

CMPE101 - Foundations of Computer Engineering

Department: Computer Engineering

Instructor information

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Assistant information

TBA

Program Name: Computer Engineering

Program Code: 25

Course Number:

CMPE 101

Credits:

3 Cr

Year/Semester:

2017-2018 Spring

Required Course Elective Course

Prerequisite(s):

None

Catalog description:

This course introduces the student to the fundamental concepts of computer engineering. Topics covered include: Computers and information processing - notion of computers, concepts of data and information, applications of computers, history of computing. Computer hardware - CPU, memory, input/output interface, secondary storage, ports, types of computer systems, computer software - system software, utilities, application software, data communication, an overview of operating systems. General problem solving concepts: basic data types, constants and variables, basic operators and expressions, algorithms, pseudo codes, and flow charts, sequential, and conditional problem solving (IF statements and CASE logic), looping (WHILE/WHILE-END, REPEAT-UNTIL, FOR structures), formatted output, examples in C programming language.

Course web page:

<https://staff.emu.edu.tr/hakanaltincay/en/teaching/cmpe101>

Textbook(s):

1. Alan Evans, Mary A. Poatsy and Kendall Martin, Technology in Action, 10th Edition, Pearson Prentice Hall, 2014.
2. Jeri R. Hanly and Elliot B. Koffman, Problem Solving and Program Design in C, 6th Edition, Pearson Prentice Hall, international edition, 2010.

Indicative basic reading list:

1. M. Sprankle, Problem Solving and Programming Concepts, 8th edition, Pearson Education, 2008.
2. Ram Kumar, Rakesh Agrawal, Programming in ANSI C, West Publishing Company, 1992.
3. Lecture notes

Topics covered and class schedule (tentative):

(3 hours of lectures per week)

Week 1-2 Looking at computers; Understanding and assessing hardware; A closer look at system hardware.

Week 3 The operating system, utility programs and files management; Application software; Using the Internet; Networking and security.

Week 4-5 Introduction to problem solving techniques, Algorithms, Flowchart.

Week 6 Introduction to C programming language, Data types and expressions in C

Week 7-8 C Programming: Sequential structure.

Week 9-10 Midterm

Week 11-12 C Programming: Selective structure.

Week 13-15 C Programming: Repetitive structure.

Laboratory schedule (tentative):
(2 hours of laboratory per week)

- Weeks 1, 2** No Lab
Week 3 No Lab
Week 4 Introduction to Microsoft Word and Excel for Windows.
Week 5 Introduction and debug features of MS visual C compiler.
Week 6 No Lab
Week 7 C Programming: sequential structure.
Week 8 C Programming: more on sequential structure.
Week 9-10 Midterm
Week 11 No Lab
Week 12 No Lab
Week 13 C Programming: selective structure.
Week 14 C Programming: more on selective structure.
Week 15 C Programming: repetitive structure

Course learning outcomes:

Upon successful completion of the course, students are expected to have the following competencies:

1. Construct an algorithm and /or flowchart for solving a problem
2. Write a complete C program for solving a problem
3. Use IDE to edit, compile, and executing C code
4. Identify the difference between computer hardware and computer software
5. Identify the difference between the system software and application software
6. Measure computer system performance
7. Ability to understand basics of computer networks, and internet.
8. Identify the difference between the computer programming languages: Machine, Assembly, and High level languages.
9. Understand the Basics of high level programming languages
10. Use if-statement and switch statement to implement selective structure programs
11. Use while-loop, do-while loop, and for-loop to construct repetitive structures

Assessment (tentative)	Method	No	Percentage
	Midterm Exam	1	35%
	Final Examination	1	50%
	Lab	7	15%

Policy on makeups: For eligibility to take a makeup exam, the student should bring a doctor's report within 3 working days of the missed exam. You will have only one make-up for Midterm or final exams only. Make-up will be organized after final exam period and will cover all the material studied during the semester.

Attendance to lectures Attendance will be taken in every lecture but will not be graded.

Attendance to labs There is no makeup for labs

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 Midterm and Final without official excuse.

Contribution of course to ABET criterion 5

Credit Hours for:
 Mathematics & Basic Science : 0
 Engineering Sciences and Design : 3
 General Education : 0

Relationship of the course to program outcomes

The course has been designed to contribute to the following program outcomes:

- e) identify, formulate, and solve engineering problems.
- k) use the techniques, skills, and modern engineering tools necessary for engineering practice.

Prepared by: Prof. Dr. H. Altınçay

Date Prepared: 9 February 2018