OSM Lab Boot Camp Topic Schedule: 2017

University of Chicago, Saieh Hall, Room 247

June 19 to August 4, 2017

Week	Date	Day	Math Lectures (8:00-9:50am) Topic	Instructor	Econ Lectures (10:00-11:50am) Topic	Instructor	Computation Labs (8:00am to noon) Topic	Instructor	Lunch Speaker (noon to 1:30pm) Topic	Instructor
	19-Jun	Mon	Introduction	Sargent	Overlapping generations	Evans				
	20-Jun	Tue					Python standard library, functions,			
1	21-Jun	Wed	Inner product spaces		Overlapping generations	Evans				
	22-Jun	Thu					Read in, reshape, describe data,			
	23-Jun	Fri	Inner product spaces		Overlapping generations	Evans			TBA	TBA
	26-Jun	Mon	Inner product spaces		Dynamic programming	Stachurski				
	27-Jun	Tue					Data visualization			
2	28-Jun	Wed	Probability theory		Dynamic programming	Stachurski				
	29-Jun	Thu					Scipy, stats, root finders, minimizers			
	30-Jun	Fri	Probability theory		Dynamic programming	Stachurski			TBA	TBA
	3-Jul	Mon	No classes		No classes		No classes			
	4-Jul	Tue	U.S. holiday, 4th of July		U.S. holiday, 4th of July		U.S. holiday, 4th of July			
3	5-Jul	Wed	Spectral theory		Firm Dynamics	DeBacker				
	6-Jul	Thu					Complexity, sparse matrices, SVD			
	7-Jul	Fri	Spectral theory		Firm Dynamics	DeBacker			Open Source Policy	Matt Jensen
	10-Jul	Mon	Convex analysis		Firm Dynamics	DeBacker				
	11-Jul	Tue					LU, QR decompositions, eigenvalue			
4	12-Jul	Wed	Convex analysis		Macro Financial Modeling	Tsyrennikov			TBA	Lars Hansen
	13-Jul	Thu					numerical derivatives, integration			
	14-Jul	Fri	Convex analysis		Macro Financial Modeling	Tsyrennikov				
	17-Jul	Mon	Unconstrained optimization		Macro Financial Modeling	Tsyrennikov				
	18-Jul	Tue					Large data methods, distributed I/O,			
5	19-Jul	Wed	Unconstrained optimization		DSGE modeling	Phillips				
	20-Jul	Thu					Machine learning			
	21-Jul	Fri	Linear optimization		DSGE linear approximation solutions	Phillips			TBA	TBA
	24-Jul	Mon	Linear optimization		Perturbation methods, higher order	Phillips				
	25-Jul	Tue					Machine learning			
6	26-Jul	Wed	Linear optimization		Filtering and cyclicality	Phillips				
	27-Jul	Thu					HPC/Parallel computing	Scheidegger		
	28-Jul	Fri	Nonlinear optimization		Structural estimation: MLE	Evans			TBA	TBA
	31-Jul	Mon	Nonlinear optimization		Structural estimation: GMM	Evans				
	1-Aug	Tue					HPC/Parallel computing	Scheidegger		
7	2-Aug	Wed	Nonlinear optimization		Structural estimation: SMM	Evans				
	3-Aug	Thu					HPC/Parallel computing	Scheidegger		
	4-Aug	Fri	Concluding lecture: All homework due		Concluding lecture: All homework due		Concluding lecture: All homework due			
			19 lecture periods	32 hours	19 lecture periods	32 hours	13 lab periods	52 hours		

Computational set up: Students should have completed basic Python, git, and LaTeX tutorials before beginning the Boot Camp. Students should have the Anaconda distribution of Python

Coursework Prerequisites:

Math: Linear algebra, multivariable calculus, real analysis
Economics: Core undergraduate microeconomics (calculus based, constrained optimization)
Statistics: Econometrics, probability theory
Computation: Some experience (coursework or other) programming in a full-scale programming language

Tutorials and Python labs to complete before camp begins:

LaTeX tutorial
Git and GitHub.com tutorial
Install Anaconda distribution of Python
Beginning Python lab notebooks