

Home

EE2372 Software Design I - Spring 2010 space.

Days/Time : TTh 10:30 - 11:50

Location: Classroom Building 301

Course Description: An introduction to software design with a structured computer language that focuses on the construction of programs consisting of multiple functions residing in multiple files. Covers program creation and top-down-design, basic elements and operations, modular program construction, and the use of programming tools such as makefiles. Introduces object oriented programming techniques. AKA Learn how to program a computer.

Class Outcomes (all equally important):

1. Design, implement , and execute programs written in the C language.
2. Define the use of functions, and design multiple module programs.
3. Use a variety of UNIX-based and PC-based programming tools for software development like IDE's (Integrated Development Environment), debuggers and makefiles.
4. Create and use pointers, data structures and enumerated data types.
5. Access text files directly in C language programs via I/O functions.

[Complete Class Syllabus \(pdf\)](#)

Class calendar (always subject to change)

Spring 2010 EE 2372 topic calendar			
Date	Topic	Assignment out	Reading Assignment
19-Jan	Course introduction		
21-Jan	Computer Architecture, Programming Languages, IDE, Intro to MATLAB		Flowchars handout
26-Jan	Elements of Programming in MATLAB		
28-Jan	Elements of Programming in MATLAB	Assignment 1	
2-Feb	Input/Output in MATLAB, Software design with flowcharts		Chapter 2
4-Feb	Software design with flowcharts	Assignment 2	Chapter 3 and Chapter 4
9-Feb	Introduction to C language, compilers and IDEs. Basic C language structure and basic input/output		Chapter 5
11-Feb	Variables, Data types and arithmetic expressions	Assignment 3	
16-Feb	Program Looping I		Chapter 6
18-Feb	Program Looping II	Assignment 4	
23-Feb	Decision structures I		Chapter 7
25-Feb	Exam 1 Up to February 18		
2-Mar	Decision structures II	Assignment 5	Chapter 7 and 8
4-Mar	Arrays		
9-Mar	Functions		
11-Mar	Functions	Assignment 6	Appendix B
16-Mar	Spring Break		
18-Mar	Spring Break		
23-Mar	Functions - The Standard library		Chapter 9
25-Mar	Structures	Assignment 7	Chapter 10
30-Mar	Strings		Chapter 11
1-Apr	Pointers	Assignment 8	
6-Apr	Pointers		

8-Apr	Pointers	Assignment 9	Chapter 12 and Chapter 13
13-Apr	Bit operators and Review of the preprocessor		
15-Apr	Exam 2 - up to pointers		Chapter 14
20-Apr	Enumerated datatypes and type casting		Chapter 15
22-Apr	Program modularity		Chapter 16
27-Apr	Input/Ouput operations in C	Assignment 10	Chapter 17
29-Apr	Command line arguments and Dynamic Memory Allocation		
4-May	C++ - Object orient programming I		Chapter 19
6-May	C++ - Object orient programming III		
7-May	Dead Day		
13-May	Thursday 10:00 am - 12:45 pm		

Handouts

[Flowcharts](#) (from www.nos.org)

Lecture Materials

[Introduction to programming elements using MATLAB](#)

[Designing programs with flowcharts](#)

[Decision Making](#)

[Looping](#)

[Structures](#)

[Structures programming examples](#) Note: The original version of these examples were downloaded from the web, but I don't have the source anymore. The examples have been modified in some parts to illustrate other properties of structures.

[Pointers](#). An introduction to pointers. Really an intro, the remaining material was covered in class. [Example 1](#). [Example 2](#).

[Linked list example](#). Just the C-code that could be useful for your last homework.

Assignments

[Homework 1 - Elements of programming using MATLAB \(pdf\)](#)

[Homework 2 - Program design using flowcharts \(pdf\)](#)

[Homework 3 - More MATLAB and flowcharts. Elements of C language \(pdf\)](#)

[Homework 4 - Variables, data types and arithmetic expressions \(pdf\)](#)

[Homework 5 - Program Looping \(pdf\)](#)

[Homework 6 - Making decisions \(pdf\)](#)

[Homework 7 - Arrays an sorting \(pdf\)](#)

[Homework 8 - Functions \(pdf\)](#)

[Homework 9 - Structures and Strings \(pdf\)](#)

[Homework 10 - Pointers \(pdf\)](#)