Expected Educational Results:
As a result of completing this course the student should be able to:
1. Navigate and use Matlab environment to write scripts in solving simple science/math/engineering problems.
2. Create vectors, store, retrieve and manipulate data in vector form.
3. Apply conditionals, iteration and built in functions to solve problems.
4. Know encapsulation and write new functions.
5. Know and apply structure arrays, manipulate character strings.
6. Understand recursion and apply it to dynamic data structure stacks, and trees.
7. Know plotting in 2-d and 3-d with shading/lighting.
8. Know and apply matrix operations for plots.
9. Understand and use file I/O operations.
10. Create and manipulate images in color.
11. Apply interpolation, curve fitting, integration and differentiation to problem solving.
12. Know Big O notation for algorithms, sorting algorithms (no coding).
13. Understand object oriented concepts, classes, dynamic data structures queues, linked lists, stacks, Binary Trees and Binary Search trees (optional).

General Education Outcomes:

I. This course addresses the general education outcome of communication in the following manner:
   1. Develop reading comprehension skills by reading the text and course materials.
   2. Listening skills through lectures and discussion in problem solving in class and during in class lab exercises.
   3. Develop reading and writing skills through class assignments, homework, and algorithm development. Students are expected to provide small written programs, to show their understanding of computing skills. Students also provide solutions to problems in the form of logical sequence of instructions.

II. This course addresses GEO relating to problem-solving and critical skills in very direct manner. Students are expected to enhance their problem-solving skills in math/science/engineering through programming assignments. Students are expected to obtain a viable practical solution to such problems by critical thinking process.

III. This course addresses the GEO relating to mathematical concept usage and scientific inquiry in multiple ways. Students apply physics/math based solutions to problems and test application under a variety of conditions by programming. An important aspect of the course is to apply scientific inquiry to determine the limitations and the practicality of solutions to simple engineering problems.

IV. The course addresses the GEO relating to organization and analysis of information using a computer directly by using Matlab, as a programming language designed specifically for solving engineering problems on computers.
Clarkston campus:

Amit Cholkar:

Q1: Assesses Matlab concepts and programming knowledge.
Q2: Assesses logical operations in Matlab.
Q1: 100% of the students scored more than 70% on this question
Q2: 33.33% of the students scored more than 70% on this question

Comments:
- The assessment questions were the part of the final exam and it contained 5 questions in total
- The results are within the norms expected for question 1.
- The results were not as expected for Question 2. More problems will be solved in class and as graded homework’s to see if the student performance improves.

The overall assessment results reflect the EEOs were achieved to a satisfactory level

Prepared by: Anant Honkan