STATISTC 697TS: Time Series Analysis and Applications
Spring 2017

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Office Hours: Tuesday 2:30 p.m. – 4:00 p.m.,
Thursday 2:30 p.m. – 4:00 p.m.
or by appointment

Lecture: Tuesday and Thursday 11:30 AM - 12:45PM, LGRT 219

Web Page: Announcements regarding office hours, homework assignments, exams and solutions will be posted on http://www.math.umass.edu/~daeyoung/Stat697TS

Recommended Text: Time Series Analysis and Its Applications: With R Examples, 3rd ed., Robert H. Shumway and David S. Stoffer.

Prerequisites: Probability and Statistics at a calculus based graduate level such as Stat 607 and Stat 608 (concurrent), a previous course on regression analysis covering multiple linear regression (e.g., Stat 505, BioEpi744, RESEC702) with some exposure to regression models in matrix form. Prior computing experience with R is desirable.

Course Description: This course presents the fundamental principles of time series analysis including mathematical modeling of time series data and methods for statistical inference. Topics covered will include modeling and inference for linear autoregressive time series models; i.e., autoregressive (AR) and autoregressive moving average (ARMA) models, (nonseasonal/seasonal) autoregressive integrated moving average (ARIMA) models, unit root and differencing, spectral analysis, (generalized) autoregressive conditionally heteroscedastic models, Kalman filtering and smoothing, and state-space models.
You will be expected to read sections of the textbook in parallel with topics covered in lectures, since important part of graduate study is to learn how to study independently.

Required Work: The required work for the course will consist of homework assignments, a midterm and a final exam.

Grading: The final course grades will be based upon:

Homework	35 %	
Midterm	30 %	TBA
Final (comprehensive)	35 %	TBA

Homework:

1. Homework is due at the beginning of class on the due date.
No late hw will be accepted, as the solutions of the assignments will be posted on the course website after each due date.
Unreadable work, scratching out, etc. will not be graded.

2. You are encouraged to work homework either individually or in a group of up to two. If you decide to work as a group, you should write down the names of group members in the cover of the homework.

3. Your work will be evaluated on the method of solution and the ability to apply concepts, rather than the numeric answer to the problem.

Exam: You are responsible for taking the midterm exam and the final exam at the scheduled time. Do not make travel plans that may conflict with the final date before knowing when the exam is scheduled for.

Course Policies:

1. If you have a University-approved conflict with any of the exams, you must let me know **at least one week** before the exam. A conflict exam will be scheduled to take place just before or just after the regularly scheduled exam.

2. Make-up exams will only be given for legitimate, documented reasons (e.g., serious illness, injury, or death in the family) and with approval before the exam occurs.

3. Attendance to each class meeting is required and beneficial. Students are responsible for all announcements and supplements given within each lecture and/or via course email.

4. Any objections to the homework grading, the midterm or final grading should be directed to the instructor. All requests will be considered by the instructor and the student will be notified if a grade change occurs.

Add & Drop: Last day to add/drop a course with no record is scheduled 02/06/2017.

Late Drop: Last day to Drop with "DR" (Graduate) is scheduled 03/06/2017.