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Spring 2012

CEG 221-01: Advanced C for Engineers

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Syllabus

CEG 221 Advanced C for Engineers

Section 01 – Spring 2012

T Th 4:10 p.m. – 5:50 p.m. in Russ Engineering Center Room 355

Description: This course introduces advanced constructs, algorithms, and data structures in the C programming language. Emphasis is on problem solving and techniques useful to engineers. Topics include functions, arrays, pointers, and structures as well as sorting algorithms, linked lists, binary files, complex numbers, and numerical methods applications. 4 credit hours. Prerequisite: CEG220 (Introduction to C Programming for Engineers).

Instructor: Dr Jay DeJongh, 341 RC, 775-2555. E-mail: jay.dejongh@wright.edu Office hours: 12:00-2:30 M, W. Other hours by appointment; all you have to do is talk to me and we will find a time to meet.

Textbooks:

C: The Complete Reference, Fourth Edition, Herbert Schildt, Osborne/McGraw-Hill, 2000.

Software: Dev-C++ Version 4.9.9.2 for Windows. Free download from <http://www.bloodshed.net>.

or (optional) CodeBlocks EDU –Portable (codeblocks-EP) at <http://codeblocks.codecutter.org/> .
This is a nice package that is similar to Dev-C++ but it has some nice extra features.

Grading: Two Exams: 20%. One Final: 25%. Eight labs: 15%. Four Projects: 40%. Course exams and the Final Exam will be closed book, closed notes. A one page, 8.5 x 11 help sheet will be allowed. 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:

The labs will be done in class, usually, but not always, on Thursdays. Lab assignments will usually be available on pilot at the beginning of the week. However, additional lab problems may be assigned in class, at the discretion of the instructor. The **goal** is to complete the labs by the end of the class, but if they can't be completed by the end of the period, they can be submitted on pilot by Friday, 9:00 pm. Projects are due Saturdays, 11:55 pm. Projects submitted late within 24 hours of the due date/time will incur a 20% penalty. No late exams or labs 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. Sharing ideas, general programming concepts, 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

Week	Topic	Reading	Exams	
1	Review of C basics/techniques, Header Files, typedef, Advanced Pointers, Simulation, Time Functions, Strings	Ch 4, 5		
2	Structures, Structures and Functions Pointers to Structures, Structures and Arrays	Ch 7		
3	Structures, Searching, Sorting	Ch 7, Ch 21		Project 1 Due
4	Dynamic Memory Exam 1	Ch 5, Ch 17	Exam 1, Thursday	
5	Dynamic Data Structures, Linked Lists, Recursion	Ch 6, 7, 17, 22 (pg 521-541)		
6	Binary File I/O	Ch 9		Project2 Due
7	Binary File I/O Bitwise Operations	Ch 9 Ch 1 (pg 48)		
8	Complex Numbers Exam 2	Ch 20 (pg 484 – 487)	Exam 2 Thursday	Project 3 Due
9	Applications: Numerical Methods Pointers to Functions, zeros of functions			
10	Applications: Numerical Methods, Review			Project 4 Due
Final Exam	Tuesday, Jun 5, 5:45 - 7:45pm			

Project Schedule

Project	Assigned Sun, 8 am	Due Saturday 11:55 pm
1	Mar 25	Apr 14
2	Apr 15	May 5
3	May 6	May 19
4	May 20	June 2