Week 1:

1. The heterogeneous agents model in steady state.
2. Stylized facts on inequality.
3. Exercise: Learning the Matlab environment.

Week 2:

1. Optimal income taxation.
2. Optimal social security system.
3. Exercise: Solve numerically Aiyagari economy.

Week 3:

1. A theory of firm entry and exit.
2. Financial frictions for firms and resource misallocation.
3. Exercise: Approximating Markov processes and Monte Carlo simulations.

Week 4:

1. Entrepreneurship and the wealth distribution.
2. Sovereign default: Arellano economy.
3. Exercise: Solve a model of entrepreneurial decisions and financial frictions.

Week 5:

1. Extending the model of sovereign default.
2. Consumer default.
3. Exercise: Properties of equilibrium in sovereign default economies.

Week 6:

1. Introduction to Fortran.
2. Exercise: Numerical solution to sovereign default.

Week 7:

1. Being smart in Matlab.
2. Midterm exam.
3. Exercise: Solution to Midterm exam.

Week 8:

1. Function approximation and numerical integration.
2. Root finding and minimization problems.
3. Exercise: Computing Chebychev polynomials and Gauss-Hermite method.

Week 9:

1. Further tools to solve the household problem.
2. Exercise: Endogenous grid points, projection method.

Week 10:

1. Wage risk and employment risk.
2. The law of one price and labor market frictions.
3. Exercise: Solve on the job search model.

Week 11:

1. Aiyagari economy with finite life.
2. Search models with finite life.
3. Exercise: Solve finite life heterogeneous agent model.

Week 12:

1. Calibration, GMM estimation, simulated method of moments.
2. Exercise: Estimate income risk in panel data.

Week 13:

1. Aggregate risk in the Aiyagari economy.
2. Exercise: Solve the Aiyagari economy with the Krusell-Smith algorithm.

Week 14:

1. Lumpy investment as driver of business cycles.
2. Exercise: Solve a business cycle model with lumpy-investment.