**STT 844 Time Series Analysis**

**Time**: MWF, 8:00 – 8:50 am

**Instructor**: Dr. Paul Anderson

**Email**: panderson@albion.edu or ande1126@msu.edu

**Textbook**: Brockwell and Davis, **Introduction to Time Series and Forecasting**, 3rd Edition,

 Springer-Verlag, New York, 2016.

**Coverage**: We will cover selected sections of Chapters 1-3 and 5-7, and 10.

**Prerequisite**: STT 442

STT 844 is a masters level graduate course on time series analysis, theory and applications. The learning objective is for students to master the basic principles and techniques for studying time series, including the following components: estimation of trend and seasonal components of a time series, stationary processes, ARMA processes, parameter estimation, forecasting with ARMA time series, and other forecasting algorithms.

**STT 844 is an excellent course for blending mathematics and statistics. The course requires quite a bit of work. Students are responsible for all material covered in lecture. It will be convenient for me to lecture from 8:00 until 8:50 am, MWF. You can watch the lecture live if you would like, or you can watch it later since I will put it on my Google Drive and then send you the video soon after the lecture.**

**Homework**: Homework will be assigned regularly and some of the problems will be computer problems using the ITSM2000 software package that you will have to download. To download, see Appendix E, pg. 387 of our text, and read the first paragraph: in browser type

<http://extras.springer.com>, choose the year 2016 and look for ISBN 978-3-319-29852-8. You then have to extract the zip files from the ITSM2000 folder. Now, please reread the first paragraph on pg. 387. All ITSM commands start by clicking on ITSM.exe. Homework is worth 50 points.

**Exams**: There are two exams, a midterm and a final, both worth 100 points.

Final Exam: Monday, April 26 2021 7:45am - 9:45am. This is a tentative date pending conflicts.

**Projects**: There will be two projects, both worth 50 points. These are similar to homework problems but use the software much more extensively.

Hence, the final grade will consist of 350 total points: homework 50 points, midterm 100 points, the final 100 points, project #1 50 points, and project #2 50 points.

Grades will be given roughly according to the following scheme:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percentage (%) | 92-100 | 86-91 | 80-85 | 73-79 | 67-72 | 60-66 | 51-59 | <51 |
| Grade | 4.0 | 3.5 | 3.0 | 2.5 | 2.0 | 1.5 | 1.0 | 0 |

**Important Dates**:

• 1/11/21 Introduction and background material

• 1/15/21 Close of open add period

• 1/19/21 First day of classes

• 2/5/21 End of 100% tuition

• 3/2 – 3/3/21 Break days, no classes

• 3/3/21 Middle of the semester, last day to drop with no grade

• 4/22 – 4/23/21 Study days, no classes

• 4/26 – 4/30/21 Final exams

**Learning Continuity Statement:** If you have to be absent for a prolonged time period, please discuss with me. Lecture notes, videos will be available. Deadlines for homework assignments may be changed depending on the circumstances.

Course Continuity Statement: An alternative instructor may continue this class in case I have to be absent. I will let you know in advance. Communications through e-mails should remain in place.

**ADA Statement**: The Americans with Disabilities Act requires that reasonable

accommodations be provided for students with physical, sensory, cognitive, systemic,

learning, and psychiatric disabilities. Please contact me at the **beginning** of the semester

to discuss any such accommodations for the course.