

**STA 482: Introduction to Time Series Analysis &  
STA 677: Advanced Topics in Data Analysis  
3 credits**

Pre-requisite: STA 352 or permission of instructor

***Textbook***

Required: *Introduction to Time Series and Forecasting* by Brockwell and Davis, Second Edition, Springer-Verlag

***Topics to be covered***

We will cover Chapters 1-3, 4 (only a few topics), 5, and 6. Specific topics to be covered include:

Examples of time series and objectives in time series modeling; estimation/removal of trend and seasonality; stationary and non-stationary processes; modeling and forecasting with *ARMA* processes; non-stationary seasonal and non-seasonal *ARIMA* models; introduction to the computer package ITSM (interactive time series modeling); ITSM software disk comes with your textbook. Both MINITAB and ITSM will be used to learn time series modeling

**A few extra topics such as Non-linear Time Series Models and Frequency Domain Analysis of Time Series may be covered for students registered in STA 677. These students will also be doing some extra problems on HW assignments and Exams. Also, their projects will be more extensive as compared to those of students registered in STA 482.**

***Course Objectives***

After completing this course, you should be able to

- Recognize trend and seasonality in time series data, and estimate/remove these components.
- Identify an appropriate stochastic model for the data.
- Apply a software tool and demonstrate validity of the selected model.
- Calculate appropriate forecasts and evaluate their goodness.
- Prepare a written report on the outcome of the data analysis.

***Grades***

Grades will be based on the following components:

Homework Assignments, Two Exams and Final Exam.

***Grading Scale***

90 and above	A- or A or A+
80 – 89	B-, B or B+
70 – 79	C-, C or C+
60-69	D-, D or D+
Below 75	F

***Attendance Policy***

You are expected to attend all classes but there is no formal attendance policy. You will be responsible for knowing the material covered during any lecture you happen to miss. Also, you will be responsible for knowing any announcements that may be made in class regarding exam schedules etc.

***Use of Blackboard***

Assignments and all major announcements will be posted on the blackboard site for the course. Make a habit of checking the site regularly. You will need to activate your UNCG computer account to be able to visit the blackboard website (<https://blackboard.uncg.edu>).

***Academic Integrity***

Students are encouraged to discuss solutions to assignments, but each student is expected to write-up his or her solutions independently. Copying other people's work is plagiarism and is an Honor Code violation. You are responsible for knowing and abiding by the university academic integrity policy.

***Disabilities***

If you have a documented disability and wish to discuss academic accommodations, please contact me as soon as possible