CSS-4: INTROCUCTION TO SCIENTIFIC PROGRAMMING IN C
COURSE SYLLABUS

"ALL questions are GOOD questions!"
"This is YOUR course!"

Term: Spring 2011
Class meeting times: Tu 7:00-9:00 pm/ Th 6:00 -9:00 pm
Location: CALL-110
Instructor: William J. (Joe) Welch
Phone: (831) 275-0853

E-mail: jwelch@jafar.hartnell.edu   Feel free to contact me at any time. Please include the following information in the subject of any e-mail that you send to me: "Hartnell CSS-4 [Your name]". Your e-mails reflect your interest and capabilities – compose your e-mails using correct grammar and syntax. E-mails with poor grammar or spelling, or missing "CSS-4" in the subject line will not receive a response.

Course Description: A comprehensive programming course that emphasizes the design, coding, debugging, and documentation of programs using procedural and functional decomposition techniques. This course is taught using the C programming language and MATLAB. Lab work in addition to regularly scheduled hours will be necessary.

CSS-4 is a challenging and rewarding class. Personal dedication and significant effort will be required by each student to be successful. Extensive work will be required outside of class hours - please refer to the computer lab hours to appropriately arrange your hours and schedule.

Course Topics:
      1.   Engineering Problem Solving
      2.   Simple C Programs
      3.   Control Structures and Data Files
      4.   Modular Programming with Functions
      5.   Arrays and Matrices
      6.   Programming with Pointers
      7.   Programming with Structures
      8.   An Introduction to C++
      9.   MATLAB

Attendance Policy: If you anticipate attendance problems, please let me know as soon as possible. If you are running late, and arrive late to class, we will work on making up the material. The Hartnell attendance policy is that a student will be disenrolled when the accumulated absences equal 2 weeks of class. If you are aware of an absence beforehand, please send me an e-mail. Coursework and class information covered during a missed class remains the responsibility of the absent student, and should be completed prior to the beginning of the next class. Late arrivals or early departures without prior notice (e-mail or phone call) will count as an absence. (See the explanation of grade points awarded for attendance.)

Required Texts: (Bring the textbook and notebook to <u>all</u> class sessions.)
     (1) Textbooks
          •   *Engineering Problem Solving with C* , Third Edition, 2005, ISBN 0-13-142971-X, Author: Delores Etter
          •   *Introduction to MATLAB,* 2nd Edition, ISBN 0-13-608123-1, Author: Dolores Etter
     (2) Notebook: You are required to keep a programming notebook for this class divided as described here.
          •   11/2 – 2 inch three ring notebook.
          •   Tabbed dividers purchased for each of the following sections:
              i.   Class Documents (style guide, libraries, etc.)

ii. Class Notes
iii. Graded programs
iv. Quizzes and Exams
v. Misc.

Style guide: This document serves as a standard for developing and presenting a program. The purpose of the guide is not to restrict your creativity. However, following the standards listed in the guide will greatly assist debugging, and provide for a familiar style for anyone reading or assisting with your code.

Course Web Site: You will be enrolled in this web site prior to the first evening of the class. Access this URL will be reviewed during the first lab. All documents handed out in class will also be posted on the class web site. If a document is misplaced, please refer to this site for a new copy. Also, quizzes and surveys may be placed on this site. Updates to the class and tips for programming will be placed on this web page. Check this site each night.

Study Buddy: Exchange phone numbers/e-mail addresses with two classmates on the first meeting of class. I will make the assignments. Support each other with studying and checking on class assignment.

Quizzes and Exams: These challenges are designed to evaluate your understanding of the fundamental principles discussed in the textbook and during the class presentation. They are to reinforce and focus the student's effort. The quiz and problems will be very similar to the homework assignments. Ultimately, as with all we do, these quizzes and tests serve to assist learning the topics of the course. Anticipate a short quiz prior to the presentation of each class lecture. If you have questions regarding a topic, after the exam or quiz is reviewed, let's discuss the content. We will have three exams (approximately 50 minutes each) during the course. The last exam, given during finals week, will be a comprehensive exam.

What is a Tidbit?
A Tidbit is the student's opportunity to investigate and explain a new technology, feature or application in an area relating to the topic of the course. Explaining the new modulation schemes for copper wiring would be an excellent Tidbit. Also, emerging applications of IT in supporting businesses or education is also and excellent Tidbit. Please check the schedule for the Tidbit assignments and come to class prepared to discuss your Tidbit. At a minimum, explain the new topic fully and provide an understanding to the application or value of the new topic. We will discuss methods to remain aware of current events and technologies, providing a stream of information from which to select Tidbits.

Programming Assignments:
(1) All programming projects are to be individual projects, created according to the Style Guide description, and must represent the student's own work.
(2) Programs must be developed and constructed based upon the **individual effort** of each student. Viewing the code of another student during the development of your program is not allowed. You are encouraged to seek help additional information regarding syntax, algorithm development and an understanding of concepts. However, viewing shared code is prohibited for two reasons. First, once a coded implementation is viewed, it is extremely difficult to develop your own solution and the student will not progress towards an intrinsic understanding of the program development process. Two, sharing code is plagiarism is equivalent to copying answers on an exam.
(3) It is very important to stay up to date regarding class reading and class programming projects. Programming and lab assignments are due on the date indicated (please check the course web site if you have any questions regarding the specific due date). Note: We encourage personal excellence and accountability: The assignments are due **before** the date/times provided. There

is no credit awarded for assignments turned in late, or for programs that do not compile. Please let me know as soon as possible if you have any questions or concerns. Start programming **early**.

Course Prep:
At the end of class each evening I will summarize the concepts covered in that particular class and provide the reading to be done prior to the next class session. Please complete the prescribed reading **before** the class session.

Grading: The course grade is computed as follows:

<u>**Points Available for Each Type of Assignment:**</u>
Quizzes:	10 points for each quiz (approx 20-25 quizzes, 5 questions each)
Exams:	300 points (3 exams)
Programming Projects:	20 points for each programming project
Programming Labs:	10 points for each programming lab
Research Paper/Book Critique	50 points
Participation:	100 points (5 points awarded each week for full attendance)
Extra credit assignments:	45 points (three assignments of 15 points each) EC assignments are due on 28 Feb, 31 Mar and 30 Apr.

Numeric Score	Letter Grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 - 59	F

Participation: Regular participation in this course is vital. Regular participation is accomplished via turning in assignments, participating in class, asking questions and doing well on quizzes and exams. Each section builds on prior lessons and concepts....so, ask questions if a topic is fuzzy or unclear.

Cell Phones: Cellular phones, pagers, CD players, radios, and similar devices are prohibited in the classroom and laboratory facilities. Calculators and computers are prohibited during examinations and quizzes, unless specified. You are encouraged to stay in touch with your family and associate. However, to encourage a focused learning environment, please turn your cell phones OFF or to the vibrate setting while you are in the classroom. If a call must be made during the class period, <u>please leave </u>the classroom and conduct your conversation from a private location.

Recording Devices: Using a recording device (digital tape recording, still or moving images, etc.) in class is permitted only with the express written consent of the instructor.

Student Responsibilities:
(1) Be in the classroom when class starts, remain until the end of class, attend class regularly, and participate in class discussions and exercises.

(2) DO NOT work on the computer, use the printer or talk among yourselves when your instructor is lecturing or leading the class in a discussion or exercise.

(3) Be prepared for every class, read the appropriate material in the textbook before class time.

(4) Ask a classmate for information covered during your absence or tardiness.

(5) You are expected to turn in completed assignments at the beginning of class on the assignment due dates, or else they will be considered late. See above information regarding penalties for late work.

(6) You are expected to store all of your, and to maintain proper storage and hard-copy backups of all of your work. You should make a backup of your work at the end of each session. Never erase documents or until all evaluation on them is complete. LOSING OR DAMAGING your storage media is not considered a valid excuse for turning in late assignments.

(7) You are expected to keep the computer labs neat and clean. NO FOOD, DRINK, OR TOBACCO products are allowed in the labs. All trash should be thrown away before leaving the lab. All other policies, as posted in the computer labs, should be followed.

(8) Make sure your name, and exercise number appear in the upper-left corner. If an exercise has multiple sheets, then staple them together. Do not staple different assignments together. Disorganized assignments (pages out of order, mislabeled, unreadable, etc.) will receive a grade of zero. If there are multiple sheets are to be handed in, sequence them according to the order you were told to print them in the exercise.

Grading Expectations:
A's: Outstanding, Superior. Written work is presented using standard English and demonstrates a mastery of the subject matter for the college level. Meets all course expectations promptly. Shows clear grasp of concepts and demonstrates ability to synthesize materials from both inside and outside the classroom. Participates regularly and materially in the classroom.

B's: Very Good. Clearly above average. Written work is presented using standard English with only a few minor flaws and demonstrates expertise in the subject matter for the college level. Meets course expectations promptly. Shows a grasp of concepts and demonstrates ability to relate materials from both inside and outside the classroom. Participates regularly and materially in the classroom.

C's: Good. Average. Student meets minimal expectations for the course. Written work is presented using standard English with minor flaws too numerous to overlook. Student follows directions, shows a reasonable grasp of the subject matter for the college level. Meets all course expectations promptly. Student also demonstrates ability to process materials from both inside and outside the classroom. Participates in the classroom.

D's: Below expectations. Below that which one would normally expect from a student at this level of a college career. Writing is marred by major mechanical problems. Exam performance fails to demonstrate a reasonable grasp of the material for the college level. Student fails to meet with professor. Student fails to participate appropriately in class.

F: Unacceptable. Written work consistently falls below college level. Writing is marred by major mechanical problems. Student fails to report to the Writing Center or other appropriate help. Student is consistently late in meeting course expectations.   The student shows little or no grasp of concepts and is unable to process or relate materials from inside and outside the classroom. Exam performance fails to establish minimal grasp of the subject matter for the college level. Student fails to meet with professor. Student fails to participate appropriately in class. Alternatively, regardless of the quality of a student's work, this grade may be assigned for failure to comply with attendance policy for the course, failing to submit papers, plagiarism, or cheating.