

22S:156
Applied Time Series
60 SH
8:30-9:20 a.m.
Spring 2012
Stramer

Instructor: Osnat Stramer, 370 SH, phone: 335-3182,
Email: osnat-stramer@uiowa.edu.

Office Hours: Monday 9:30-11:00 a.m., Wednesday 9:30-11:00 a.m. **or by appointment.**

Dept. Info: Prof. Luke Tierney, Chairman.
Department of Statistics & Actuarial Science, 241 SH
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ICON: [http:// icon.uiowa.edu/](http://icon.uiowa.edu/) Log in using your Hawk ID and Hawk I password.

WEB: Be sure to check out the book's web page at

<http://www.stat.uiowa.edu/~kchan/TSA.htm>

Professor Chan has provided R scripts for everything in the book. Copying from them saves a lot of typing and you can learn a lot about R by looking through the code provided.

Text: "Time Series Analysis with Applications in R" By Jonathan Cryer and Kung-Sik Chan. 2nd edition (October 17, 2008), published by Springer Verlag.

Course Coverage: most of the material in Chapters 1-11.

Computer Package: Statistical software's: We will mainly use R (GNU Splus) for statistical analysis will be available at the ITC in Schaeffer Hall. R can be freely downloaded from <http://www.r-project.org/> An R package called TSA has been specifically developed that implements almost all methods introduced in the book.

Prerequisite: 22S:131 (STAT: 3101), and 22S:152 (STAT: 3200) or 22S:164 (STAT: 5200).

Grading System

Assignments (15 %): Homework will be assigned nearly each Wednesday and due the next Wednesday.

Exam 1 (10%): The first exam is Wednesday Feb. 15 in class.

Exam 2 (20%): The second exam is Thursday March 22 from 5:00-6:30 PM.

Exam 3 (30%): The third exam is Thursday April 19 from 5:00-7:00 PM.

Exams are closed book and closed notes, except that you may use a "crib sheet"-one page (8.5 x 11) of notes written on both sides.

Final Exam (Project presentation): Each student is required to work on a project analyzing a real time series, and write a project report. You may work in a group of two. Each group will be required to do an approximately 10-minute (joint) presentation on the day of the final exam. Details about the exact time will be provided in a few weeks. The project report has to be submitted on the day of the final.

Project (25%): A real time series, of length 40, should be used for the analysis. A one-page proposal outlining the scientific questions to be addressed and the relevant techniques to be employed, with a separate listing of the data, have to be handed in during class on April 25. The final written report should include title and abstract, introduction, data characteristics, technical analysis with interpretations, summary and concluding remarks.

As an approximate guide, grades will be given as:

90-100: A
80-90: B
70-80: C
60-70: D
Below 60: F

Plus and minus grades will be given.

Resources: The Writing Center service offers twice a week tutoring, appointments, and online tutoring at 4 different locations on campus. Please see www.uiowa.edu/~writingc

Course Policies

Course attendance: Students are responsible for all material covered in the lectures.

E-mail Account: Every student in the class is required to check his/her UIowa e-mail often (every other day.)

INFORMATION FOR STUDENTS WITH DISABILITIES: I would like to hear from anyone who has a disability which may require some modification of seating, testing, or other class requirements so that appropriate arrangements can be made. Please see me as soon as possible.

COLLEGE OF LIBERAL ARTS AND SCIENCES POLICIES AND PROCEDURES:

This course is governed by the policies and procedures of the College of Liberal Arts.

These policies address

- * the administrative home of the course;
- * electronic communications;
- * academic fraud;
- * students with disabilities;
- * procedures for student complaints;
- * sexual harassment policy;
- * weather emergencies.

These policies can be found at

http://www.clas.uiowa.edu/faculty/teaching/new_policytemplate.shtml.