**Course Format**

This in-person

**Software (Required)**

1. A Spreadsheet program (preferably MS Excel). You can access MS Office (Word, Excel and PowerPoint) through SJSU for free. Please take a look at the link below.
   https://ischool.sjsu.edu/post/microsoft-office

2. R and R Studio: The class will use a computer program called R to gain practical experience in econometrics. All students must have installed on their home machines free R and R Studio software or use RStudio Cloud (if you are unable to install R and RStudio on your computer).

**Course Requirements and Assignments**

**1) 1 Quiz and 4 Problem Sets (40% of your grade, 8% each):**

One Quiz based on H&A (Hyndman & Athanasopoulos) Chapter 1 and 4 problem sets. Each of these problem sets involves conceptual questions, empirical analysis and forecasting on R. They will be announced and posted on Canvas. The data for the problem sets will be posted on Canvas as well. Please submit assignments on Canvas on the day they are due. Assignments submitted after answers are distributed will receive no credit.

**2) Exams (30% of your grade, 10% each)**

There will be 2 Midterm exams and one Final exam. Midterm and Final exams will be announced and posted on Canvas.

Midterm 1 (Tue, 9/24) will cover H&A Chapter 1 and Chapter 2 and Bailey Chapters 3, 4 and 5. Exam will be assigned on Canvas. It will be a mix of true/false, multiple choice and short answer type questions. The Midterm will be available to you on Canvas from Tue, 9/24, 12am (midnight) through Tue, 9/24, 11:59pm. You will have to write and submit the exam on Canvas.
Midterm 2 (Thu 10/31) will cover H&A Chapters 3, 5, 6 and 7 and Bailey Chapter 13. Exam will be assigned on Canvas. It will be a mix of true/false, multiple choice and short answer type questions. The Midterm will be available to you on Canvas from Thu 10/31, 12am (midnight) through Thu 10/31, 11:59pm. You will have to write and submit the exam on Canvas.
Final Exam (Fri 12/13) will cover H&A Chapters 7, 8, 9, 10 and Bailey Chapter 13. Exam will be assigned on Canvas. It will be a mix of true/false, multiple choice and short answer type questions. Final Exam will be available to you on Canvas from Fri 12/13, 12am (midnight) through Fri 12/13, 11:59pm. You will have to write and submit the exam on Canvas.

**3) Forecasting Paper (30% of your grade)**

The structure of the research paper is described below. For the research paper, you will come up with your own research question, select your own data set and consider a possible model to explain your chosen variable. More specifically, you will select your own time series variable, collect data on that variable, determine whether or not it is stationary, and find the best-fitting model to explain the stationary version of your variable. You will then use that model to produce a forecast of the variable, and assess the accuracy of your forecast.
Then you will write a research paper to report your findings and explain the procedure that you used to obtain those findings.
The forecasting paper will have 3 components.

1) **Paper Outline (10 points):** The outline is required by Friday, October 18. The proposal should include
   What are you trying to forecast?
   Why the topic is interesting?
   How you will obtain data

**Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours.

| Week | Date | Topics, Assignments, Deadlines | Assigned Readings |
|---|---|---|---|
| 12 | 11/5 and 11/7 | Forecasting with ARIMA models | H&A Chapter 9 |
| 13 | 11/12 and 11/14 | Exponential smoothing<br>**Problem Set 4 due Fri 11/15** | H&A Chapter 8 |
| 14 | 11/19 and 11/21 | Dynamic regression models | H&A Chapter 10 |
| 14 | 11/21 | Dynamic regression models<br>**Rough Draft due Sunday Nov 24** | H&A Chapter 10 |
| 15 | 11/26 | Meetings to discuss rough drafts | |
| *15* | *11/28* | *Thanksgiving Holiday - Campus Closed* | |
| 16 | 12/3 | Meetings to discuss rough drafts | |
| 16 | 12/5 | Meetings to discuss rough drafts | |
| | | **Final Forecasting Paper due Monday, December 9 on Canvas by 11:59pm** | |
| **Final Exam** | **12/13 (Friday)** | **Friday, December 13 on Canvas by 11:59pm** | **Final Exam will cover H&A Chapters 7, 8, 9, 10<br>Bailey Chapter 13** |