1. **Course number and name:** CMPE112, Programming Fundamentals
2. **Credits and contact hours, and categorization:** 4 credit hours, two 2-houre lecture perweek; 2-houres lab per week, enginereeeing topic
3. **Course Lecturers:** Prof. Dr. Marifi Güler (Grps 01 & 02)

 Prof. Dr. Omar Ramadan (Grps 03 & 04)

 **Lab. Coordinator:** Nada Kollah

1. **Text book:** A First Book of ANSI C, 4th ed., Course Technology, G. J. Bronson, 2006.

**Other supplemental materials:** Programming in ANSI C, West Publishing Company, R. Kumar and R. Agrawal, 1992.

1. **Specific course information**
2. **Catalog description:**

An overview of C programming language. Sequential structures, data types and classes of data, arithmetic operators and expressions, assignment statements, type conversions, simple I/O functions (printf, scanf, fprintf, fscanf, gets, puts, fgets, fputs). Selective structures, relational operators, logical operators, conditional expression operator, conditional statements (if, switch). Repetitive structures, while, do-while, for loops, loop interruptions (goto, break, continue). Functions, function definitions and function calls. Arrays, array declaration, array initialization, arrays as function arguments. Pointers, basics of pointers, functions and pointers arrays and pointers, strings and pointers. Library functions for processing strings, pointer arrays.

1. **Prerequisite:** CMPE107 (Foundations of Computer Engineering)
2. **Required/elective/ selected elective:** required course
3. **Specific goals for the course**
4. **Course outcomes:**

After successfully completing this course, students will be able to:

* 1. Construct an algorithm and /or flowchart for solving a problem
	2. Understand the Basics of C high level programming languages
	3. Use if-statement and switch statement to implement selective structure programs
	4. Use while-loop, do-while loop, and for-loop to construct repetitive structure
	5. Use modular programming for implementing multi-task problem
	6. Use arrays concept in C programming
	7. Use pointers in C programming
	8. Use strings in C programming
	9. Use files for input/output operations in C language programming
	10. Use the MS-Visual Studio IDE to edit, compile, and executing C codes
1. **Student outcomes listed in Criterion 3**

**ABET Outcome**:

* 1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
1. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
2. **Topics covered**
* Introduction, Formatted I/O
* Sequential Structures
* Selective Structures
* Repetitive Structures
* Functions
* Arrays
* Pointers and arrays
* Strings
* File I/O processing
1. **Lab. Schedule**

 Lab 1: Week of March 21
 Lab 2: Week of March 28
 Lab 3: Week of April 04
 Lab 4: Week of May 09
 Lab 5: Week of May 16
 Lab 6: Week of May 23

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment****(Tentative)** | **Method** | **No** | **Percentage** |
| Midterm Exam  | 1 | 35% |
| Labs | 6 | 15 % |
| Final Examination | 1 | 50% |
| **Policy on makeups:** For eligibility to take a makeup exam, the student should bring a medical report within 3 working days of the missed exam. You will have only one make-up for Midterm or Final.  |
| **Policy on cheating and plagiarism:** Any student caught cheating at the exams or assignments will automatically fail the course and may be sent to the disciplinary committee at the discretion of the instructor. |
| **Policy on NG grades:** NG grade will be given in case of missing both the midterm and final exams without an acceptable excuse. NG will also be given in case of poor Lab attendance (<40%).irrespective of the exam performance. |