Space Visions Congress

Seminar: MatLab Script and Functional Programming
When: Thursday April 26, 2007 8:00 a.m. to 12:00 a.m
Where: University of Central Florida Solar Energy Center (FSEC), 1519
Clearlake Road, Cocoa, Florida
Instructor: Ali Shaykhian

Space Visions Congress is sponsored by the Canaveral Council of Technical Societies
(CCTS). CCTS is a voluntary, not-for-profit association of engineering, technical, and scientific
societies that support memberships who live and work along Florida's Space Coast.

MatLab Script and Functional Programming: MatLab is one of the most widely
used very high level programming languages for scientific and engineering computations.
It is very user-friendly and needs practically no formal programming knowledge.
Presented here are MatLab programming aspects and not just the MatLab commands for
scientists and engineers who do not have formal programming training and also have no
significant time to spare for learning programming to solve their real world problems.
Specifically provided are programs for visualization. The MatLab seminar covers the
functional and script programming aspect of MatLab language.

Specific expectations are:

o Recognize MatLab commands, script and function.
o Create, and run a MatLab function
o Read, recognize, and describe MatLab syntax
o Recognize decisions, loops and matrix operators
o Evaluate scope among multiple files, and multiple functions within a file
o Declare, define and use scalar variables, vectors and matrices.

Detail Outline
Basic MATLAB Concepts
MatLab command, script, and function
First MatLab program, using the editor, and run a program
M-file Programming
Functions, program statements
Operators, arithmetic, relational, conditional, and matrix operators
The for loop, the while loop
Functions, calling functions, function return value
Passing arguments to functions
Data storage and manipulations
Simple data, Vector and matrix
Graphics, annotating plots
Animations
File I/O with MatLab