Stat 6550 (Spring 2019): The Statistical Analysis of Time Series

Course Description

This class aims to develop a working knowledge of time series analysis and forecasting methods. Emphasis is on modeling methodology (identification, estimation, diagnostics, and updating) and forecasting. Experience is gained in the statistical theory so as to be able to analyze time series data in practice.

Prerequisites: Stat 6201 or Stat 6302 or Stat 6802; Stat 6450 or Stat 6950; or permission of instructor.

Instructor

Dr. R. Scott Linder (`linder.5@osu.edu`)
Office hours in Cockins Hall (CH) Room 205C: Monday 4–5:30pm, Wednesday and Friday 5:15–6:30pm.

Grader

Jiae Kim (`kim.3887@osu.edu`)

Class Meetings

Wednesdays and Fridays, 4:10–5:05pm in Journalism Building (JR) Room 274.

Classes may not be recorded. Some time before our first meeting each week note outline sets will be posted to the Carmen Canvas page. You can download them to a device, but anyway these will be provided in class as they're needed, and we'll use class time to fill in detail and discuss them. Also posted to the Carmen page will be the R commands that generated the material for notes. These will not be printed and distributed in class.

Textbook

Brockwell and Davis, Introduction to Time Series and Forecasting (2nd Edition),Springer, 2002.
Online access at Course Textbook Online.

A third edition of the textbook is available. Reading assignments and any problems assigned from the textbook reference the second edition, which is still readily available in used format, and is freely available online.

Evaluation of Course Grade

Homework	Midterm	Final exam
25%	35%	40%

Assignment grades and exam scores will be recorded on the Carmen page.

Computing

This class requires use of the statistical software package **R** . You can find information about downloading and getting started with **R** in the Course Documentation portion of the Carmen page. More

support for using **R** will be given in class and on the Carmen page, and class notes will provide examples necessary to work assignments.

Homework

Assignments will be due at the **beginning** of class on any due date. At this time, detailed solutions will be provided, so no late homework will be accepted. You are welcome to work together on the homework, but in doing so you must be an approximately equal contributor. More directly, **do not** copy any part someone's work. Each student must produce his/her own homework set to be handed in. **Electronic submissions are not permitted.** The grader for the course will not be expected to write detailed explanations for why a student solution has been penalized. Refer to the detailed solutions you'll be provided. Please do not approach the grader with questions about grading. Instead, discuss with the course instructor.

Assignment preparation rules: Put your name and the homework assignment number on the top right-hand corner of the first page. **Staple** (not paperclip) the pages together. Submit the problems in order, making sure that the computer output and discussion is placed together (do not put the computer output at the end of homework). Make it clear what parts of **R** output are relevant and how they answer the question posed. Above all, edit the output you submit: Remove the commands that didn't work, or long lists that take more than several lines.

Exams

There will be **one midterm** and **one final exam**:

Midterm Exam	Friday, March 1	4:10–5:05pm
Final Exam	Wednesday, April 24	6:00–7:45pm

You will need a basic calculator for exams, but you cannot use any tablet, laptop, any communicating device, or cellphone application (so you won't be required to use **R**). For the Midterm Exam you may use one page (standard size, 8.5" x 11", front and back) of notes. For the Final Exam you may use two such pages of notes. The midterm covers the material up to and including Friday, February 22. The final exam will cover all course material. There will be **no make-up** exams.

Academic misconduct

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Disclaimer

The instructor reserves the right to change assignment due dates or the date of the midterm exam, make changes to any assignment, or change the material covered in class. Every effort will be made to notify students to any changes with announcements in class and/or on the course Carmen page. Any

such announcement will supersede information in this syllabus. You are responsible for any information not obtained by not being in class for such an announcement.

Disability Statement

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.osu.edu/.