ENGR-110 = Freshman Engr.   INSTRUCTOR = Dr. Duc T. Nguyen
                                         Office Hours = T+W+R; 12:30pm-1:30pm
==(3-week version)==   Room #1319 ECS Building
                                         Tel= 757-683-3761
                                         Fax= 757-683-5354
                                         Email= dnguyen@odu.edu

Date/Time = see ODU web site (http://www.odu.edu), or instructor's message

Room/Building = see ODU web site (http://www.odu.edu), or instructor's message

Required Materials = Prof. Nguyen's lecture notes
                      http://www.lions.odu.edu/~skadi002
                      (click ENGR-110; ==*3-week version*==)

Recommended Materials = " Introduction to Programming Concepts Using MATLAB "
                          By Autar Kaw, and Daniel Miller (Second Edition)

MODULE DESCRIPTION
This 3-week module has been designed to include specific topics and lectures
  (see TENTATIVE TOPICS/SCHEDULES for more details) to improve students'
  performance in creating engineering reports & presentation skills, to sharpen
  students' basic mathematical knowledge, to build-up students' confidence in
  using popular/useful mathematical software (MATLAB), to help students working
  effectively as team members, and to show students how real-life (Civil)
  Engineering problems can be solved by hands-on laboratory experiments, and/or
  by analytical/mathematical skills, and/or by the computer software.

OBJECTIVES/OUTCOMES OF THIS (3-week) MODULE
 (a) providing capabilities to prepare/create/deliver GOOD PRESENTATIONS
 (b) encouraging utilization of desktop/laptop/workstation COMPUTERS
 (c) improving ENGINEERING/MATHEMATICAL SKILLS v.i.a. MATLAB computer software
 (d) performing hands-on LABORATORY EXPERIMENT(S) to validate analytical
      results for Civil Engineering structures/members/components.

 (e) the ==outcomes== for the above objectives (a, b, c, d) will be measured by the
     combination of individuals' homework assignment and teams' project
     presentations

GRADING POLICY
 (a) attending classes (lectures/recitations) = approx. 15 points
     applying to each student
 (b) laboratory (using MATLAB, ...)   = approx. 35 points
     applying to each student
 (c) final (hands-on) project(s) presentations = approx. 50 points
     applying to each TEAM (approx. 3-4 students)

     ====>> typing & presenting "engineering articles"
     ====>> conducting your own (hands-on) laboratory experiments to find 2-D
            centroids, and also verifying your experimental results with
            MATLAB computer software (for integrations etc...)

Week #1

Real-Life Civil Engineering Structures/Cross-Sectional Shapes' Centroids, and Computer Aided Solutions.

Teams' Project #1: Typing/Writing Engineering Reports (mathematical symbols, figures, tables, equations, sub-scripts, super-scripts).

   Due date: 2 weeks later

Individual Assignment #1: Derivative/Integral of a given function; matrix operations by MATLAB Software.

   Due date: 1 week later

Week #2

Teams' Project #2: Computing the centroid locations of complex 2-D cross-sectional shapes, by:

 (a) Using hands-on laboratory experiments.
 (b) Using MATLAB computer software (for integrating a given function)

    Due date: 1 week later

Analytical Derivatives and Anti-derivatives (integrations) of given functions: Definitions/Notations; Examples; Rules of Derivatives/Anti-Derivatives.

Additional MATLAB examples/commands

Week #3

STUDENTS' PROJECT PRESENTATIONS

(a) Teams' project #1 presentation
(b) Teams' project #2 presentations

Remarks
To encourage students within each TEAM to learn from each others,
and to attend class lectures/recitations regularly, the instructor
will "randomly" pick 1 (or more) students from each team (on the
   presentation date) to make a presentation on behalf of his/her entire team.