for implementing the DiffServ QoS model, AutoQoS, wireless security, and basic wireless management. This course prepares the student for the ONT certification exam.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisites: NET254, NET264, NET274

NET:303 Windows Workstation Operating System**3 cr. CMS**

This course prepares the student for using and supporting Windows Operating System Platform in a personal or business workstation setting. Topics of this course include installation, administration of resources, troubleshooting, networking, optimization and security.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: AO:163 or equivalent Windows Operating System experience.

NET: 305 Introduction to Network Operating Systems**3 cr. C**

This course is designed to give students of varying experience a practical working knowledge of baseline IT skills and technologies. We will provide an introduction to each of the major operating systems, including DOS, Windows 9x/NT/2000/XP and UNIX/Linux. Topics include: installation, administration of resources, troubleshooting, networking, optimization and security.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET 303

NET:332 Windows Servers**3 cr. CMS**

This course is designed to give students a practical understanding of Windows Servers. Students will learn to plan, install, configure, manage, and troubleshoot windows servers using hands-on labs as well as group and individual projects. Topics covered include installing and configuring the server operating systems, setting up hardware, configuring system resources, optimizing system performance, configuring server storage, configuring network connectivity, and implementing server security. This course may be taken more than once provided the server operating system being offered has changed.

NET: 487 Network+ Test Preparation**1 cr. C**

The Network+ Test Preparation course will prepare the student to take the Network+ Certification Examination. Through hands-on training, students learn the vendor-independent network skills and concepts that affect all aspects of networking, such as installing and configuring the TCP/IP client. The course also helps prepare students for two popular certification examinations: CompTIA Network+ and Microsoft Networking Essentials.

(9.9 Lec. Hrs./19.8 Lab Hrs.)

Prerequisite: NET 107, NET 114, NET 214, and NET 303.

NET: 489 A+ Test Preparation**1 cr. C**

The A+ Test Preparation course prepares the student to take the A+ Certification Examination. Topics include: computer architecture, microprocessors, memory, storage, video, modems, printers, LANs (Local Area Networks), device drivers, batch files, hard drives, MS-DOS and Windows Family Operating Systems.

(9.9 Lec. Hrs./19.8 Lab Hrs.)

Prerequisite: NET 105, NET 107, NET 114, and NET 303,

NET:635 Ethical Hacking**3 cr. S**

In this course, students learn about and perform penetration testing on networks in order to improve their vulnerabilities. Topics include: attack analysis, intrusion detection, and defense measures.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:224, NET:234

NET 679 TCP/IP**1 cr. CMS**

This course is intended to provide the necessary information to understand the TCP/IP protocol Suite as well as IP Addressing and Subnetting. This course includes a discussion on the structure and purpose of an IP Address and the purpose for Subnetting. A thorough discussion on Subnetting Class A, B, & C networks, as well as, Variable Length Subnet Mask (VLSM), and Supernetting (Classless Internet Domain Routing) of multiple Class C Addresses is provided. Finally, an introduction to Internet Protocol Version 6 is provided.

(9.9 Lec. Hrs./19.8 Lab Hrs.)

Prerequisite: None

NET 679 Basic Home Networking**1 cr. CMS**

This course covers design, installation, management and troubleshooting of the home networks. This course is designed for electricians and professionals seeking to upgrade their skills, as well as the do-it-yourselfers. We will cover the concepts of building a home network, as well as the variety of networking hardware and cabling options available today. We will also cover configuring Microsoft Windows operating systems, using firewalls and other means of network security, and testing and troubleshooting using standard tools. Clear and concise explanations of network basics, such as mission-critical TCP/IP and NetBEUI protocols, are also covered as well as how information will travel through their network and out across the Internet. Finally, we will cover household appliances and digital phone systems that can be connected to the home network, as well as game systems that allow users to play with others within the network or across the Internet.

(9.9 Lec. Hrs./19.8 Lab Hrs.)

Prerequisite: None

NET: 765 Fundamentals of Desktop Support**3 cr. C**

This course will introduce the student to the service concepts, skill sets, career paths, and operations of the help desk industry. Students will master the role of a help desk analysis, navigate the help desk environment, and learn crucial problem solving skills. Through this course students will develop the “soft skills” and the “self-management skills” needed to deliver excellent customer support at the help desk. This course provides an overview of the help desk for individuals interested in pursuing a career in technical support. The course will integrate strong real-world computer support examples, case studies, and group/team exercises to emphasize the concepts of the course.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: None

NET:851 Innovations in Technology**3 cr. CMS**

The Information Technology profession demands constant professional updates and lifelong learning. This course allows students to explore current trends in the information technology area and participate in other career-path professional development activities.

(39.6 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: Advanced Standing (this should be taken in the last semester as a comprehensive post test is administered).

NET:910 Cooperative Work Experience

1-6 cr. CMS

This course partners with community businesses to provide students with relevant on-the-job work experience. After creating a cover letter and resume, students will interview for an intern position. Once hired as an intern, the faculty member, business partner, and student become a team to track and monitor student progress and learning.

Prerequisite: 80% of coursework completed or permission of Co Op instructor.

NEW Networking for Home and Small Businesses

5 cr. CMS

This course teaches students the skills needed to obtain entry-level home network installer jobs. It also helps students develop some of the skills needed to become network technicians, computer technicians, cable installers, and help desk technicians. It provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in home and small business environments.

Instructors are encouraged to provide field trips and outside-the-classroom learning experiences. Labs include PC installation, Internet connectivity, wireless connectivity, file and print sharing, and the installation of game consoles, scanners, and cameras.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:114.

NEW Working at a Small-to-Medium Business or ISP

5 cr. CMS

This course prepares students for jobs as network technicians. It also helps students develop additional skills required for computer technicians and help desk technicians. It provides a basic overview of routing and remote access, addressing, and security. It also familiarizes students with servers that provide e-mail services, Web space, and authenticated access. Students also learn about soft skills required for help desk and customer service positions. Network monitoring and basic troubleshooting skills are taught in context.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: Networking for Home and Small Businesses

NEW Introducing Routing and Switching in the Enterprise

5 cr. CMS

This course familiarizes students with the equipment applications and protocols installed in enterprise networks, with a focus on switched networks, IP Telephony requirements, and security. It also introduces advanced routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. Hands-on exercises include configuration, installation, and troubleshooting.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: Working at a Small-to-Medium Business or ISP

NEW Designing and Supporting Computer Networks

5 cr. CMS

Learners progress through a variety of case studies and role-playing exercises, which include gathering requirements, designing basic networks, establishing proof-of-concept, and performing project management tasks. In addition, lifecycle services, including upgrades, competitive analyses, and system integration, are presented in the context of pre-sale support.

Prerequisites: Introducing Routing and Switching in the Enterprise

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: Introducing Routing and Switching in the Enterprise

NEW Certifying CAT 5e and Fiber Cabling

5 cr. CMS

This course is designed to prepare the student to take the CAT 5 and Fiber Cabling Certification tests. The course is broken down into three sections: Copper Connectivity, Fiber Optic Connectivity, and The Equipment Room.

The Copper Connectivity Section provides the student experience in voice, video, and Data cable installations. The student learns basic theory, job planning, installation requirements, industry standards, cost estimation and proper cabling documentation. The electrical and mechanical characteristics of twisted pair and coax cable are discussed. Hands-on exercises include assembly of lugs, connectors, wire wrapping, cross connections, etc. The student is shown the proper tools and procedures to achieve desired results for constructing highly reliable voice, video, and data networks. Fiber Cable Connectivity Section is designed to provide students with an understanding of Fiber Optic Communications with extensive hands-on experience. This course covers how analog voice, data and video signals are composed, multiplexed and transmitted over fiber optic systems. Industry terminology and standards are covered such as Fiber Distributed Digital Interface (FDDI), and others. The course discusses optical fundamentals, single-mode versus multi-mode, laser diodes and light detectors, plus reconstruction of signals. Design and maintenance factors discussed are loss budgets, bandwidth, costs, installation practices, splicing, and trouble shooting techniques. Experience the extensive hands-on, including fusion splicing! The Equipment Room Section, is designed to provide students with an understanding of Cables and Test equipment, interconnecting Hubs and Switches, Topology, Electricity and Grounding, Blueprint Reading, and Network design methods. Attenuation, Crosstalk, Propagation Delay, Loss and Skew are also covered. Finally, Infrastructure Wiring and Network Installation and Troubleshooting are reviewed.

(79.2 Lec. Hrs./39.6 Lab Hrs.)

Prerequisite: NET:114 and CIS 232.