SYLLABUS
PART I
EDISON STATE COMMUNITY COLLEGE
CIS 121S INTRODUCTION TO PROGRAMMING
3 CREDIT HOURS

COURSE DESCRIPTION
Introduction to programming concepts enforcing good style and logical thinking with a focus on variables, expressions, types, branching, loops, functions, strings, lists, dictionaries, exceptions, and modules. Includes an introduction to object-oriented programming concepts, agile software development, REST APIs, Git, and base-2 and base-16 numeral systems. Prerequisite or Co-requisite: CIS 100S or CIS 110S. Recommended: MTH 093D or equivalent. Lab fee.

COURSE GOALS
The student will:

Bloom's Level		Program Outcomes
3	1. Apply information technology fundamentals and use basic software applications to solve problems.	3
5	2. Design algorithms using pseudocode and/or flowchart to solve programming problems.	3, 4, 7
2	3. Identify data types and use variables for input and output operations.	3, 4, 7
3	4. Demonstrate the ability to use operators to create logical expressions, mathematical calculations, and assignment statements.	3, 4, 7
5	5. Build conditional logic using Boolean expressions and decision structures.	3, 4, 7
5	6. Construct loops to implement iterative logic.	3, 4, 7
5	7. Create and use functions and modules.	3, 4, 7
5	8. Create a data structure, such as an array, to store and manipulate a collection of related elements.	3, 4, 7
3	9. Properly use error checking, debugging, and data validation.	3, 4, 7
3	10. Demonstrate the use of introductory object-oriented programming principles.	3, 4, 7

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 with Python
2. Software Development Lifecycle, REST APIs, and Git
3. Base-2 Numeral Systems and Base-16 Numeral Systems
4. Variables and Expressions
5. Types
6. Branching
7. Loops
8. Functions
9. Strings

10. Lists and Dictionaries
11. Classes
12. Exceptions
13. Modules
14. Files
15. Inheritance