FO 8990 Research Method and Statistical Analysis

Instructor

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Office hour: by appointment

Class Schedule

To be offered in spring 2014;
Two meetings per week at Thompson Hall Annex;
Three lecture hours per week in total (with R programming demonstration in class);
No computer lab meeting; and
Specific meeting time and classroom to be determined on the basis of student needs.

Course Description in Catalog

Three hour lecture. Methodology related to research design, programming, and manuscript preparation for statistical analyses of social science data.

Course Objectives

The goal of this course is to teach graduate students how to conduct an empirical study. Data used are mainly related to social science. Students from other disciplines can work on their own data in class assignments and projects. Specific objectives are

1. Analyze research process from three perspectives: proposal and study design, programming and data analysis, and manuscript preparation;
2. Learn grantsmanship through examples and exercises;
3. Improve data analysis skills through software R; and
4. Examine techniques for manuscript preparation.

Textbooks and Materials

Sun, C. 2014. Empirical Research in Economics: Growing up with R. Draft. 300 pages.
Sun, C. 2013. *apt: Asymmetric Price Transmission*. R package version 1.3. Internet Site: http://cran.r-project.org/web/packages/apt.
Sun, C. 2013. *erer: Empirical Research in Economics with R*. R package version 1.4. Internet Site: http://cran.r-project.org/web/packages/erer.
Other reading materials will be assigned in class and posted on the course Web site.

Grading and Evaluation

Item	Percentage
Exercises	50%
Project A: Research proposal	20%
Project B: Data analysis	30%

Final grade determination will be based on the following scale:
A: 90.0-100%; B: 80.0-89.9%; C: 70.0-79.9%; D: 60.0-69.9%; F: < 60.0%

Attendance

The official code of class attendance for the University is documented in the Academic Operating Policy and Procedure (AOP 12.09). Upon registration, the student accepts the responsibility of attending all classes and doing any work the instructor may prescribe. When absence from class is essential, the student is responsible for providing satisfactory evidence to the instructor to substantiate the reason for absence. The student is also responsible for making arrangements that are satisfactory to the instructor in regard to work missed. These arrangements should be made prior to the absence when possible. Among the reasons absences are considered excused by the university are the following:
- Participation in an authorized university activity.
- Death or major illness in a student's immediate family.
- Illness of a dependent family member.
- Participation in legal proceedings or administrative procedures that require a student's presence.
- Religious holy day.
- Illness that is too severe or contagious for the student to attend class.
- Required participation in military duties.
- Mandatory admission interviews for professional or graduate school which cannot be rescheduled.

It is the student's responsibility to secure documentation of an illness from a physician. The documentation must contain the date and time the student sought treatment. Based upon the documentation, the instructor will decide whether makeup work will be allowed.

Academic Dishonesty
MSU Honor Code: "As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

The official code of student conduct for the University is documented by the *Bulldog Handbook*. Several examples are listed in the handbook that illustrates the kinds of activities considered to be "academic misconduct" by the University. These include, but are not limited to:
- Using unauthorized materials (crib notes, books, etc.) as an aid during an examination;
- Looking at or using information from another person's exam, report, or assignment;
- Providing assistance to, or receiving assistance from, another person in any manner prohibited by the instructor;
- Possessing or providing an examination or assignment, or any part thereof, at any time or in any manner not authorized by the instructor;
- Taking a quiz, examination, or similar evaluated assignment for another person; or utilizing another person to take a quiz , examination, or similar assignment in place of oneself;
- Submitting any course materials or activities not the student's own, allowing such a submission to be made for oneself, or making such a submission for another;
- Using the ideas, organization, or words from a book, article, paper, computer file, or other source in any assignment without giving proper credit following accepted citation rules (plagiarism).

Sanctions for academic misconduct include a grade of "F" in the course and suspension from the University.

Students with Disabilities: If a student has a disability and desires any assistance devices, services, or other accommodations to participate in any activities associated with this course, please contact me, or call 325-0928 during normal business hours, as soon as possible to discuss the necessary accommodations.

Spring 2014 Schedule

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No	Week	Meeting	Topic	Reading
1	Jan 13	1	Course contents and requirements	Syllabus
2		2	Overview of research flow	Chapter 1
3	Jan 20	1	Getting started with R	Chapter 2
4		2	Research area and type	Chapter 3
5	Jan 27	1	Anatomy of empirical study	Chapter 4
6		2	Proposal and design for empirical study (I)	Chapter 5
7	Feb 3	1	Proposal and design for empirical study (II)	Chapter 5
8		2	Reference and file management (I)	Chapter 6
9	Feb 10	1	Reference and file management (II)	Chapter 6
10		2	Sample study A: Logit model	Chapter 7
11	Feb 17	1	Object and function	Chapter 8
12		2	Data input and output	Chapter 8
13	Feb 24	1	Data manipulation (I)	Chapter 9
14		2	Data manipulation (II)	Chapter 9
15	Mar 3	1	Basic graphics (I)	Chapter 10
16		2	Basic graphics (II)	Chapter 10
17	Mar 10	1	**Break (no class)**	
18		2	**Break (no class)**	
19	Mar 17	1	Sample study B: AIDS model	Chapter 11
20		2	Flow control structure	Chapter 12
21	Mar 24	1	How to write a function (I)	Chapter 13
22		2	How to write a function (II)	Chapter 13
23	Mar 31	1	How to write a function (III)	Chapter 13
24		2	Advanced graphics	Chapter 14
25	Apr 7	1	Sample study C: APT model	Chapter 15
26		2	Procedures of creating a package	Chapter 16
27	Apr 14	1	Package design	Chapter 17
28		2	Manuscript preparation (I)	Chapter 18
29	Apr 21	1	Manuscript preparation (II)	Chapter 18
30		2	Going through a peer review	Chapter 19
31	Apr 28	1	FAQs for manuscripts	Chapter 20
32		2	Course summary	

Note: Meeting times to be determined; Schedule subject to changes.