

COURSE OUTLINE
CMSY-121
Structured Logic and Program Design
3 Credits

HOWARD COMMUNITY COLLEGE

Description

This course is an introduction to simple algorithm development. Students use pseudo code and flowcharts to represent developed algorithms. A higher-level language will be introduced to implement the developed algorithms into actual computer programs. Prerequisite: Eligible to enroll in ENGL-121 and MATH-061.

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Perform the necessary problem-solving steps to develop an algorithm.
2. Understand the major components to an algorithm: input stage, processing stage, and output stage.
3. Understand the role of variables in algorithm development.
4. Understand how to acquire input and produce output.
5. Understand the use of selection constructs in algorithm development.
6. Understand the use of repetition constructs in algorithm development.
7. Understand the use of arrays in algorithm development.
8. Understand modular design in algorithm development.
9. Represent developed algorithms using flowcharts.
10. Represent developed algorithms using pseudo code.
11. Check the developed algorithms for logic errors.
12. Convert the developed algorithms into an actual computer program using a higher-level language.
13. Use the skills learned in this course as a foundation to learn various higher-level computer programming languages.

Major Topics

- I. Basic problem solving
- II. Variables
- III. Input / Output
- IV. Selection
- V. Repetition
- VI. Arrays
- VII. Modularization
- VIII. Flowcharts
- IX. Pseudo code
- X. Error Checking
- XI. Conversion of algorithms into computer programs

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member, but will include at least eight projects and two tests.

Other Course Information

Meets college definition for an Arts and Science elective and a Business elective.