EXST 7005: Statistical Techniques I
Thanos Gentimis
Spring 2018
Syllabus

Contact Information

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2. COURSE DESCRIPTION and CONTENT

2a. DESCRIPTION

The course covers basic concepts of statistical models and sampling methods, descriptive statistical measures, distributions, tests of significance, analysis of variance, regression, correlation and chi-square; Emphasis is given on applied research problems through computer software applications (SAS).

2b. PREREQUISITES

To enroll in EXST 7005, you must have earned a grade of C or better in MATH 1021, or an equivalent course. You can check with an advisor in your college or contact your instructor if you have questions about placement.

2c. REQUIRED MATERIALS

Textbook: We will be using the **Free online textbook:**

Statistical Methods 3rd edition by Rudolf J. Freund, Donna Mohr and William J. Wilson. A link to the book is also available on MOODLE.

2d. MOODLE

All grades are posted in MOODLE. You are responsible to verify that those grades are accurate. **You have one week after a score has been posted to resolve any grade concerns. You may contact Dr. Gentimis or the course TA. We will not consider these grading disputes at the end of the semester.**

Please note: Important course information is clearly communicated in this course guide and assignments and course materials are easily accessible through the MOODLE platform. If you cannot find your answer in the resources above, there is also a **discussion forum** available in MOODLE. Please use this to post questions and to supply answers to your fellow students. Your instructor and teaching assistant will check the discussion forum regularly.

2e. LECTURES

The lectures provide the main presentation of course material. To stay current with the course, we recommend attending the lectures and ask questions. **You should review your lecture notes before attempting homework.** You may contact your instructor or post questions on the course discussion board if you need clarification of a topic.

Students should print out the lecture note shells from the moodle page before coming to class, or buy the packet. This will make it easier to take notes and to follow the lecture.

The lectures are every Tuesday and Thursday morning 9:00 am-10:20 am, in 0232 J.C. Miller

2f. LABS

The class has a really strong lab component. Students are expected to spend approximately 2-4 hours at the lab each week working on their assignments.

The labs will be done in SAS, which you can purchase from the EXST department for $25 (check only). You can use SAS for free at labs 11 and 44 any time if they are open and not occupied by another class to complete your work. Check the door of the lab for a schedule of times that the lab is available. For problems with it you can use the online discussion tool on moodle or seek help during office hours from the instructor

or the TA.

Practically every week you will be required to turn in a lab assignment-report. Each lab report is worth 4 points and 8 out of 12 reports will count towards your grade. Lab reports are due at the beginning of the next lab. Since you can drop 4 lab assignments before it starts affecting your grade, **no late submissions are going to be accepted**.

Each lab report should start with a header containing your name, student number, lab section and assignment number. Each lab reports should provide your answers to any questions (when applicable) and appropriate SAS output (only the parts that are relevant to your answers). You should use an editor like Word to prepare the relevant portions of the output file for your report. Make your report neat, to the point, and concise.

You are allowed (in fact, encouraged) to work with other students while in the lab, **but the lab report that you submit must be your own work**.

Saving your work: You should save your program often. You may save your work on the lab machine but you will not necessarily have the same machine every week. Also, if disc space gets low the files may be deleted. It is strongly recommend that you save your program to a flash drive, some online repository or email yourself a copy.

Make sure you read the lab policies and requirements available on MOODLE. By attending the labs you agree to abide by those rules and policies. Remember, the instructor or the TA reserves the right to deny you access to the lab if you are found violating those rules.

2g. COURSE CALENDAR

Check the course calendar on MOODLE for due dates and plan your schedule accordingly.

2h. SUCCESS

It is critical that you keep pace with the course material as presented in the module for each week. Do not fall behind. We recommend studying with others, and an important resource to facilitate communication in the course. You should check the discussion board regularly, posting questions and answers for fellow students on MOODLE. The effort of asking questions and communicating ideas clearly, as well as the practice of writing solutions, are effective tools in helping you better understand Statistic's concepts. The instructor and teaching assistants will also check the discussion board regularly to answer student questions. It can also be very helpful to study with a group. This type of cooperative learning is encouraged, but be sure it leads to a better conceptual understanding. **You must be able to work through the problems on your own.** Even if you work together, **each student must turn in his or her own work, not a copied solution, on any collected assignments**.

In studying STATISTICS, you must be careful not to let a tutor, friend, or calculator "think" for you. Be sure that you can work problems completely on your own, without help, by the time of the exam.

Our hope is that through focused study and practice you will gain a real appreciation for the important concepts of Statistics and their applications. I want you to succeed in this class! But you must keep up with the course material and take the initiative to get help in time, before you get too far behind. Students with a positive attitude who are intellectually engaged in learning the material will get the most from the course.

2h. STUDENTS WITH LEARNING DISABILITIES

Students requesting class and exam accommodations must communicate with the instructor as soon as possible. Louisiana State University is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request.

Students with disabilities: If you are seeking classroom accommodations under the Americans with Disabilities Act, you are required to register with Disability Services in 115 Johnston Hall. Their phone number is 225-578-5919 and website is Office of Disability Services. To receive academic accommodations for this class, please obtain the proper Disability Services forms and meet with me at the beginning of the semester.

2i. ACADEMIC HONESTY

Remember that you committed yourself to academic honesty when you registered at LSU by agreeing to the Honor Pledge found here: Student Advocacy & Accountability

The Department of experimental statistics expects you to follow the Student Honor Code. We are bound by university policy to report any instance of suspected cheating to the proper authorities.

In addition, we remind you that lecture notes are the property of the University/faculty member and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduct Code.

3. GRADING AND COURSE ASSIGNMENT

3a. ASSIGNMENTS

i) This course has a strong lab component. Each week you will have to attend a (SAS) based lab and complete the corresponding homework assignments. Those will be graded by the TA on a weekly bases. There will be 12 assignments in total, but only the best 8 will count towards your grade. So you have the ability to miss 4 before it starts affecting your grade. If for any reason you miss a lab that will count as a drop. Each assignment is worth 4 points **There are no make ups for labs!**
ii) There will be 2 exams throughout the semester, the dates of which will be discussed in class the first week and will be available on MOODLE. The exams cannot be waived. If a make up is necessary, you need to contact me as soon as possible. Each exam is worth 24 points.
iii) A final project. The main object of this course is to teach you how to apply rigorous statistical ideas to concrete applied problems. The final project consists of use of some of the tools you learned in class on your own projects or a problem of your choice. More information about the project including a rubric and deadlines can be found on MOODLE. The project is worth 20 points.

So we have **8*4+2*24+20=100** points total.

3b. GRADING SCALE

Your course grade will be determined based on the following grading scale:

A	90% - 100%	C+	73% - 75.9%
A−	87% - 89.9%	C	67% - 72.9%
B+	84% - 86.9%	C−	64% - 66.9%
B	80% - 83.9%	D+	62% - 63.9%
B−	76% - 79.9%	D	57% - 61.9%
		F	less than 57%

There will be no additional curve in this course, and extra assignments for individual students to improve a grade are NOT possible.

4. THEMATIC UNITS COVERED

The course will cover the following ideas:

Introduction and Graphic Summary of Data
Numerical Summaries of Data
Elements of Probability
Probability Density Functions
Random Variables
Basic Distributions
Confidence Intervals
Hypothesis Testing
One and two sample Z-tests
t-test and applications
Proportions tests
ANOVA
Linear Regression
Categorical Data Analysis
Advanced Topics

Disclaimer: Although the syllabus is binding, I reserve the right to change it at any time to facilitate a better flow in the class provided I inform you about the changes in due time.