Spring 2013

CEG 2170-01: Introduction to C Programming for Engineers

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Syllabus
CEG 2170 Introduction to C Programming for Engineers
Spring 2013

MWF 10:10 pm – 11:05 pm in Russ Engineering Center Room 346

Description: Basic engineering problem solving using the C programming language. Topics include loops, selection, input/output, files, functions, arrays, complex variables, pointers, structures, and dynamic memory. Students will learn how to approach solving problems in engineering and science; how to develop algorithms, using advanced techniques such as recursion, searching, sorting and linked lists, to solve those problems; and how to implement those algorithms in the C language.

Instructor: Dr. Shaojun Wang, 387 Joshi, 775-5140. E-mail: shaojun.wang@wright.edu Office hours: 3:30-4:30pm MW. Other hours by appointment; all you have to do is talk to me and we will find a time to meet.

Textbooks: Required: Problem Solving and Program Design in C, 7th ed, Jeri R. Hanly and Elliott B. Koffman, Pearson. (ISBN- 13: 978-0-13-293649-1, ISBN-10: 0-13-293649-6)

Software: Code::Blocks EDU-Portable, an open source, free, configurable programming environment for C. Free download from http://codeblocks.codecutter.org/

Grading: Two Midterm exams: 25%. One Final: 25%. Thirteen Laboratories: 20%. Six Projects: 30%. Midterm exams and the final exam will be closed book, closed notes. A one page, one-sided, written or typed, 8.5 x 11 help sheet will be allowed. (no calculators allowed). Unannounced Quizzes may be given at any time. Quiz grades will be part of the midterm exam grade component.

Grading scale: **A:** 100-90, **B:** less than 90-80, **C:** less than 80-70, **D:** less than 70-60, **F:** less than 60-0.

Policy:
Projects are due at the time and date specified on Pilot. Laboratory Exercises: Although lab exercises are "officially due" Saturday evening, your goal should be to turn them in by the **end of your lab section** each week. If you do, you will earn **5 extra credit points** for that lab, as long as you earn at least 60% on the material itself. Your lab instructor will explain these procedures in lab during the first week. **There is no late submissionfor labs**. Projects: **Projects are due on Saturday evenings by 11:55 pm.** Late projects will be accepted up to 24 hours after the due time/date with a 20% grade penalty. No makeup exams unless there is a verifiable emergency. Exceptions to the late policy may be made only under the most unusual circumstances. All work must be your own; sharing of program code will result in a grade of "zero" for all involved. However, sharing ideas and general computer skills with others outside of class is encouraged. Students are expected to read and follow the Academic Integrity Policy:

http://www.wright.edu/students/judicial/integrity.html

Pilot:
Grades will be posted, projects and labs will be assigned, and programs will be submitted, through Pilot. Students should become familiar with Pilot (campus login username and password required) and should read the instructions on the entry page at: http://pilot.wright.edu

Schedule:

	Topic	Reading (Hanly and Koffman)		
Week 1	Course Intro Algorithms, Software Development Method, CodeBlocks IDE, C Basics	Chap 00, Chap 1		
Week 2	Data Types, Operators, Expressions, Input/Output	Chap 2		
Week 3	Function: C library functions, User defined functions, Program Organization using functions	Chap 3 (graphics optional)		Project 1 Due
Week 4	Logical/Relational Operators, Selection Statements	Chap 4		
Week 5	Loops	Chap 5 (graphics optional)		Project 2 Due
Week 6	Pointers and Modular Programming, Text File Operations **Exam 1**	Chap 6 Chap 11.1		
Week 7	Arrays, Arrays and loops, Arrays and functions, 2D Arrays, searching and sorting using qsort and bsearch	Chap 7 (graphics optional)		Project 3 Due
Week 8	Strings	Chap 8		
Week 9	Structures	Chap 10		Project 4 Due
Week 10	Complex Variables in C, Bitwise operations **Exam 2**	Class Notes		
Week 11	Binary File I/O, Random Access	Chap 11		Project 5 Due
Week 12	Storage Classes, Multi-File Programs, User Defined Header Files Recursion	Chap 12 Chap 9		
Week 13	Dynamic Memory Dynamic Data Structures Linked Lists	Chap 13		Project 6 Due
Week 14	Linked Lists Applications: complex zeros of functions Review	Chap 13		
Final Exam	TBD			