

YOSEMITE REGIONAL OCCUPATIONAL PROGRAM

COMPUTER PROGRAMMING II

CBEDS Code: 4619

<u>JOB TITLES</u>	<u>DOT NO.</u>
Computer Programmer	030.162.010
Programmer – Analyst	030.162-014
Programmer – Operator	609.262-010
Programming Equipment Operator	726.685-062
Web Developer/Design	

Course description:

This program is designed as a first course in computer programming. It is intended to train students (hands-on approach) in the basic skills needed to: (1) operate a networked computer and (2) write programs using visual basic and html. The curriculum also introduces internet access, computer graphics, and web page design.

Qualified graduates of this course should be at entry level for a number of jobs in the programming field, web page design, and computer graphics.

Recommended Prerequisites: Demonstrated proficiency at Practical Math or higher

DURATION: 180 - 360 hours

CREDIT: 5 -10 units/semester

INSTRUCTIONAL STRATEGIES

ARTICULATED WITH POSTSECONDARY INSTITUTIONS:

REPLACES:

INSTRUCTIONAL MATERIALS

ISBN: 13-978-0-13-212856-8 / ISBN: 10-0-13-212856-X
An Introduction to Programming Using Visual Basic 2010, 8E
Pearson Education, David I Schneider

ISBN: 13-978-1-4354-5000-9/ISBN: 10-1-4354-5500-2
Python Programming for the Absolute Beginner, 3E
Course Technology, Cengage Learning, Michael Dawson

ISBN: 13-978-1-4239-2721-1/ ISBN: 10-1-4239-2721-4
HTML Complete Concepts and Techniques, 5E
Course Technology, Cengage Learning, Shelly Woods

Instructional Content

Instruction will include:

Student Outcomes

At the end of instruction, the student will be able to:

HoursCL=Classroom
CC=Comm. Class.

1. Computer Programming II	Goal: The students will have a common knowledge of commonly used vocabulary words associated with the computer environment.	Anchor/CR	CTE	CL	CC
1. Terminology	A. Understand basic terminology and their definitions.	1.0 2.0-2.8 4.1 4.3 5.1 6.2-6.6 8.7 8.8 10.1-10.7 CR 1 and 2		10-20	
2. Basic computer systems types and concepts 1. Concepts and functions of a computer system 2. Operating systems, hardware, and peripherals 3. File management 4. Source documents 5. Computer Systems	Goal: The students will understand the basic computer system types and concepts. A. List components of a computer system and their functions. B. Understand the difference between network user and single user computer. C. Understand batch processing and interactive processing. D. Describe input, output and storage devices. E. Describe the differences between entering data (information) and program instruction. F. Identify the systematic procedure in developing a computer program. G. Identify computer by manufacture/model number.	1.0 4.0-4.6 5.0-5.12 9.1-9.3 9.7 10.0-10.14 11.5 CR 1 and 4	C1.0- C1.6	10-20	
3. Operating system 1. Computer Systems 2. File Management 3. Information Resources	Goal: The students will have a basic knowledge and understanding of an operating system A. Identify the operating system of a computer. B. Describe the operating commands and functions. C. Describe three operating systems. D. Enter, compile, save, retrieve, list, delete, correct and execute a program in VISUAL BASIC language. E. Identify a source and object program	1.0 4.0-4.6 5.3 5.5 5.10 5.11 8.8 10.9 10.10 10.11 CR 1 and 4	C1.0- C1.6 C2.0- C2.5 C3.0- C3.3	10-20	

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4. JAVA Programming	Goal: The student will show knowledge of JAVA Programming	Anchor/CR	CTE	CL	CC
1. Planning 2. Editing 3. Creation 4. Save	A. Syntax B. Conditional Statements C. Looping Structures Document a visual BASIC program using REMARK statements. D. Debugging E. Create classes, write mechanics, create attributes	1.0 2.0-2.8 4.0-4.6 5.0-5.12 7.4 7.5 7.7 8.3 8.4 8.8 9.1 9.2 10.1 11.5 CR 1,2,4,5,9 .10 and 11	C1.0- C1.6 C2.0- C2.5 C3.0- C3.3 C4.0- C4.11 C5.0- C5.6 C6.6	65- 130	
5. Advanced program flowchart 1. Create 2. Format 3. Edit 4. Problem Solving 5. File Management	Goal: The student will demonstrate the understanding of a program flowchart A. Design and flowchart a program using Unified Modeling language. B. Demonstrate the basic symbols used in program flowcharting and list their functions.	1.0 2.3 2.4 2.7 4.1 4.2 4.2 5.0-5.12 7.4 7.5 9.1 9.2 11.5 CR 1,2,4,5, and 9	C1.0- C1.6 C2.0- C2.5	10-20	
6. Computer peripherals 1. Computer hardware 2. Operating Systems 3. Information retrieval 4. Analyze equipment	Goal: The student will demonstrate knowledge of various computer peripherals A. Understand the uses and advantages of CD-ROM drives; CD writer; zip drives; hard drives; removable drives; monitors; scanners; network servers; printers and graphics output. B. Identify four input devices and four output devices.	1.0 2.0-2.8 4.1 4.3 5.1 6.2 6.6 CR 1,2,4,5, and 9		5-10	

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7. Advanced web page design 1. Global Communications 2. Problem Solving 3. Technical Documentation 4. Telecommunications	Goal: Student will demonstrate the knowledge of other programming languages A. Build a web page using web design software. B. Edit web pages using html. C. Use other programming languages and the advantages of each language.	Anchor/CR 1.0 2.0-2.8 4.1 4.3 5.1 6.2 6.6 CR 1,2,4,5, 9,10 and 11	CTE C1.0 C2.0 C3.0 C4.0 C5.0 D6.6 C7.0	CL 35-60	CC
8. Career planning and management 1. Hiring practices 2. Career advancement 3. Personal Qualities	Goal: The students will show knowledge of occupations in programming and computer related fields A. Identify programming and computer occupations. B. Identify continuing education possibilities.	1.0 2.0-2.8 3.0-3.9 7.3 7.4 7.7 8.3 8.4 8.6 8.7 9.0-9.7 10 10.4 10.14 11.5 CR 1,2,3,7,8, , and 12		5-10	
9. Web Research 1. Access 2. Search 3. Copy 4. Edit 5. Download	Goal: Students will show ability to access the internet A. Identify different web browsers and crawlers. B. Access internet. C. Research topics. D. Bring internet information and other programs/software.	1.0 2.0-2.8 4.0-4.6 5.4 5.6 5.9 6.2 7.4 7.5 8.0-8.8 10.11 10.12 10.13 10.14 CR 1,2,4,5, 7,8, 11 and 12	C3.3	5-10	

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10. Advanced Graphic Design	Goal: Students will show knowledge of graphics software	Anchor/CR	CTE	CL	CC
1. Create 2. Edit 3. Integrate	A. Identify and use tools of computer graphics software. B. Knowledge of formats (i.e. JPEG, TIFF, GIF, etc.) C. Alter pictures using selection tools and color variations. D. Integrate altered pictures into web page design.	1.0 2.5 4.1 5.1 5.2 5.3 5.6 7.4 7.5 8.8 10.0- 10.14 11.5 CR 1,2, 4 and 10	C6.0-C6.7	15-30	
11. Python Programming 1. Planning 2. Editing 3. Creation	Goal: Students will show knowledge of Python Programming A. Branching, looping, generating random numbers B. Knowledge of software objects C. Create classes, write mechanics, create attributes. D. Create graphic windows, test for collision between sprites.	1.0 2.0-2.8 4.0-4.6 5.0-5.12 7.4 7.5 7.7 8.3, 8.4 8.8 9.1, 9.2 10.1- 10.14 11.5 CR 1,2,4,5,8 , 10 and 11	C1.0-C1.6 C2.0-C2.5 C2.0-C3.3 C4.0- C4.11 C5.0-C5.6 C6.6	15-30	
12. Java Programming 1. Planning 2. Editing 3. Creation	Goal: Students will show knowledge of Java Programming A. Syntax B. Conditional statements C. Looping structures D. Debugging E. Create classes, write mechanics, create attributes.	1.0 2.0-2.8 4.0-4.6 5.0-5.12 7.4 7.5 7.7 8.3 8.4 8.8 9.1 9.2 10.1- 10.14 11.5 CR 1,2,4,5,8 , 10 and 11	C1.0-C1.6 C2.0-C2.5 C2.0-C3.3 C4.0- C4.11 C5.0-C5.6 C6.6	65- 130	