COMPUTER PROGRAMMING SEMESTER HANDBOOK 2013

August 27, 2013

Welcome!

And thank you for selecting Hocking College as your educational provider. We recognize that you have choices as to where to spend your educational dollars and are pleased that you selected Hocking College. We believe that you have selected one of the best two-year colleges in America!

Hocking College is proud to offer programs that emphasize practical, relevant information that you will use throughout your career. Your classroom/lab experiences are aimed at developing the necessary skill sets that the labor market has defined. Hocking provides an opportunity to learn through doing! This is an opportunity to develop the necessary skills to be successful in your selected career.

In addition to your classroom/lab "learning" experiences, I strongly encourage you to take advantage of the many other wonderful learning opportunities Hocking offers. Make sure to experience the beautiful scenery of the Hocking Valley (a National Forest, 4 State Parks, caves, rivers, lakes, bike paths, etc.); learn the rich and diverse history of the region (the canal system, the underground railroad, Nelsonville's Victorian architecture); develop a friendship with one of our many international students; learn a new hobby (fly fishing, rappelling, spelunking). Your time at Hocking is valuable. You are making an investment in yourself -- maximize on that investment by seizing as many Hocking opportunities as possible.

Our desire is that your experience at Hocking College is both enjoyable and successful. At any time if there are ways that we may assist you in this endeavor, please let us know.

Once again, thank you and welcome to Hocking College!

Sincerely,

Jeffrey Daubenmire, Dean
School of Arts and Science, Business and Computer Information Technologies

Meet the Faculty

Gus Morris

Gus has been teaching at Hocking College since 1984. He has a Bachelors Degree from Ohio University and has worked at United McGill as a programmer analyst prior to coming to Hocking College.

Marcia Welch

Marcia has been teaching at Hocking College since 1992. She has an Associate Degree from Hocking College and a Bachelors Degree from Franklin University in Information Technology. She also worked in Management Information Systems, as a Computer Support Tech at O'Bleness Memorial Hospital, for 30 years.

Valerie Fronczak

Valerie has been teaching at Hocking College since 1998. She has a Masters Degree from Fort Hays State University and has previously worked as a programmer analyst for the State of Ohio and as a private consultant. She holds CCNA and CISSP certifications.

Mark Yanko

Mark joined our teaching staff in fall quarter of 2001. He has a Bachelors Degree from DeVry Institute of Technology and had worked at Crane Plastics in Columbus since 1994, most recently as Systems Manager. Mark holds CCNA and CCAI (Semesters 1-4) certification.

Johnny Chuah

Johnny began teaching at Hocking in fall quarter of 2001. He has a Masters Degree from Ohio State University, where he did programming and networking work for his research. He also holds Microsoft's certifications MCSE, MCSD and MCDBA.

Mark Woltz

Mark began teaching at Hocking in fall quarter of 2001. He has Associate Degrees from Hocking College in programming and in networking. Mark also has CCNA and CCAI (Semesters 1-4) certification.

How to Contact Us

Instructor	Shaw Office Phone		E-Mail	Home Web Page
Gus Morris	203C	753-6499	morrisg@hocking.edu	moodle.hocking.edu
Valerie Fronczak	203D	753-6500	fronczakv@hocking.edu	moodle.hocking.edu
Mark Woltz	203E	753-6501	woltzw@hocking.edu	moodle.hocking.edu
Marcia Welch	203A	753-6502	welchm@hocking.edu	moodle.hocking,edu
Mark Yanko	213	753-6507	yankom@hocking.edu	moodle.hocking.edu
Johnny Chuah	213	753-6506	chuahj@hocking.edu	moodle.hocking.edu

JUNE 2013-MAY 2014

Program Handbook

For the

Computer Programming Technology

at

Hocking College

Computer Programming & Network Systems
at Hocking College

The mission of the computer science program is to prepare students to enter information technology professions as entry-level programmers, operators, or network technicians. "Learning by doing" and "hands-on experience" are the primary methods of achieving this goal. Using state-of-the-art equipment in modern laboratories, students are given the opportunity to pursue a Programming degree or a Networking degree. In the middle of the first semester the student decides which course of study he/she wishes to pursue.

All students gain exposure to programming with courses in Visual BASIC, Program Analysis, and Web Page Design. They learn the fundamentals of DOS, Windows and Linux in PC Operating Systems. Students take courses in the more popular microcomputer software packages for spreadsheet, word processing, and database management (Microsoft Office). Relational database concepts and SQL are covered in Database Management. Students in both programs complete two networking courses in which they study current networking topics including network design, TCP/IP, DHCP, DNS, Ethernet, wireless networking, and IP version 6.

Students choosing the networking track take courses in the Cisco Networking Academy Program. Along with the four courses that comprise the CCNA (Cisco Certified Network Associate) program, students now complete one advanced level course (Cisco Certified Network Professional 1 – Advanced Routing) as their second year culminating experience. Other course work includes PC Hardware and Architecture, Server Management, Network Communications, and Network Security.

All course lab sections are instructor-supervised which enhances the student learning experience. These lab sections are limited to 15 or 20 students which encourages student / instructor interaction. Lab assignments are problem and project based so that they reflect real world applications. Assignments progress from the simple to the complex throughout the curriculum and culminate with a reality-based learning experience in the capstone course. The capstone experience includes a cohort opportunity with the Communication faculty.

A service learning experience is incorporated into a second year technical course. This experience involves bringing senior citizens to campus for an introduction to computers. Not only is this an educational and fun experience for the seniors, but it also provides an opportunity for our students to gain the much-needed practice of dealing with and answering questions for computer users who are not technically knowledgeable.

There are several entry opportunities available. Credit by exam or by advance standing is available for the Introduction to Word, Introduction to Excel, and Introduction to Access Microsoft Office courses. Hocking College has articulation agreements with a number of high schools that have IT related "Tech Prep" programs; students can receive college credit for certain pre-approved high school classes.

Network Systems students who complete their degree requirements will automatically receive the Networking and Web Design certificate of completion and the Cisco Network Associate certificate of completion. To receive the Microcomputer Software User Occupational certificate, they would need to complete 2 additional courses.

Our course sequence have been designed to allow students to earn a degree in both Computer Programming and Network Systems by completing the courses of the second degree during a third year at Hocking College.

Upon graduation, students possess the necessary training to enter the job market or to continue their education at a four-year institution. Through our University Center we have established partnerships with some of the best four-year colleges and universities in the state. Earning a Hocking College associate degree is the first step toward obtaining a bachelors degree. An associate degree in Applied Business enables the student to transfer into a four-year college as a junior. Current formal articulation agreements include programs at Franklin, University of Rio Grande, and Ohio University.

High school students wishing to enter the computer programming or network systems program are urged to develop their problem solving capabilities and their basic arithmetic skills (addition, subtraction, multiplication, and division). They must be able to follow both written and verbal directions. Most importantly, they must be willing to work hard and apply themselves since these are rigorous programs. Patience, persistence, logical thinking, and attention to detail are the keys to success. Although much is expected of a computer student at Hocking College, the end result of employment in business data processing or as networking technicians provides financial security opportunities throughout life.

Computer Programming & Network Systems

The Job Market

According to the Ohio Department of Job and Family Service's Ohio Job Outlook to 2014, "Health and computer-related occupations dominate the list of fastest growing jobs." The report states that "More than three-fourths of the job openings are expected to result from the need to replace workers who leave the labor force, or transfer to another occupation."

Five of the top ten fastest growing jobs in Ohio are computer-related: Network Systems and Data Communication Analysts, Computer Applications Software Engineers, Computer Systems Software Engineers, Database Administrators, and Network and Computer Systems Administrators.

The report also states that "The Ohio economy will provide jobs for workers at all educational levels, but those individuals with more education and training will enjoy better job opportunities."

The Department of Labor's Bureau of Labor Statistics produces an Occupational Outlook Handbook every two years. "The *Occupational Outlook Handbook* is a nationally recognized source of career information, designed to provide valuable assistance to individuals making decisions about their future work lives. Revised every two years, the *Handbook* describes what workers do on the job, working conditions, the training and education needed, earnings, and expected job prospects in a wide range of occupations."

These statistics cover the 2004-2014 time periods:

"Among all occupations in the economy, computer and healthcare occupations are expected to grow the fastest over the projection period. In fact, healthcare occupations make up 12 of the 20 fastest growing occupations, while computer occupations account for 5 out of the 20 fastest growing occupations in the economy. In addition to high growth rates, these 17 computer and healthcare occupations combined will add more than 1.8 million new jobs. High growth rates among computer and healthcare occupations reflect projected rapid growth in the computer and data processing and health services industries."

"Employment in computer systems design and related services will grow by 39.5 percent and add almost one-fourth of all new jobs in professional, scientific, and technical services. Employment growth will be driven by the increasing reliance of businesses on information technology and the continuing importance of maintaining system and network security."

"Employment in the information super sector is expected to increase by 11.6 percent, adding 364,000 jobs by 2014. Information contains some of the fast-growing computer-related industries such as software publishers; Internet publishing and broadcasting; and Internet service providers, Web search portals, and data processing services. Employment in these industries is expected to grow by 67.6 percent, 43.5 percent, and 27.8 percent, respectively. The information super sector also includes telecommunications, broadcasting, and newspaper, periodical, book, and directory publishers. Increased demand for residential and business land-line and wireless services, cable service, high-speed Internet connections, and software will fuel job growth among these industries

Computer Programming & Network Systems

Job Titles and Positions

Computer support specialists and systems administrators are projected to be among the fastest growing occupations over the 2004-14 periods. *Computer support specialists* provide technical assistance, support, and advice to customers and other users. This occupational group includes *technical support specialists* and *help-desk technicians.* These troubleshooters interpret problems and provide technical support for hardware, software, and systems. Median annual earnings of computer support specialists were $40,430 in 2004.

Computer systems analysts, database administrators, and computer scientists are expected to be among the fastest growing occupations through 2014. *Network systems and data communications analysts* are needed to design, test, and evaluate systems such as local area networks (LANs), wide area networks (WANs), the Internet, intranets, and other data communications systems. Median annual earnings of network systems and data communication analysts were $58,420 in 2002. *Systems administrators* are the information technology employees responsible for the efficient use of networks by organizations. They ensure that the design of an organization's computer site allows all of the components, including computers, the network, and software, to fit together and work properly. Furthermore, they monitor and adjust performance of existing networks and continually survey the current computer site to determine future network needs. *Network* or *computer systems administrators* design, installs, and support an organization's LAN (local-area network), WAN (wide-area network), network segment, Internet, or intranet system. Median annual earnings of network and computer systems administrators were $54,810 in 2002.

Computer programmers write, test, and maintain the detailed instructions, called programs that computers must follow to perform their functions. They also conceive, design, and test logical structures for solving problems by computer. Employment of programmers is expected to grow about as fast as the average for all occupations through 2012. Median annual earnings of computer programmers were $60,290 in 2002. *Systems analysts* solve computer problems and apply computer technology to meet the individual needs of an organization. In some organizations, *programmer-analysts* design and update the software that runs a computer. Because they are responsible for both programming and systems analysis, these workers must be proficient in both areas. Median annual earnings of computer systems analysts were $62,890 in 2002.

Database administrators work with database management systems software and determine ways to organize and store data. They identify user requirements, set up computer databases, and test and coordinate modifications to the systems. Median annual earnings of database administrators were $55,480 in 2002.

The growth of the Internet and the expansion of the World Wide Web (the graphical portion of the Internet) have generated a variety of occupations related to the design, development, and maintenance of Web sites and their servers. For example, *webmasters* are responsible for all technical aspects of a Web site, including performance issues such as speed of access, and for approving the content of the site. *Internet developers* or *Web developers*, also called *Web designers*, are responsible for day-to-day site design and creation. In some organizations, *computer security specialists* may plan, coordinate, and implement the organization's information security.

Computer Programming & Network Systems

Entry Level Positions and Employers

Entry-level positions in Information Technology include job titles such as computer operator, network operator, programmer and network technician. They have salaries typically in the $25,000 to $35,000 range. Salaries are highly dependent on the region of the country and the local economy. Salaries in metropolitan areas are generally higher. Salaries are also determined by previous experience and education.

Computer/Network Operator

Operate and monitor mainframe computer and/or microcomputer hardware systems and peripheral equipment. Systems include applications with multiple central processing units and peripheral equipment in a networked communications environment.

Representative Employers: Ohio Department of Administrative Services, CompuServe, COTT Systems, Inc., Micro Industries, insurance companies (Nationwide Insurance, etc.)
Sample Job Titles: Operations Manager, Computer Operator, System Manager, Network Technician, Network Manager, Network Administrator

Computer Programmer

Work independently with a minimum of supervision or assistance. Demonstrate problem-solving skills. Design input and output layouts to meet user requirements. Prepare hierarchy charts, system flowcharts, and program flowcharts. Follow syntax rules in coding a program. Work with multiple file types, tables, arrays and subprograms.

Representative Employers: Franklin International, Gates McDonald, United McGill Corporation, insurance companies (Midland Mutual, Motorists, Nationwide, Grange), banks (Huntington, etc.)
Sample Job Titles: Programmer, Programmer Analyst, Programmer Supervisor

Future Trends

The expanding integration of Internet technologies into businesses, for example, has resulted in a growing need for specialists who can develop and support Internet and intranet applications. The growth of electronic commerce means that more establishments use the Internet to conduct their business online. The introduction of the wireless Internet, known as Wi-Fi, creates new systems to be analyzed and new data to be administered. The spread of such new technologies translates into a need for information technology professionals who can help organizations use technology to communicate with employees, clients, and consumers. Explosive growth in these areas also is expected to fuel demand for specialists who are knowledgeable about network, data, and communications security. As technology becomes more sophisticated and complex, employers demand a higher level of skill and expertise from their employees.

Despite the recent economic downturn among information technology firms, workers in the occupation should still enjoy favorable job prospects. The demand for networking to facilitate the sharing of information, the expansion of client–server environments, and the need for computer specialists to use their knowledge and skills in a problem-solving capacity will be major factors in the rising demand for computer systems analysts, database administrators, and computer scientists.

Hocking College
Computer Programming
and
Network Systems
Out-Of-Pocket Expenses

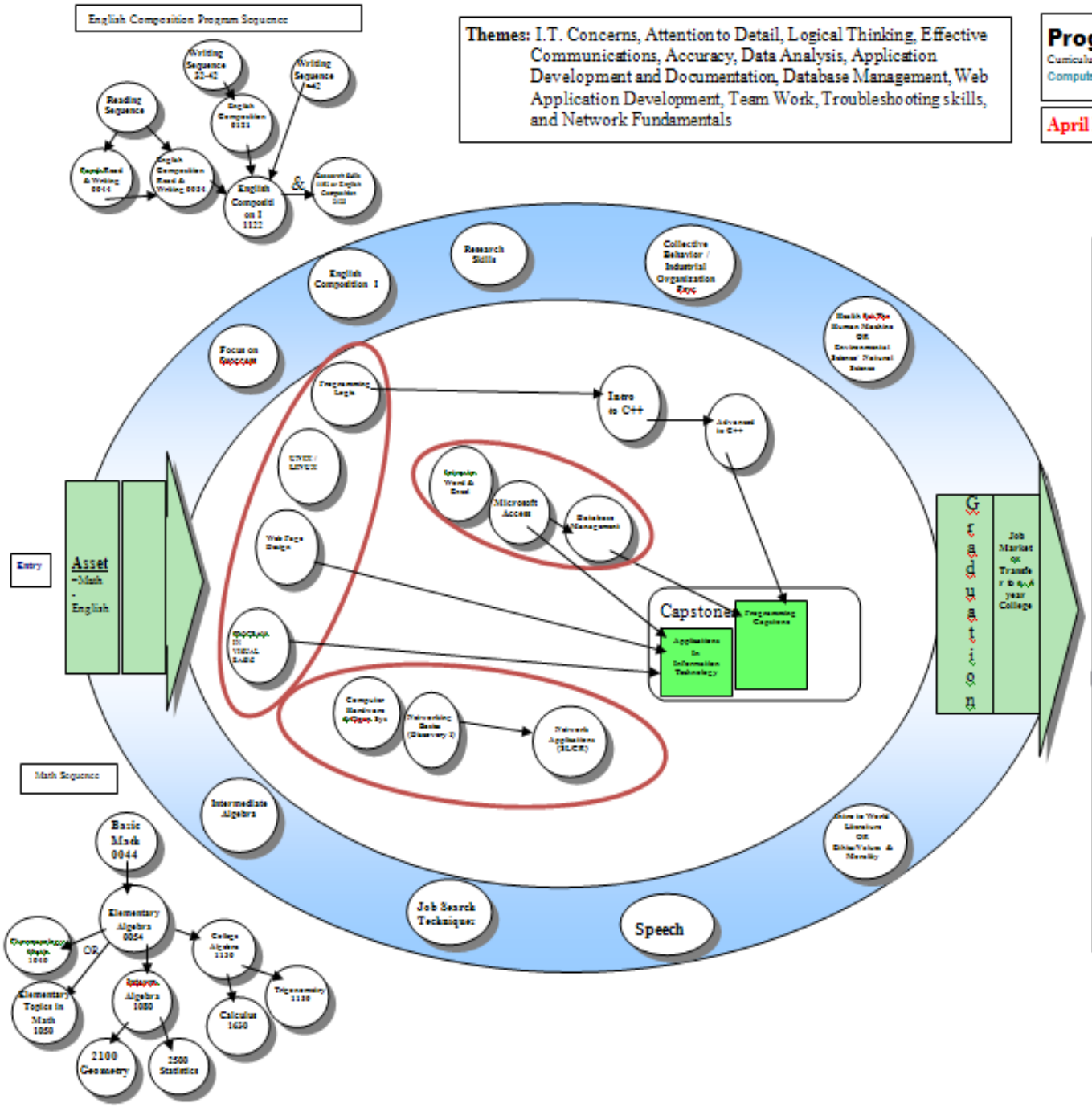
Qty	Item	Total Price
1	Standard Calculator	$16.00
1	Flowcharting Template	$5.25
6	3 Ring Binders	$15.75
2	Jump Drives	$20.00
	Notebooks, paper, pens, pencils, markers, highlighters (as needed)	$21.00
		$78.00

COMPUTER PROGRAMMING

CURRICULUM

This curriculum applies to the students entering
June, 2013 through May, 2014

COMPUTER PROGRAMMING TECHNOLOGY - (SEMESTERS)								
PROGRAMMING MAJOR COURSE OF STUDY								
FOR STUDENTS ENTERING JUNE, 2012 THRU MAY, 2013								
COURSE NO.			**FIRST SEMESTER**		CLASS	LAB	CREDITS	FEE
CS 1101			Programming Logic	T	1.00	6.00	3.00	$70
MICS 1141			Intro to Word & Excel	G	0.00	3.00	1.00	$70
NET 1100			Web Page Design	T	1.00	6.00	3.00	$70
NET 1120			Computer Hardware & OP System	G	1.00	6.00	3.00	$135
ENGL 1122		P	ENGLISH COMPOSITION I	G	3.00	0.00	3.00	$15
GS 1000			HC Cornerstone	G	1.00	0.00	1.00	$10
			TOTALS		7.00	21.00	14.00	
			SECOND SEMESTER					
CS 1110			Programming in Visual Basic	T	1.00	6.00	3.00	$70
CS 1140			UNIX/Linux	T	2.00	3.00	3.00	$75
MICS 1142			Microsoft Access	G	2.00	3.00	3.00	$70
NET 1110			Networking Basics Discovery 1	G	1.00	3.00	2.00	$110
ENGL 1152			RESEARCH SKILLS	G	1.00	0.00	1.00	
COMM 1130			SPEECH	G	3.00	0.00	3.00	$10
			TOTALS		10.00	15.00	15.00	
			SUMMER QUARTER					
CS ****			COMPUTER SCIENCE ELECTIVE (OPTIONAL)	T	0.00	0.00	.25-3.00	
CS 2294			COMPUTER SCIENCE COOP (OPTIONAL)	T	1.00	20.00	3-5.00	
CS 2296			COMPUTER SCIENCE PRACTICUM (OPTIONAL)	T	1.00	8.00	2.00	
			TOTALS		2.00	28.00	.25-10.00	
			THIRD SEMESTER					
CS 2210			Intro to C++	T	1.00	6.00	3.00	$70
CS 2250			Server-Side Scripting	T	1.00	6.00	3.00	$70
NET 2201			Network Applications (SL/CR)	T	2.00	3.00	3.00	$110
MICS 1126			Microsoft Office - Presentation	G	1.00	0.00	1.00	$20
MATH 1108			INTERMEDIATE ALGEBRA	G	3.00	0.00	3.00	$10
***			SOCI/PSYC ELECTIVE	G	0.00	0.00	3.00	
			TOTALS		8.00	15.00	16.00	
			FOURTH SEMESTER					
CS 2211			Advanced C++	T	1.00	6.00	3.00	$70
CS 2214			IT Project Management (Capstone)	T	1.00	3.00	2.00	$70
CS 2240			Database Mgt & Applications	T	2.00	6.00	4.00	$110
ENGL 1104		P	JOB SEARCH TECHNIQUES	G	1.00	0.00	1.00	$10
NSC - - -			NATURAL SCIENCE ELECTIVE	G	3.00	0.00	3.00	
HUM 2200	**OR**		INTRO TO WORLD LITERATURE **OR**	G	0.00	0.00	3.00	$20
HUM 2203			ETHICS, VALUES, & MORALITY	G				$5
			TOTALS		8.00	15.00	16.00	
CREDIT HRS:			TECH 30.00-40.00		GEN 30.50		TOTAL 60.50-70.	


English Composition Program Sequence
Writing Sequence 32-42
Writing Sequence 1442
Reading Sequence
English Composition 0121
English Composition Read & Writing 0044
English Composition Read & Writing 0054
English Composition I 1122
&
Research Skills (4th or English Composition 1122
Themes: I.T. Concerns, Attention to Detail, Logical Thinking, Effective Communications, Accuracy, Data Analysis, Application Development and Documentation, Database Management, Web Application Development, Team Work, Troubleshooting skills, and Network Fundamentals
Program Level Map
Curriculum Snapshot on
Computer Programming Technologies
April 10, 2012Semester 2012
INTENDED LEARNING OUTCOMES
Computer Programming Outcomes
1. Analyzes a problem and develops a logical plan for a solution.
2. Develops, tests, debugs and implements a software application to perform a specific task.
3. Maintains and supports software and hardware
4. Writes appropriate documentation for software usage and maintenance.
5. Performs routine tasks on multiple operating platforms.
6. Exhibits professional work ethic and professional conduct.
7. Communicates professionally and effectively in both technical and non-technical environments.
8. Collaborates effectively as a member of a team.
General Education Outcomes (Success Skills)
1. Communicates Effectively
2. Demonstrates Math Skills
3. Demonstrates Learning and Critical Thinking Skills
4. Maintains Professional Skills and Attitudes
5. Practices Human Relations Skills
6. Demonstrates Knowledge of Science and the Environment
7. Demonstrates Community, Cultural, & Global Awareness
8. Maintains a Code of Ethics
Entry
Asset
-Math
-English
English Composition I
Research Skills
Collective Behavior / Industrial Organization Psyc
Focus on Success
Programming Logic
Intro to C++
Advanced in C++
UNIX / LINUX
Microsoft Access
Database Management
Web Page Design
Capstone
Programming Capstone
Applications in Information Technology
Computer Hardware
Networking Basics (Discovery 2)
Network Applications (SLCR)
Graduation
Job Market or Transfer to 4 year College
Math Sequence
Basic Math 0044
Elementary Algebra 0054
College Algebra 1130
Trigonometry 1150
Calculus 1650
Intermediate Algebra 1050
2100 Geometry
2500 Statistics
Elementary Topics in Math 1050
OR
Job Search Techniques
Speech
Values in World Literature OR Ethics/Values & Morality

COMPUTER PROGRAMMING TECHNOLOGY - (SEMESTERS)

PROGRAMMING MAJOR - 3 YEAR COURSE OF STUDY

FOR STUDENTS ENTERING JUNE, 2012 THRU MAY, 2013

COURSE NO.					CLASS	LAB	CREDITS	FEE
			FIRST SEMESTER					
CS	1101		Programming Logic	T	1.00	6.00	3.00	$70
MICS	1141		Intro to Word & Excel	G	0.00	3.00	1.00	$70
NET	1100		Web Page Design	T	1.00	6.00	3.00	$70
NET	1120		Computer Hardware & Operating Systems	G	1.00	6.00	3.00	$135
ENGL	1122	P	ENGLISH COMPOSITION I	G	3.00	0.00	3.00	$15
GS	1000		HC Cornerstone	G	1.00	0.00	1.00	$10
			TOTALS		7.00	21.00	14.00	
			SECOND SEMESTER					
CS	1110		Programming in Visual Basic	T	1.00	6.00	3.00	$70
CS	1140		UNIX/Linux	T	2.00	3.00	3.00	$75
MICS	1142		Microsoft Access	G	2.00	3.00	3.00	$70
NET	1110		Networking Basics Discovery 1	G	1.00	3.00	2.00	$110
ENGL	1152		RESEARCH SKILLS	G	1.00	0.00	1.00	
			TOTALS		7.00	15.00	12.00	
			SUMMER QUARTER					
CS	****		COMPUTER SCIENCE ELECTIVE (OPTIONAL)	T	0.00	0.00	.25-3.00	
CS	2294		COMPUTER SCIENCE COOP (OPTIONAL)	T	1.00	20.00	3-5.00	
CS	2296		COMPUTER SCIENCE PRACTICUM (OPTIONAL)	T	1.00	8.00	2.00	
			TOTALS		2.00	28.00	.25-10.00	
			THIRD SEMESTER					
CS	2210		Intro to C++	T	1.00	6.00	3.00	$70
CS	2250		Server-Sode Scripting	T	1.00	6.00	3.00	$70
NET	2201		Network Applications (SL/CR)	T	2.00	3.00	3.00	$110
ENGL	1104	P	JOB SEARCH TECHNIQUES	G	1.00	0.00	1.00	$10
MATH	1108		INTERMEDIATE ALGEBRA	G	3.00	0.00	3.00	$10
			TOTALS		8.00	15.00	13.00	
			FOURTH SEMESTER					
CS	2211		Advanced C++	T	1.00	6.00	3.00	$70
CS	2214		IT Project Management (Capstone)	T	1.00	3.00	2.00	$70
CS	2240		Database Mgt & Applications	T	2.00	6.00	4.00	$110
NET	1115		Networking Basics Discovery 2	T	1.00	3.00	2.00	
			TOTALS		5.00	18.00	11.00	
			FIFTH SEMESTER					
NET	2210		Cisco Exploration 2	T	2.00	3.00	3.00	$110
NET	2220		Server Management	T	1.00	5.00	3.00	$120
COMM	1130		SPEECH	G	3.00	0.00	3.00	$10
MICS	1126		Microsoft Office - Presentation	G	1.00	0.00	1.00	$20
***			SOCI/PSYC ELECTIVE	G	3.00	0.00	3.00	
			TOTALS		10.00	8.00	13.00	
			SIXTH SEMESTER					
NET	2211		Cisco Exploration 3 & 4 (Capstone)	T	2.00	6.00	4.00	$110
NET	2215		Network Systems Security	T	2.00	3.00	3.00	$85
***			NATURAL SCIENCE ELECTIVE	G	3.00	0.00	3.00	
HUM	2200	**OR**	INTRO TO WORLD LITERATURE **OR**	G	3.00	0.00	3.00	$20
HUM	2203		ETHICS, VALUES, & MORALITY	G				$5
			TOTALS		10.00	9.00	13.00	
CREDIT HRS:			TECH 45.00-55.00		GEN 30.50		TOTAL 75.50-85.	

OCCUPATIONAL CERTIFICATES &
CERTIFICATES OF COMPLETION
For JUNE 2012 – MAY 2013 (Semesters)

Requirements for the Technologist Certificate, Technical Certificate, Occupational Certificate and Certificate of Completion:

1. Complete, with a passing grade, the course requirements specified for the Technologist Certificate, Technical Certificate, Occupational Certificate, or Certificate of Completion. Transfer and special credit options may be used.

2. Attain a 2.0 GPA in technical courses and a 2.0 GPA for all courses required for the certificate

** **P** indicates course available on PACE format.

** The College reserves the right to modify certificate requirements and to change course content at any time.

** Technologist Certificates also require completion of the Associates Degree first.

MICROCOMPUTER SOFTWARE USER – OCCUPATIONAL CERTIFICATE

COURSE NO.	COURSE NAME	CREDITS	SEM OFFERED
CS 1110	Programming in Visual Basic	3.00	Sp
MICS 1126	Microsoft Office-Presentation	1.00	All
MICS 1141	Introduction to Word & Excel	1.00	F/Sp
MICS 1142	Microsoft Access	3.00	F/Sp
NET 1100	Web Page Design	3.00	F/Sp
NET 1120	Computer Hardware & Op Sys	3.00	F/Sp

	CERTIFICATE TOTAL	14.00	

NETWORKING & WEB DESIGN – CERTIFICATE OF COMPLETION

COURSE NO	COURSE NAME	CREDIT(S)	SEM OFFERED
MICS 1141	Introduction to Word & Excel	1.00	F/Sp
NET 1100	Web Page Design	3.00	F/Sp
NET 1110	Networking Basics Discovery I	2.00	F/Sp
NET 2201	Networking Applications	3.00	F

	CERTIFICATE TOTAL	9.00	

CISCO NETWORK ASSOCIATE – CERTIFICATE OF COMPLETION

COURSE NO	COURSE NAME	CREDIT(S)	SEM OFFERED
NET 1110	Networking Basics Discovery I	2.00	F/Sp
NET 1115	Networking Basics Discovery II	2.00	Sp
NET 2210	Cisco Exploration 2	3.00	F
NET 2211	Cisco Exploration 3 & 4	4.00	Sp

	CERTIFICATE TOTAL	11.00	

Program of Studies:

COMPUTER PROGRAMMING

Computer Programming

Year 1

First Semester	Credit Hours
Programming Logic	3
Web Page Design	3
Computer Hardware & OP Systems	3
Introduction to Word & Excel	1
English Composition I	3
Focus on Success	1
Total	14

Programming Logic (CS 1101)
This course introduces program logic using the flowchart as the primary tool to diagram problem solutions. Basic computer terminology and the hierarchy of evaluation for arithmetic assignment statements are discussed. Problems containing decision making, counters, accumulators, control breaks, and arrays are flowcharted and evaluated. Structured design concepts are also covered.

Web Page Design (NET 1100)
In this course students develop and enhance web pages and websites. It includes the format, function, and syntax of the Hypertext Mark-up Language (HTML). The website development process is addressed. Students create and edit web pages with links, tables, frames and image maps. The use of forms, cascading style sheets, JavaScript, DHTML, and XML are covered.

Computer Hardware & Operating Systems (NET 1120)
This course examines the basic commands and features of personal computer (PC) operating systems. Students learn to install, setup, configure and troubleshoot DOS, Windows and Linux operating systems. Students also examine the architecture of mainframe and PCs, including hardware components of a PC and how they interact. Installing, configuring, and troubleshooting PC hardware and software are covered.

Intro to Word & Excel (MICS 1141)
This course introduces the word processing and spreadsheet components of Microsoft Office using Word and Excel. Word includes creating and editing documents, spell checking, formatting pages, merging documents, using graphics and tables, and working with columns. Excel includes creating and modifying spreadsheets and charts, as well as using functions and tables. In Word and Excel students design and manipulate files to apply the major functions.

English Composition I (ENGL 1122)
This course is designed to help you develop a assignments. You will write a total of 20 pages of formal, graded work.The course will focus on employing rhetorical strategies to craft essagys that: 1) support and defend your own ideas in writing; 2)study various methods of development and writing genres for different communications purposes; 3)organize and unify essay components (sentences and paragraphs).Writing as a process will be stressed with emphasis on prewriting and revision. You will be involved in in-class workshops (sharing your papaers with fellow students and the instructor), and will confer individually with the instructor. To emphasize the importance of the process of writing, you will build a portfolio of work throught the semester. At the end of the course, this portfolio will be reviewed by you and your instructor to assess your growth as a writer.

HC Cornerstone (GS 1000)
HC Cornerstone is a Hocking College orientation, information and personal success course designed to empower students with the knowledge, skills and attitudes possessed by successful students and future employees. Special emphasis is placed upon group and hands on learning in the areas of personal and professional success, college success, technology success and learning success. In addition, Hocking College Success Skills will be integrated into this course to enhance the learner's skills for school, the workplace and life. The emphasis of the course encourages the building of professional development habits that will prepare the student for a good job upon graduation.

Program of Studies:

Computer Programming

Year 1

Second Semester	Credit Hours
Unix/Linux	3
Programming in Visual Basic	3
Microsoft Access	3
Network Basics Discovery I	2
Research Skills	1
Speech	3
Total	15

UNIX/Linux (CS 1140)
This course introduces the fundamentals of the UNIX and Linux operating systems. It includes basics of the UNIX and Linux systems in conjunction with programming concepts, by covering utilities, master files, manage and query data, and create shell scripts.

Programming in Visual Basic (CS 1110)
In this course the object oriented programming language, Visual Basic, is used to write Windows based programs. Visual Basic has a user interface called integrated development environment (IDE) which includes all the tools necessary to create and test a program. Concepts include writing organized statements and testing the program while remaining inside the same IDE. It also includes building multitier programs with classes, arrays, windows database applications working with database files, using Web Forms ASP.Net applications files, Web forms with databases, and Crystal Reports.

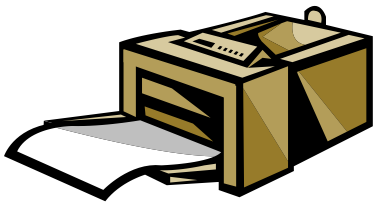
Microsoft Access (MICS 1142)
In this course, the student learns and works with database concepts, terminology and design of databases; normalize and relate tables, and implement referential integrity; create database queries and advanced multiple table queries; create forms and sub-forms, and complex reports; add charts, graphics and calculations to forms and reports; and create macros to automate tasks. Some prior experience using Microsoft Windows is required; the course will fully prepare for the Microsoft Office Specialist Certification for Microsoft Access 2007.

COMPUTER PROGRAMMING

Networking Basics Discovery 1 (NET 1110)
This course is a hands-on introduction to networking concepts and technologies for home and small businesses. Tools and hardware are used to develop the skills necessary to plan and implement small networks across a range of applications.

Research Skills (ENGL 1152)
Research Skills is a course designed to provide more intensive practice in the writing of essay. The course will focus on: 1) supporting and defending your own ideas in writing; 2) analyzing and debating the arguments of others; 3) selecting source material to use in your own argumentative essay. 4) The presentation of academic articles. The course consists of two essays: one is the article critique which involves writing an essay in response to an editorial or persuasive piece published in a newspaper or magazine; the second is the agrumentative essay on a topic of your choice which incorporates material from outside sources. You will also be asked to participate in the reading and response of academic articles.

Speech (Comm 1130)
Emphasizes communication process and extemporaneous speaking skills through informative, demonstrative and persuasive speeches. The student learns to analyze audiences, choose and narrow topics, develop content through library and other resources, use presentation aids, clearly organize speech material and effectively deliver finished speeches to a class audience.



Program of Studies:

Computer Programming

Year 2

Third Semester	**Credit Hours**
Introduction to C++	3
Server-Side Scripting	3
Network Applications (SL/CR)	3
Microsoft Office –Presentation	1
Intermediate Algebra	3
Social Science/Psychology Elective	3
Total	16

Network Applications (SL/CR) (NET 2201)

This course covers advanced topics in protocols, TCP/IP protocol suite, network utilities, wireless communication and networking media. A service learning component is also included.

Introduction to C++ (CS 2210)

This course introduces the basic elements of the C++ programming language. It includes input/output operations, arithmetic operators, control structures, user-defined functions, data types, strings, and arrays.

Server Side Scripting (CS 2250)

In this course server side scripts are used to generate dynamic, database-driven websites. It includes the use of PHP and ASP.net to connect to databases and generate HTML code. Side by side case studies of PHP (Hypertext Pre-Processor)and ASP (Active Server Pages) are conducted. Both structured and object-oriented methods of design are covered. Emphasis is also placed on validation of user input and code security when working with databases. The basics of ssetting-up an Apache server with PHP, ASP and MySQL are also covered.

COMPUTER PROGRAMMING

Intermediate Algebra (Math 1108)

Systems of equations, arithmetic of polynomials, rational expressions, factoring, fractional equations, inequalities, exponenets, quadratic equations, absolute values, functions and graphs. Application problems are emphasized.

Microsoft Office – Presentation (MICS 1126)

This course introduces the presentation component of the integrated software package, Microsoft Office. Students design and manipulate multiple files to apply the major functions of the PowerPoint module of this package.

Social Science/Psychology Elective

Students choose a 3 credit course not already taken and having the following prefix:
SOCI or PSYC

Program of Studies:

Computer Programming

Year 2

Fourth Semester	**Credit Hours**
Advanced C++	3
IT Project Management (Capstone)	42
Database Management & App.	
Job Search Techniques	1
Natural Science Elective	3
Intro to World Literature	3
OR	
Intro to Ethics	
Total	17

Advanced C++ (CS 2211)

This course covers the advanced elements of the C++ programming language. It includes vector types, structs, classes and data abstraction, inheritance and composition, pointers, classes, virtual functions, abstract classes, overload and templates, and exception handling.

IT Project Management (CS 2214)

This is the first capstone course for the computer programming technology. Working individually or in groups, students design, produce and document one or more systems that involve current topics or can fulfill institutional requests in the area of information technology.

Natural Science Elective

Students choose a 3 credit course from the Natural Science Elective course

COMPUTER PROGRAMMING

Database Mgt. & Applications (CS 2240)

This course introduces the structure, function and use of database processing and management. Students create and access typical business databases using current database management software, such as Microsoft Access, Microsoft SQL Server, MySQL and/or Oracle**.** Applications are developed using the Oracle database and current SQL, PL/SQL and web development tools.

Job Search Techniques (ENGL 1104)

Job Search Techniques is a one-credit course designed to prepare you to take charge of your own career planning. Through self-analysis of your talents, preferences, and skills, you will begin to develop a career plan. Further, you will practice the various marketing techniques (job market research, resume and letter writing, and interviewing) necessary to obtain the right job for you.

Intro to World Literature (HUM 2200)

Examines various literary works representing historical periods from the ancient world through the twentieth century. Presents a progression of literary styles and forms representing the universality of human concerns through the ages

OR

Introduction to Ethics (HUM 2203)

Rationales by which individuals and societies determine what constitutes ethical and moral behavior. Includes an overview of moral philosophy and theories of justice and human rights.

Additional course needed to also complete Network Systems, and Technologist, Networking & Web Design, and CISCO Network Associate Certifications

Cisco Exploration 2 (NET 2210)
Components and operation of routers and routing protocols are examined in this course. Students analyze, configure, verify, and troubleshoot RIP, EIGRP and OSPF. Recognition and correction of common routing issues and problems are included.

Cisco Exploration 3 & 4 (Capstone) (NET 2211)
This course encompasses the last two components of the CCNA preparation courses. LAN Switching and Wireless focuses on configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), Inter-VLAN Routing, VLAN Trunking Protocol (VTP) and wireless networking. Accessing the WAN focuses on the following topics: WAN technology and terminology, PPP, Frame Relay, network security, securing Cisco devices, Access Control Lists (ACLs), NAT, DHCP, IPv6, and network troubleshooting.

Server Management (NET 2220)
In this course, the student learns post-installation and day-to-day administration tasks in a Windows based network. Exercises include installing and configuring a network server operating system, web, ftp and database servers, creating a domain tree and implementing group and security policies, managing users and computers into organizational units, integrating internal networks with the Internet, as well as exploring and evaluating current networking technologies.

Network Systems Security (NET 2215)
In this course, the student learns security concepts and issues including laws and ethics, security policies, risk analysis, vulnerabilities, intrusion methodologies, security auditing and assessment, intrusion detection, incident response procedures, cryptography, and firewalls. Students gain hands-on experience from exercises on both the Linux and Microsoft Windows platforms.

Success
Skills

The Hocking College Success Skills are general, core outcomes needed on the job, at home, and in the community. They are work and life skills, behaviors, and attitudes that all students need to develop. Each Hocking program and discipline integrates the success skills into the curriculum and courses.

Success Skills address the areas that employers say are necessary for you to be successful in your career. Employers rank these skills as most important in obtaining and keeping a job as well as advancing or seeking promotions.

Hocking College is committed to helping you develop the Success Skills in classes, labs, and field experiences as well as in co-curricular activities.

The Success Skills are listed below, and the pages that follow in this handbook indicate where the success skills are integrated into the technical courses of the Computer Programming Technology curriculum.

- Communicates Effectively
- Demonstrates Math Skills
- Demonstrates Learning and Critical Thinking
- Maintains Professional Skills and Attitudes
- Practices Human Relation Skills
- Knowledge of Science and the Environment
- Community, Cultural, and Global Awareness
- Maintains a Code of Ethics

CURRICULUM MATRIX: SUCCESS SKILLS

Program: ComputerProgramming (SEMESTER 2012)

		1. Communicates effectively	*2. Demonstrates math skills.*	*3. Demonstrates learning and critical thinking skills.*	*4. Maintains professional skills and attitudes.*	*5. Practices human relations skills*	*6. Demonstrates knowledge of science and the environment*	*7. Demonstrates community, cultural, & global awareness.*	*8. Maintains a code of ethics.*
	SEMESTER 1 (Autumn 1)								
CS-1101	PROGRAMMING LOGIC	A	A	AP	A	A	X		X
NET-1100	WEB PAGE DESIGN	AP	X	A	AP	X	X	X	X
NET-1120	COMPUTER HARDWARE & OPERATING SYSTEMS	X		A	X	AP	X	X	X
MICS-1141	INTRO TO WORD & EXCEL	X	A	X	A	X	X		X
	SEMESTER 2 (SPRING 1)								
CS-1140	UNIX/LINUX	X	X	A	A	X	X		X
CS-1110	PROGRAMMING IN VISUAL BASIC	AP	AP	A	A	AP	X		X
MICS-1142	MICROSOFT ACCESS	X	X	A	A	X	X		X
NET-1110	NETWORKING BASICS DISCOVERY I	X	A	X	A	A		X	X
	SEMESTER 3 (Autumn 2)								
NET-2201	NETWORK APPLICATIONS(SL/CR)	*RX	*APR	*RX	*AR	*RX	*ARIP	*AIPR	*RX
CS-2210	INTRO TO C++	X	X	A	A	X	X		X
CS-2250	Server-Side Scripting	X	X	X	X	X	X	X	X
	SEMESTER 4 (Autumn2)	`							
CS-2211	ADVANCED C++	X	X	A	A	X	X		X
CS-2214	IT PROJECT MANAGEMENT(CAPSTONE)	AIPRT	RX	AIPRT	AIPRT	AIPRT	RX	RX	AIPRT
CS-2240	DATABASE MGT & APPLICATIONS	X	AP	AP	A	X	X	X	X

PROGRAM OUTCOMES

Program outcomes are those technical abilities and skills that every graduate of the computer programming technology should possess. They have been compiled by the computer faculty in consultation with I.T. professionals from business and industry. Each graduate should be able to demonstrate proficiency in the following areas:

- Analyzes a problem and develops a logical plan for a solution.
- Develops, tests, debugs and implements a software application to perform a specific task.
- Maintains and supports software and hardware
- Writes appropriate documentation for software usage and maintenance.
- Performs routine tasks on multiple operating platforms.
- Exhibits professional work ethic and professional conduct.
- Communicates professionally and effectively in both technical and non-technical environments.
- Collaborates effectively as a member of a team

Computer Programming

Role Description

- Programmer / Programmer Analyst
- Web Developer
- Computer / Technical Support Specialist
- Help Desk Technician
- Software Developer
- Data Entry Person
- Office Automation Specialist
- Instructor/Trainer
- Database Administrator
- Lead Developer
- Systems Analyst
- Systems Administrator
- Project Manager
- Information Systems Manager
- Technical Writer
- Quality Assurance Person

Themes

I.T. Concerns, Attention to Detail, Logical Thinking, Effective Communications, Accuracy, Data Analysis, Application Development and Documentation, Database Management, Web Application Development, Team Work, Troubleshooting skills, and Network Fundamentals

Intended Learning Outcomes

What will students be able to DO "out there" that we're responsible for "in here"?

- Analyzes a problem and develops a logical plan for a solution.
- Develops, tests, debugs and implements a software application to perform a specific task.
- Maintains and supports software and hardware
- Writes appropriate documentation for software usage and maintenance.
- Performs routine tasks on multiple operating platforms.
- Exhibits professional work ethic and professional conduct.
- Communicates professionally and effectively in both technical and non-technical environments.
- Collaborates effectively as a member of a team.

Computer Programming
Program Outcome Guide

Program: **Computer Programming**
Date: August 27, 2013

Theme(s): I.T. Concerns, Attention to Detail, Logical Thinking, Effective Communications, Accuracy, Data Analysis, Application Development and Documentation, Database Management, Web Application Development, Team work, Troubleshooting skills and Network Fundamentals

Prerequisites:

Concepts and	Skills	Assessment	Intended
Concepts • Problem Solving /Methodology --Critical /Logical Thinking • Program Development Cycle • Program Documentation • Structured Programming • Object Oriented Programming • Data Structures • Operating Systems • Security • Changing technology • Accuracy • Safety • Task Management • Oral and Written communications • Professionalism • Ethics • Human Relations • Teamwork • Citizenship/Civic Awareness • Accountability • Diversity **Issues** • Asking critical questions • Plagiarism/ Software piracy • Electrical and Equipment Safety • Communicating Technical Issues to Non-Technical People • Ethics • Policies • Individual vs. Teamwork • Professional and Personal Work Ethic	• Gather, organize and research essential information. • Perform algorithm analysis • Develop a client application using design and logic skills. • Use appropriate programming language/environment to create a client application. • Use critical/logical-thinking skills both independently and as a team member. • Test, debug, and maintain a client application. • Document a program or application with pseudocode, flow-charts, comments. • Write documentation for a non-technical user. • Write HTML code. • Appropriate management of databases. • Use appropriate Operating Systems features, commands and utilities. • Communicate verbally and appropriately with a non-technical user. • Apply effective listening techniques. • Research sources of technical and business information. • Use time management for timely completion of projects and deadlines. • Observes common industry safety practices.	• Instructor assessment of detailed logical plan for application development using flowcharts, pseudo code and I/O layouts. *(CS 1110 Programming in Visual Basic & CS 2210 Intro to C++)* • Instructor assessment of the determination of hardware /software requirements. *(CS 2214 IT Project Management –Capstone & Net 1120 Computer Hardware & Operating System)* • Client and Instructor assessment of the translation and implementation of the design into the program using appropriate language. *(CS 2214 IT Project Management –Capstone)* • Client and Instructor assessment of testing and debugging a program using test data. *(CS 2214 IT Project Management –Capstone*) • Client assessment of functional software application. *(CS 2214 IT Project Management –Capstone)* • Client assessment that software design meets user specifications via walk-through using test data. *(CS 2214 IT Project Management – Capstone)* • Client and Instructor assessment of program documentation, including internal comments, updated design documents and a written user's manual. *(CS 2214 IT Project Management –Capstone)* • Instructor and peer assessment of group work.(*CS 1110 Programming in Visual Basic, NET 1100 Web Page Design CS 2252 Programming Capstone)* • Instructor, faculty and peer assessment of project presentation. *(CS 2214 IT Project Management – Capstone & CS 2252 Programming Capstone)* • *Instructor assessment of professional appearance. (CS 2214 IT Project Management –Capstone & CS 2252 Programming Capstone)* • Instructor assessment of electrical safety practices during hardware replacement or upgrades. (*Net 1120 Computer Hardware & Operating System)* • Instructor assessment of database designed project (CS 2240 Database Management & Applications) • Instructor assessment of a research report or presentation on a current technical topic in the case study assignments in the courses. (Net 2201 Network Applications)	• Analyzes problem and develops a logical plan for a solution. • Develops, tests, debugs and implements software applications to perform a specific task. • Maintains and supports software and hardware • Writes appropriate documentation for software usage and maintenance. • Performs routine tasks on multiple operating platforms. • Exhibits professional work ethic and professional conduct. • Communicates effectively in both technical and non-technical environments. • Collaborates effectively as a team member. **College/Success Skills** • Communicates effectively • Demonstrates math skills • Demonstrates learning and critical thinking • Maintain professional skills and attitudes • Practices human relation skills • Knowledge of science and environment • Community, cultural and global awareness • Maintains a code of ethics
understand to demonstrate the intended outcome?	*master to demonstrate the intended outcome?*	*here to demonstrate evidence of the outcome?*	*be able to Do "out there" that we're responsible for*

PROGRAM OUTCOME MATRIX

Program: Computer Programming (Semester 2012)

		1 Analyzes a problem and develops a logical plan for a solution.	2. Develops, tests, debugs and implements a software application to perform a specific task.	***3.*** Maintains and supports software and hardware	***4*** Writes appropriate documentation for software usage and maintenance.	***5.*** Performs routine tasks on multiple operating platforms.	***6*** Exhibits professional work ethic and professional conduct.	***7*** Communicates professionally and effectively in both technical and non-technical environments.	***8*** Collaborates effectively as a member of a team.
	Semester 1 (Autumn 1)								
CS-1101	*Programming Logic*	*A*					*X*	*X*	*X*
NET-1100	*Web Page Design*	*X*	*X*		*X*		*X*	*X*	*X*
NET-1120	*Computer Hardware & Operating System*			*X*		*X*	*X*	*X*	*X*
MICS-1141	*Intro to Word & Excel*	*X*	*X*				*X*	*X*	
ENGL-1122	*English Composition I*								
GS-1101	*Focus on Success*								
	Semester 2 (Spring 1)								
CS-1140	*UNIX/LINUX*	*X*	*X*	*A*	*X*		*X*	*X*	
CS-1110	*PROGRAMMING IN VISUAL BASIC*	*X*	*X*		*X*		*X*	*X*	*X*
MICS-1142	*MICROSOFT ACCESS*	*X*	*X*		*X*		*X*	*X*	
NET-1110	*NETWORKING BASICS DISCOVERY I*	*X*		*A*		*X*	*X*		*X*
ENGL-1152	*RESEARCH SKILLS*								
ENGL-1130	*SPEECH*								
	Summer								
CS-2294	*Computer Science COOP (Optional)*								
CS-2296	*Computer Science Practicum (Optional)*								
	SEMESTER 3 (Autumn 2)								
NET-2201	*NETWORK APPLICATIONS (SL/CR)*	*X*	*A*	*A*	*X*		*AP*	*A*	*A*
CS-2210	*INTRO TO C++*	*X*	*X*		*X*	*X*	*X*	*X*	*X*
CS-2250	*SERVER-SIDE SCRIPTING*	*X*	*X*	*P*	*X*		*X*	*X*	*X*
MATH-1108	*INTERMEDIATE ALGEBRA*								
SOCI/PSYC	*SOCI / PSYC ELECTIVE*								
	SEMESTER 4 (SPRING 2)								
CS-2211	*ADVANCED C++*	*X*	*X*		*X*	*X*	*X*	*X*	*X*
CS-2214	*IT PROJECT MANAGEMENT (CAPSTONE)*	*A*	*A*	*A*	*AP*		*AP*	*AP*	*A*
CS-2240	*DATABASE MANAGEMENT & APPLICATIONS*	*AP*	*AP*	*X*		*X*	*X*		*X*
ENGL-1104	*JOB SEARCH TECHNIQUES*								
NSC-XXXX	*NATURAL SCIENCE ELECTIVE*								
HUM 2200 OR HUM2203	*INTRO TO WORLD LITERATURE OR ETHICS VALUES & MORALITY*								

ETHICS

Integrity and ethical conduct are especially required in computer science professions. As a result, the penalties for behavior that is unacceptable are severe. The computer science technologies have adopted a policy that the first violation of the honesty policy results in a zero grade for the assignment. A subsequent violation results in failure of the course. These penalties apply to all persons involved.

Dishonesty refers to any behavior that violates academic standards. Dishonesty includes, but is not limited to:

a) any attempt by a student to answer questions on a test, quiz, or assignment by means other than his/her own knowledge

b) attempting to observe the work of another student or allowing other students to observe your work

c) providing or requesting assistance from another person in a manner prohibited by the instructor

d) improper use of computer laboratory

e) permitting another student to plagiarize or copy your work

f) submitting as your own any academic exercise (such as computer printout) prepared totally or in part by another

g) allowing another person to substantially alter or revise your work and submit as his or her own

h) simply changing a word or two while leaving the organization and content substantially intact

i) making unauthorized copies of copyrighted software

j) using or being logged on to another student's account

k) being in possession of another student's disk or computer printouts.

Any occurrence of the above items will be considered a violation of academic honesty and will be subject to the penalty for dishonesty as specified on the syllabus for the course.