

22S:156 Applied Time Series Analysis
www.stat.uiowa.edu/~kchan/S156.htm
Spring, 2011

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office hours: M 9:30-10:30 a.m., F 9:30-11:30 a.m. or by appointment.

2. Department: Statistics and Actuarial Science
DEO contact information (Dale Zimmerman, 241 SH, 335-0712,
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3. 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.

4. Course requirements:

	date	percent
Homework		10%
Quizzes	1/28, 2/9, 3/11, 3/30, 4/11	25%
Exam 1	2/28 (Monday)	25%
Exam 2	4/22 (Friday)	25%
Final (Project presentation)	9:45 a.m. Friday, May 13	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 should 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 10-minute presentation on May 13. The project report has to be submitted on May 13.

Project: 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, has to be handed in during class on April 18. 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.

5. 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 –.

Extra Help

The Statistics Tutorial Lab, located in 202 CC, gives free tutorial assistance to students in 22S:2, 8, 25, and 39. In addition, several graduate

students have volunteered to independently tutor students in various 22S: courses at mutually-arranged times and fees. Please check the web site www.stat.uiowa.edu/courses/tutoring.html for tutoring details.

College of Liberal Arts and Sciences: Policies and Procedures

Administrative Home of the Course

The administrative home of this course is the College of Liberal Arts and Sciences, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic fraud or academic probation, and how credits are applied for various graduation requirements. Different colleges might have different policies. If you have questions about these or other CLAS policies, visit your academic advisor or 120 Schaeffer Hall and speak with the staff. The CLAS Academic Handbook also contains important CLAS academic policies:

www.clas.uiowa.edu/students/academic_handbook/index.shtml

Academic Fraud

Plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. Academic fraud is reported to the departmental DEO and then to the Associate Dean for Academic Programs and Services in the College of Liberal Arts and Sciences who deals with academic fraud according to these guidelines:

www.clas.uiowa.edu/students/academic_handbook/ix.shtml

Making a Suggestion or a Complaint

Students have the right to make suggestions or complaints and should first visit with the instructor, then with the course supervisor if appropriate, and next with the departmental DEO. All complaints must be made within six months of the incident.

www.clas.uiowa.edu/students/academic_handbook/ix.shtml#5

Accommodations for Disabilities

A student seeking academic accommodations first must register with Student Disability Services and then meet with an SDS counselor who determines eligibility for services. A student approved for accommodations should meet privately with the course instructor to arrange particular accommodations. www.uiowa.edu/~sds/

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit www.sexualharassment.uiowa.edu/ for definitions, assistance, and the full policy.

Reacting Safely to Severe Weather

The University of Iowa Operations Manual section 16.14 outlines appropriate responses to a tornado (i) or to a similar crisis. If a tornado or other severe weather is indicated by the UI outdoor warning system, members of the class should seek shelter in rooms and corridors in the innermost part of a building at the lowest level, staying clear of windows, corridors with windows, or large free-standing expanses such as auditoriums and cafeterias. The class will resume, if possible, after the UI outdoor warning system announces that the severe weather threat has ended.

Student Classroom Behavior

The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the Code of Student Life. When disruptive activity occurs, a University instructor has the authority to determine classroom seating patterns and to request that a student exit the classroom, laboratory, or other area used for instruction immediately for the remainder of the period. One-day suspensions are reported to appropriate departmental, collegiate, and Student Services personnel (Office of the Vice President for Student Services and Dean of Students). University Examination Policies

Missed Exam Policy

University policy requires that students be permitted to make up examinations missed because of illness, mandatory religious obligations, certain University activities, or unavoidable circumstances. Excused absence forms are required and are available on the Registrar web site.

www.registrar.uiowa.edu/forms/absence.pdf

Final Examinations

An undergraduate student who has two final examinations scheduled for the same period or more than three examinations scheduled for the same day may file a request for a change of schedule before the published deadline at the Registrar's Service Center, 17 Calvin Hall, 8-4 M-F, (384-4300).