SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CIS 121S PROGRAMMING LOGIC AND DESIGN
3 CREDIT HOURS

COURSE DESCRIPTION
Introduction to programming concepts enforcing good style and logical thinking. Includes instruction on the use of software to create flowcharts and diagrams while working through the course material. General programming concepts, structured logic, modular programming, and decision and loop structures are introduced. Concludes with a discussion of control breaks, arrays, and an introduction to object-oriented programming. Prerequisite: ENG 092D and MTH 098D or equivalent, and CIS 110S. Lab fee.

COURSE GOALS
The student will:

Bloom's Level		Program Outcomes
1	1. List the steps involved in producing a computer program.	3
2	2. Describe the data hierarchy of files, records, fields, and characters.	4
3	3. Identify and appropriately use basic flowcharting symbols, hierarchy charts, and pseudocode statements.	3
3	4. Use a diagramming program to create flowcharts and other related diagrams.	3
3	5. Define and demonstrate the use of local, global, string, and numeric variables, as well as the concept of initialization.	3, 7
3	6. Use the three basic structures of structured programming: sequence, selection, and loop.	7
3	7. Define and demonstrate the use of structured and unstructured logic.	3, 7
2	8. Describe the advantages of modularized programs and be able to modularize an existing program.	3, 4, 7
2	9. Describe the six logical comparison operators, as well as the concept of short-circuit evaluation in Boolean expressions.	3, 7
3	10. Use decision tables.	3, 7
3	11. Use loops with control variables to control loops, understand and use nested loops, and use loops to accumulate totals.	3, 7
3	12. Use a team approach to solve a programming problem.	6
3	13. Apply appropriate documentation techniques within programs.	7
3	14. Execute the software development process to apply a top-down design approach when writing computer programs.	3, 4, 7
3	15. Use features of object-oriented programming and apply them to programs using objects and classes.	7
2	16. Discuss the importance of ethics in the computer industry and the role they play in the field of computer programming.	1

CORE VALUES
The Core Values are a set of principles that guide Edison State Community College in creating its educational programs and environment. They will be reflected in every aspect of the College. Students' educational experiences will incorporate the Core Values at all levels, so that a student who completes a degree program at Edison State Community College will not only have been introduced to each value, but will have had them reinforced and refined at every opportunity.

TOPIC OUTLINE

1. Introduction to Programming and Logic
2. Flowcharts and Diagrams
3. Elements of High-Quality Programs
4. Elements of Structured Programming
5. Decision Structures
6. Loop Structures
7. Arrays
8. File Handling, Control Breaks, and Applications
9. Array/File Sorting, Multi-Dimensional Arrays, and Indexed Files and Linked Lists
10. Advanced Modularization Techniques
11. Introduction to Object-Oriented Programming
12. Introduction to Event-Driven Programming
13. Software Development Lifecycle
14. Base-2 Numeral Systems
15. Base-16 Numeral Systems