



Course Syllabus

Design Logic - COSC1309

Course Description: A discipline approach to problem solving with structured techniques and representation of algorithms using pseudo code and graphical tools. Discussion of methods for testing, evaluation, and documentation.

Semester Hours Credit: 3

Lecture/Lab Hours: 2/3

Prerequisite: None

Textbook(s): None.

Student Learning Outcomes:

Upon successful completion of this course, students will:

Apply the techniques of structured (functional) decomposition to break a program into smaller pieces. Describe the mechanics of parameter passing and demonstrate the difference between call-by-value and call-by-reference parameter passing.. Discuss the importance of algorithms in the problem solving process, identify the necessary properties of good algorithms, and create algorithms for solving simple problems.

1. Use pseudo code or a programming language to implement, test, and debug algorithms for solving simple problems.
2. Discuss the representation and use of primitive data types and built-in data structures.
3. Explain the reasons for using different formats to represent numerical data.
4. Explain basic concepts of secure programming functions.
5. Discuss the properties of good software design.
6. Describe the phases of program translation from source code to executable code and the files produced by these phases; explain the software life cycle and its phases, including the deliverables that are produced.
7. Identify and describe the properties of a variable such as its associated address, value, scope, persistence, and size.
8. Explain how abstraction mechanisms support the creation of reusable software
9. Understand advanced pointers
10. Understand pointers as applied to arrays
11. Understanding of advanced pointers and enumerated types and structures.



Evaluation Methods:

1. Classroom activities and attendance
2. Chapter exercises
3. Exams
4. Individual and group projects
5. Individual classroom presentations

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