CIS 22 Course Outline as of Fall 2001

CATALOG INFORMATION

Dept and Nbr: CIS 22 Title: ASSEMBLY LANG PROG
Full Title: Assembly Language Programming
Last Reviewed: 1/28/2019

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	0	17	Lab Scheduled	0
		Contact DHR	5.00		Contact DHR	87.50
		Contact Total	8.00		Contact Total	140.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 245.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	10 - 8 Units Total
Also Listed As:	
Formerly:	BDP 22

Catalog Description:
Techniques of assembly language programming for the Intel family of microprocessors. Topics include IBM hardware, architecture (bus, memory, stack, I/O), design of structured assembly language code, use of software interrupts, survey arithmetic notations (BCD, floating point, binary), and discussion of I/O and disk processing concepts.

Prerequisites/Corequisites:
Course Completion of CIS 10B

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Techniques of assembly language programming for the Intel family of microprocessors. (Grade Only)
Prerequisites/Corequisites: Course Completion of CIS 10B
Recommended:
Limits on Enrollment:

Transfer Credit: CSU;UC. (CAN CSCI10)
Repeatability: 8 Units Total

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Transferable	Effective:	Fall 1982	Inactive:	
UC Transfer:	Transferable	Effective:	Fall 1982	Inactive:	

CID:
CID Descriptor: COMP 142 Computer Architecture and Organization
SRJC Equivalent Course(s): CS12

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Students will:
1. Create a complete set of source modules using standard design tools
2. Prepare executable assembly language programs which include at least one subroutine library module.
3. Distinguish and categorize the architectural components of the Intel X86 family of microprocessors.
4. Create programs which carry out BCD, floating-point, and binary arithmetic operations.
5. Demonstrate ability to convert numbers to and from decimal, binary, octal, and hexadecimal.
6. Demonstrate ability to use six BIOS and six DOS software interrupts.

Topics and Scope:

1. Assembly Language Environment.
   - A. Software design process.
   - B. Programming tools.
     1. editors
     2. assemblers
     3. debuggers
   - C. Hardware environment.
     1. networking
     2. workstations
     3. peripheral devices
   - D. Assembly language overview.
     1. general syntax notation
     2. instruction categories

2. Data Types and Number System.
    A. Numeric data.
        1. number system
            a. binary, decimal, octal, hexadecimal
            b. number system conversions
        2. arithmetic notation
            a. binary, signed and unsigned
            b. floating point
            c. BCD
    B. Character data.
        1. ASCII character set
3. Computer Architecture.
    A. Microprocessors.
    B. BUS.
    C. Registers.
    D. Memory.
    E. Stack.
    F. Peripheral device I/O (ports).
4. Instruction Set.
    A. Addressing modes.
    B. Data transfer instructions.
    C. Software interrupt structure.
    D. Arithmetic operations.
    E. Control structures.
    F. Stack operations.
    G. String operations.
5. Peripheral Device Access.
    A. Graphics displays.
    B. Disk I/O.
    C. Standard list device.

Assignment:

1. Read approximately 25 pages per week from textbook.
2. Prepare hierarchy charts and structured flowcharts.
3. Code, assemble, link and debug approximately 10 Assembly Language programs per semester.
4. Write documentation to accompany programs.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Exams, PROGRAMMING EXERCISES	Problem solving 20 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

LABORATORY PERFORMANCE	Skill Demonstrations 5 - 10%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, SHORT ANSWER & PROGRAMMING	Exams 55 - 80%

Other: Includes any assessment tools that do not logically fit into the above categories.

OPTIONAL PROGRAMMING PROJECT	Other Category 0 - 0%

Representative Textbooks and Materials:
"Assembly Language for Intel-Based Computers, 3rd Edition, by Kip Irvine - Prentice Hall 1999