

STAT:6560 (22S:156) Applied Time Series Analysis
Spring 2015

1. Instructor: Kung-Sik Chan SH 263 335-2849 kung-sik-chan@uiowa.edu
office hours: MWF 2:30 - 3:30, or by appointment.
2. Department: Statistics and Actuarial Science
DEO contact information (Joseph B. Lang, 241 Schaeffer Hall, 335-0712, joseph-lang@uiowa.edu)
3. Time and location of class: 1:30P - 2:20P MWF 112 MH
4. Textbook: "Time Series Analysis with Applications in R" By Jonathan Cryer and Kung-Sik Chan. 2nd edition, published by Springer Verlag.

The objective of the present course is to introduce some statistical methods useful for analyzing univariate time series obtained from scientific studies with emphasis on forecasting and statistical inference. We plan to cover chapters 1 to 11 and other selected topics from the book, if time permits.

Statistical softwares: We will mainly use R (GNU Splus) for statistical analysis. R 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. The lone exception requires SAS.

5. Course requirements:

	date	percent
Homework		10%
Quizzes	1/30, 2/11, 2/23, 3/25, 4/6, 4/17	25%
Exam 1	3/6 (Friday)	25%
Exam 2	4/29 (Wednesday)	25%
Final (Project presentation)	TBA	15%

Homework must be handed in by the BEGINNING of the lecture on the due date. Late homework will be marked but NO CREDIT will be given. Each homework carries approximately equal weight and the one with the lowest mark will be dropped from the determination of the final grade. Discussion with fellow students on the exercises of the homework is allowed. However, each student must submit his or her OWN solutions.

There are five quizzes; each are about 15 minutes long. Exams and quizzes are closed book; however, you may have one page (8.5×11) of notes. Each student is required to work INDIVIDUALLY on a project analyzing a real time series, and write a project report. Each student will be required to do an approximately 5-minute presentation on the final exam date to be

determined by the UI Registrar. The project report including the data has to be submitted by the time of presentation, via email.

Project: A real time series, of length at least 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, has to be handed in during class on April 17. The final written report should be typed and include a one-page non-technical summary of the findings, followed by the background of the scientific questions, the body of technical analyses with interpretations, a conclusion and the listing of the data. Including graphics, the report ordinarily should not exceed 15 pages in length. Typed report has to be handed in by the time of presentation, via email

6. Grades: Your grade for this course will be assigned according to the following *approximate* scale:

90	to	100	A
80	to	89	B
70	to	79	C
60	to	69	D
0	to	59	F

This scale is not absolute, and the cutoff points may vary depending on the difficulty of the exams. Also, borderline cases may receive a + or -.

7. Students are expected to attend every class unless for documented reasons including sickness or unavoidable circumstances. See <http://www.clas.uiowa.edu/faculty/teaching/attendance.shtml> for the CLAS policies on attendance.
8. Internet Resources My home-page <http://www.stat.uiowa.edu/~kchan/S235.htm> provides some links to useful Internet resources related to our course.
9. Miscellaneous:

Administrative Home The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Student Academic Handbook.

Electronic Communication University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

Accommodations for Disabilities A student seeking academic accommodations should first register with Student Disability Services and

then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/sds/ for more information.

Academic Honesty The College of Liberal Arts and Sciences expects all students to do their own work, as stated in the CLAS Code of Academic Honesty. Instructors fail any assignment that shows evidence of plagiarism or other forms of cheating, also reporting the student's name to the College. A student reported to the College for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

CLAS Final Examination Policies Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

Making a Suggestion or a Complaint Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

Understanding Sexual Harassment Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety web site.