MASTER COURSE OUTLINE

Prepared By: Arthur Wanner/Tom Willingham	Date: September 2017

COURSE TITLE

Intro to Programming

GENERAL COURSE INFORMATION

Dept.: CS	Course Num: 111	(Formerly:)
CIP Code: 11.0901	Intent Code: 21	Program Code: 527
Credits: 5		
Total Contact Hrs Per Qtr.: 88		
Lecture Hrs: 22	Lab Hrs: 66	Other Hrs:
Distribution Designation: General Elective (GE)		

COURSE DESCRIPTION (as it will appear in the catalog)

An introductory computer programming course. Students learn to write and debug simple text based programs while exploring the fundamental principles of programming. Topics for study include input / output, statements, expressions, operations, variables, data types, control structures, program modularization, basic data structures and file input and output.

PREREQUISITES

MATH 098 or concurrent enrollment

TEXTBOOK GUIDELINES

Textbook to be determined by CS Faculty.

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Design, write, execute and test simple, text based computer programs.
2. Locate and fix bugs (errors) while testing programs.
3. Write basic programs that take input from the keyboard and display output to the screen.
4. Utilize predefined code libraries (APIs) when building programs.
5. Define variables and use them appropriately in statements and expressions.
6. Use common data types and the operations that are defined on those types.
7. Use arithmetic, relational and logical operators to develop complex expressions.
8. Apply control structures (sequence, decision and repetition) to correctly control the flow of a program.
9. Modularize program code using functions (sub-routines or methods).
10. Utilize basic collection data structures such as (arrays, lists, vectors).
11. Compose programs that read input from a file and write output to a file.

INSTITUTIONAL OUTCOMES

IO1 **Communication**: Students will be able to communicate clearly and effectively within a workplace context

IO2 **Quantitative Reasoning**: Analyze and solve computational problems using a modern program language

COURSE CONTENT OUTLINE

1. Development environment setup and first program
2. Capturing input from the keyboard, displaying output to the screen
3. Statements, expressions, data types, variables, values, operations
4. Decisions and conditions (if statements and boolean expressions)
5. Repetition structures using loops / iteration
6. Program modularization using functions or sub-routines
7. Arrays and basic collection types (lists or vectors)
8. File input and output

DEPARTMENTAL GUIDELINES *(optional)*

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DIVISION CHAIR APPROVAL	**DATE**