Tentative Outline

Week 1 – 2: Introduction to Excel—Simple Formulas, Summary Stats, & Analysis

- Basic formulas: row & column manipulation, dynamic cell references, lists, tables, and formatting, paste & linking values, & common keyboard shortcuts
- Conditional formulas: arithmetic, comparison, & reference operators, combined with IF statements, nested IFs, SUMIF, AND, OR statements
- Homework 1: Excel file; download, format, & make table summarizing CPS/IPUMS data

Week 2 – 3: Intermediate Excel—Cell/Multi-Cell Array Formulas, Filters, & Pivot Tables

- Text, date, & time manipulation: Find, search, len, and trim functions (+Left, right, & mid, upper & proper, text & value), text to columns & removing duplicates
- Pivot Tables: dynamic & advanced filtering options
- Multi-Cell Array formulas: tradeoffs in performance & flexibility
- Homework 2: Excel file; Use date/time formulas; clean, format, & graph BBD/NIPA data Filter, summarize, and graph the data using a Pivot Table & Chart

Week 3 – 4: Intermediate Excel—Data Visualization, Tables, & Lookup Functions

- Data Visualization: advanced charting options, linking tables, pivot tables, more charts
- Cell, List, Table References & Lookups: Vlookup, Hlookup, Index, Match, Match-Match, Index-Match-Match, Choose, Fuzzy Matching, Offset, & Indirect
- Homework 3a: Excel file; Index-Match-Match & Fuzzy Matching—names & addresses
- Homework 3b: Excel file; Offset & Indirect—combine, summarize, & graph PSID data

Week 4 – 5: Advanced Excel—Introduction to VBA programming & Scenario Building

- VBA & Excel Macros, Choose, data validation, goal seek & solver techniques
- What-IF analysis & scenario building, data tables & sensitivity analysis
- Homework 4a: Excel file; Automate downloading & summarizing using VBA macros. Write a custom VBA function—ex. estimate implied volatility from option prices
- Homework 4b: Excel file; Test for selection bias using probit model & What-IF analysis

Week 6 – 7: Advanced Excel II—Financial & Statistical Modeling in Excel

- Discounted cash flow models—XNPV, XIRR and/or Annuity modeling—PMT, IPMT
- Multivariate & logistic regression models—confidence intervals, SEs, etc.
- Animation, Interaction and Dynamic Excel Charts
- Project Final 1: Replicate paper summary statistics and graphics (described above)
- Project Final 2: Excel, Word, PowerPoint—Present analysis across multiple applications