ECON 890 - 02 (2257)
Special Topics in Economics: MATLAB

Summer 2013

Instructor: Joe Mazur
Office: 2106 Campus Drive, #102
Email: joe.mazur@duke.edu
Office Hours: By appointment

Class Location: Social Sciences 111
Class Times: Tu/Th 1:00pm - 3:30pm
Fr 1:00pm - 2:00pm

1 Overview

This summer module is a three-week intensive introduction to the mathematical software package MATLAB. Since I cannot hope to teach you everything you will need for research and coursework, my aim is to teach you enough to feel comfortable using and learning in MATLAB. By the end of this module, you will be

- skilled at importing, manipulating, and exporting matrices of data
- able to write useful and intelligible MATLAB code (*.m* files)
- knowledgeable about the most commonly used commands and techniques
- able to program and run fundamental estimation routines and utilize the output
- aware of common graphics tools and methods for displaying data and results
- able to use loops, functions, and built-in optimization routines effectively, including avoiding pitfalls
- comfortable using server-based resources
- equipped to learn independently
- aware of the wealth of publicly available resources (especially your peers!)

Time permitting, we will also compare MATLAB to Stata and learn a few tricks for using MATLAB with other programs.

2 Assessment

Grades will be determined by your average score from five problem sets. The problem sets are meant to pose real challenges faced by applied economists and train you to solve them. You must complete each problem set individually and turn in your own work for credit. Copying and pasting someone else's code is prohibited (and would discourage your own learning). That said, you are encouraged to consult with your classmates when you run into difficulty, and you are permitted to share your output and discuss your solution methods with each other. The goal is not only to get the right answer, but also to understand your code. For that reason, your peers should serve as references, not parallel processors.

During each class after a problem set is due, we will spend some time going over the solutions and answering questions. Problem sets will be graded by the instructor on the following scale:

4: Problem set is complete and mostly correct
3: Problem set is complete with errors or mostly complete and mostly correct
2: Problem set is complete with many errors or barely complete and mostly correct
1: Problem set is completely incorrect or barely attempted
0: Problem set is not turned in on time

3 Class Schedule

Class 1	Tues, July 23	intro - syntax - *.m* files - matrices - loops
	Wed, July 24	*PS 1 due @ 11:59 P.M.*
Class 2	Thurs, July 25	data I/O - functions
Class 3	Fri, July 26	debugging
	Mon, July 29	*PS 2 due @ 11:59 P.M.*
Class 4	Tues, July 30	functional optimizers
	Wed, July 31	*PS 3 due @ 11:59 P.M.*
Class 5	Thurs, August 1	graphics
Class 6	Fri, August 2	challenge day
	Mon, August 5	*PS 4 due @ 11:59 P.M.*
Class 7	Tues, August 6	inference
Classes 8 and 9	Thurs, August 8	exporting - extras
	Sun, August 11	*PS 5 due @ 11:59 P.M.*