COURSE
ENG – 190 (F) Computer Applications in Engineering

DESCRIPTION/PREREQUISITE
FORTRAN, PASCAL or C with emphasis in engineering and scientific programming languages such as FORTRAN and APT with emphasis on engineering problems encountered in design and manufacturing. Writing assignments, as appropriate to the discipline, are part of the course. 3 credit hours (150 minutes per week). The prerequisite is mathematics placement test or credit in Mathematics 207 and Engineering 131.

INSTRUCTOR INFO
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TEXTBOOK

CLASS SCHEDULE
Tue/Thr 11:00 a.m. – 12:20 a.m., R 815

OFFICE HOURS
Mon/Wed 12:50 p.m. – 3:30 p.m.
Tue/Thr 12:25 p.m. – 1:55 p.m.

TOPICS TO BE COVERED
Problems from different engineering disciplines (Electrical Engineering, Bioengineering, Chemical Engineering, Industrial Engineering, Mechanical Engineering, etc.) will be solved using MATLAB program, optimized for engineering and scientific calculations. Particularly the following topics will be covered:

• MATLAB Fundamentals
• Programming with MATLAB
• Roundoff and Truncation Errors
• Roots of Equations
• Linear Algebraic Equations and Matrices, Gauss Elimination
• Matrix Inverse and Condition
• Curve Fitting: Fitting a Straight Line
• Numerical Integration Formulas/Functions
• Odes: Initial Value Problems

HOMEWORK
Usually homework will be assigned every class period and it will be due at the next class period. Homework will be collected, checked, graded, and returned to you. Late homework will be penalized by reducing 20% from the nominal grade.
IN CLASS ASSIGNMENTS AND EXAMINATIONS
Occasionally we will have in-class assignments that will be checked and graded. There will be 2 full period examinations throughout the course. All tests and assignments will be cumulative which means they will contain material covered in all previous classes. If you miss an exam you will be given a score of zero and there will be no opportunity to make up a missed exam.

ATTENDANCE
It is a requirement of the Harold Washington College that attendance is taken every class session. It is your responsibility to be in every session of class and to be on time.

BLACKBOARD
We will be using the BLACKBOARD through the semester for different purposes. You need to establish your account on http://www.ccc.blackboard.com ASAP. Your ID number is (the first initial)+(the last name)+(the last five digits of your SSN). The password is the last four digits of your SSN. On the BLACKBOARD you will be able to check your grades and find the homework assignments.

GRADING POLICY AND SCALE
Your final grade in this course will be determined by the points that you have earned on the homework assignments, in-class assignments, and exams. The average score of homework will count for 20% of your final grade, the short tests will count for 20% of the final grade, and the 2 exams will count for 60% (30% each) of your final grade. Final grade in this course will be determined by the following grading scale:

91% – 100% A
81% – 90% B
71% – 80% C
61% – 70% D
< 61% F

LEARNING OUTCOMES
The course will follow a non-theoretical approach without formal proofs. After successfully completing the course will be able to:
• Use MATLAB functions and toolboxes;
• Write M-files and run them in MATLAB environment
• Develop algorithms for solving different engineering problems;
• Apply Numerical Methods (Integration, Differentiation, etc.) and code them in MATLAB programming language for solving engineering problems.

CALENDAR/ GRADE
Midterm Exam: __________________________/_________
Final Exam: __________________________/_________

DISCLAIMER
In the event that an issue occurs that is not covered in this syllabus, the instructor may use her own discretion to make a final decision concerning the issue.

I Wish You a Successful Semester!!!