STT 2810 Syllabus - Fall 2015

Instructor: Dr. Alan T. Arnholt
Office: Walker Hall 340
Office Hours: 4:15-5:45 Tuesday, 4:15-5:45 Thursday, 12:15-1:45 Friday

Make an appointment to see me by clicking https://arnholtat.youcanbook.me/.

All questions related to the class should be asked by creating a post on piazza. If you send me a class related email, I will remind you to post class related questions on piazza.

Teaching Assistants:

- Holly Bernesser — Math Lab (Walker Hall 105) TBD
- Kyra Patel — Math Lab (Walker Hall 105) TBD
- Alexa Smith — Math Lab (Walker Hall 105) TBD

Course Description:

This course covers data management; descriptive statistics; inferential statistics, including testing one and two sample procedures; ANOVA; Chi-Square tests; simple regression; and multiple regression. All of the topics will be addressed through a student selected research question that will be answered using one of six large data sets.

Course Objectives:

1. Teach students to use a reproducible research work flow.
2. Improve the technology expertise of all students.
3. Students will learn to work with large data sets.
4. Students will learn to create and present graphs for both univariate and multivariate data.
5. Students will learn how to construct and test hypotheses.

Course Text:

The course will rely primarily on the text *Passion Driven Statistics (Light Weight)* also available on Rpubs. Students may find the excellent text *Reproducible Research with R and RStudio, Second Edition* by Christopher Gandrud helpful.

Course Grading:

50% of the course grade will come from 9 peer graded assignments submitted via CrowdGrader. Your grade for a peer evaluated assignment will be a combination of peer evaluations and an evaluation of your peer grading. The algorithm used to compute your grade is explained in this presentation. Grading rubrics and directions for each assignment are provided in the directory `CoursePacing` of the class repository. 15% of the course grade will come from your **Research Proposal**; 15% of the course grade will be for a poster each student will create and present December 1, 2015, in the Plemmons Student Union. The remaining 20% of the course grade will be for participation, largely tracked in piazza. The participation tracked in piazza includes questions asked on the forum, questions answered on the forum, etc. 25% of the participation grade will be for the completion of a pre-course and post-course survey. If you know you will be absent at any point in the semester for any reason, please let me know beforehand; and make sure to submit your work via CrowdGrader before the due date. Each time you come to class, you should hand me a 3 by 5 card before sitting down with your first and last name in the top left, the date in year-month-day format (2015-09-03) in the top right, with at least one question you have about the assigned material for that day, which will also contribute to your participation grade.

How To Get Unstuck

If you have a class related question, please ask your question on piazza. Your classmates may have the same question or may answer your question before either a TA or I can provide an answer. Well constructed questions will elicit answers more rapidly than poorly constructed questions. This video provides some background on asking questions. This stackoverflow thread details how to create a minimal R reproducible example. Please read How To Ask Questions The Smart Way by Eric Raymond and Rick Moen and heed their advice.

University Policies

This course conforms with all Appalachian State University policies with respect to academic integrity, disability services, and class attendance. The details of the policies may be found at http://academicaffairs. appstate.edu/resources/syllabi.
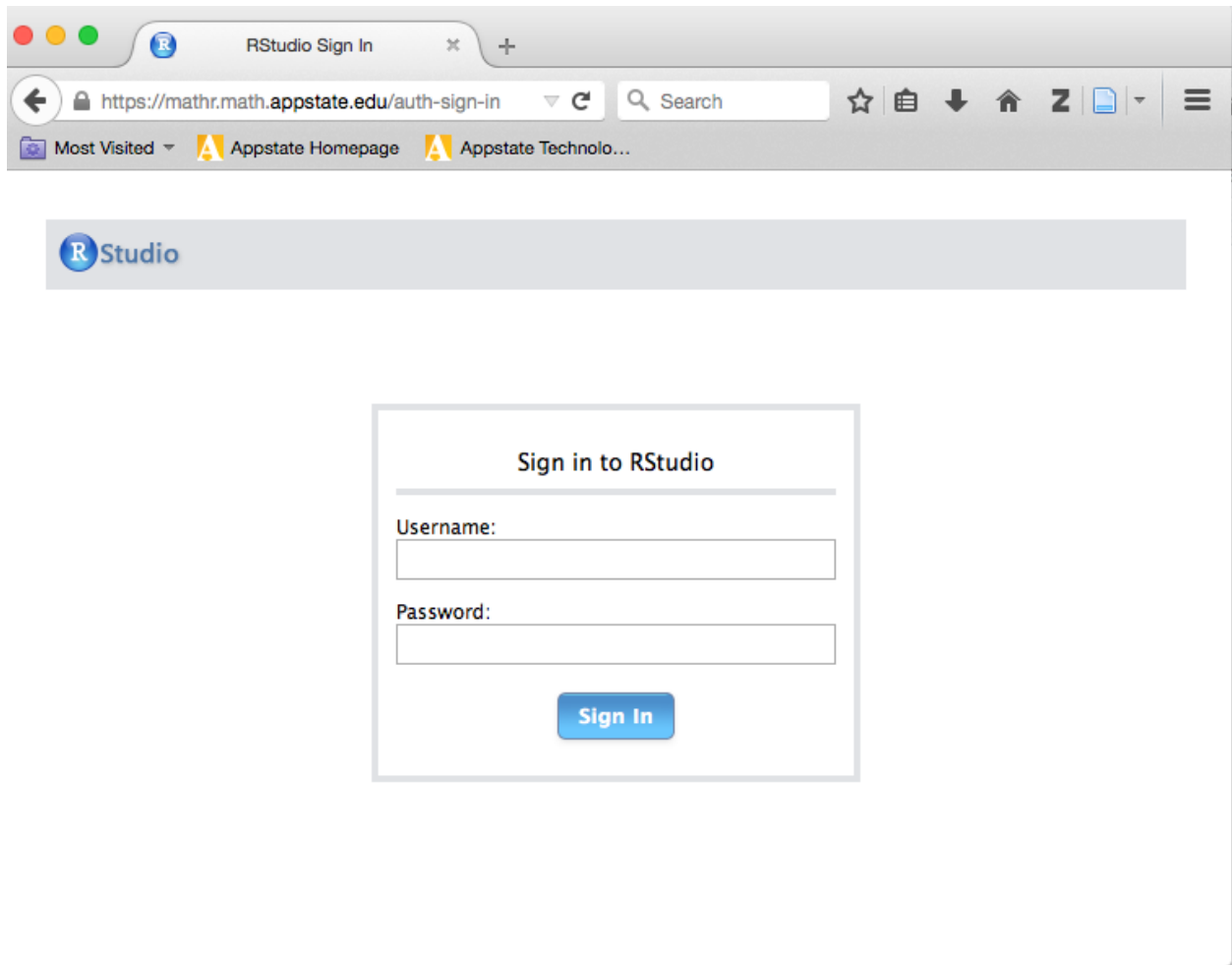
Typical Class Period

The first 30% of class will generally be lecture-oriented, where I will present material to supplement the reading and video assignments. To maximize your understanding of the lecture portion of class, please read the material assigned and watch the videos assigned before coming to class. The next 60% of the class, students will work on their individual projects. The last 10% of class will generally be a review of the material covered that day and a preview of the next class.

Computers and Software

This course will use the RStudio server (https://mathr.math.appstate.edu/) that has the programs listed below and more installed.

- R
- Git
- RStudio
- LaTeX

You must have an active internet connection and be registered in the course to access the server. To access the server, point any web browser to https://mathr.math.appstate.edu/. You will need to acknowledge the connection is unsecure and possibly add a security exception to your web browser. Use your Appstate Username and Password to access the server. A screen shot of the RStudio server is shown below.

If you have problems with your Appstate Username or Password visit IT Support Services or call 262-6266.