Statistical Tools for Applied Economics Research (ECON 4660)
Prerequisites: Economics 4650

Course description:

The fields of statistics and econometrics are rapidly changing. Increasing data availability along with powerful computing and advanced software allow researchers to address issues of statistical inference and analysis in innovative ways. This course provides students with practical knowledge and skills to take advantage of these new developments. The course is a prerequisite for Economics 4670, Economic Research in the Community.

Course learning outcomes:

- Develop skills related to modern multivariate statistical analysis
- Provide practical experience related to data analysis
- Develop skills in using advanced statistical software
- Develop skills in summarizing information directed to practical decision making

Course overview:

This course extends traditional econometrics by introducing modern multivariate statistical tools via real-world applications. Over the course of the semester, students will learn how to use computing software to address issues of large data, non-experimental methods, exploratory data analysis, and visualization. Special topics in the class include cluster analysis, cross validation, nonlinear system modeling, multivariate time series, and Bayesian statistics. All topics are presented in a hands-on manner and students will work through sets of examples using topic templates. Readings will largely be published PDFs in the "Files" section of the course and the course calendar will highlight appropriate readings. There are many good books that students find useful, a suggested introductory one is: *Data Science for Business* (Provost and Fawcett, ISBN: 978-1-449-36132-7 http://www.data-science-for-biz.com/ (Links to an external site.)).

During the semester the class will be involved in:

- Lectures and discussions
- Practical data analysis using real-world data
- Learning advanced statistical software and programming
- Learning how to generate publication quality output from statistical software including R & Tableau

Grading (1st term)

Semester assignments: 80% of grade

End of term assignment: 20% of grade

Grading (2nd term):

Project conceptualization: 15% of grade

Progress reports and presentations: 20% of grade

Final report: 25% of grade

Final presentation: 25% of grade

Team evaluations: 15% of grade

Americans with Disabilities Act (ADA) Statement

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services. (www.hr.utah.edu/oeo/ada/guide/faculty/)

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness - www.wellness.utah.edu; 801-581-7776.

Also...please be aware of Emergency Action Plan.pdf

Actions

Course Summary:

Date	Details	Due
Sun Sep 5, 2021	Assignment Introduce Yourself!	due by 11:59pm
Sun Sep 12, 2021	Assignment Hello World -- Here are my statistics.	due by 11:59pm

Date	Details	Due
Sun Sep 19, 2021	Assignment How many regressions are there?	due by 11:59pm
Fri Oct 29, 2021	Assignment Tableau Assignment 2	due by 11:59pm
Sun Dec 5, 2021	Assignment Trees are the answer.	due by 11:59pm
Sun Dec 12, 2021	Assignment I'd like to know more ...	due by 11:59pm
	Assignment Tableau 1	

Assignments are weighted by group:

Group	Weight
Semester Assignments	80%
End of Semester Assignment	20%
Total	**100%**