Syllabus for ECON 307 Section 01
Principles/Methods of Statistics
William & Mary
Spring 2020

Instructor: Ranjan Shrestha
Office: 460 Tyler Hall
Class Meeting: MWF 11:00 – 11:50am, Wren Building 2
Office Hours: TR 3:00 – 4:00pm; or by appointment
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Course Objectives

In this class, we will learn how to use statistics to answer questions and make inferences about the real world. The statistical methods include data collection, display, interpretation, and analysis. This class will cover descriptive statistics, probability, statistical inference, and regression analysis.

Course Material

I recommend students to have more than one book for this class. Gary Smith's *Introduction to Statistical Reasoning* offers nice explanations. This book is out of print and may not be in the bookstore, but you should be able to find it online. You should pair this book with the *OpenIntro Statistics* book that is more mathematics-heavy and is available free online (https://www.openintro.org/stat/textbook.php). There are other free texts on the web, such as Shaefer & Zhang (https://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=135), that you may also find useful. Lecture slides, readings, assignments, and useful web links will be available on Blackboard.

Computer and Software

Computing is a major component of this course, and there will be mandatory computing assignments. *Stata* and Excel will be the main software for this class. If you are an Economics major or intend to take ECON 308, you are highly encouraged to use *Stata*.

Stata is available on the campus network drive and in computing labs for free. You can also purchase *Stata* for six months or a year (this option might be preferable if you plan to take ECON 308). *Stata/IC* is sufficient for this course, but may not be for your future research. For details on purchasing *Stata*, see: https://www.stata.com/order/new/edu/gradplans/student-pricing/

Students are permitted to bring laptops to class. However, laptop usage during class is reserved only for academic purposes.

Homework

I will post homework assignments on Blackboard that you will be asked to hand in. You may work

in groups for these assignments, but each student must submit her own homework with her own interpretation and mathematical work. The last of these will be part of the final exam and will contribute towards your final exam score and not your homework score. Every assignment must be submitted in hard copies, unless stated otherwise. The lowest homework score will be dropped. Late submissions will not be accepted.

In addition to these graded homework assignments, I will also post problems from the textbook that you are expected to work on but do not have to hand in.

Exams and Grading Policy

There will be three exams: two midterms and a (2 hour) non-comprehensive final exam. The coverage of each exam will be announced in class prior to the exam. You will be provided with formula sheets and tables for all exams.

There will be no make-up exams. If you have to miss any exam, you have to obtain an appropriate documentation in advance and your exams will be reweighted. Please note that you will receive a zero for the exam that you miss without prior approval from me.

There will be 3-4 quizzes throughout the semester. The lowest quiz score will be dropped. There will be no make-up quizzes. If you have to miss a quiz, that quiz score will be dropped. If you have to miss more than one quiz, you have to obtain appropriate documentation in advance and your quizzes will be reweighted.

Item	Date	Weight
Midterm 1	Friday, Feb 28	25%
Midterm 2	Wednesday, Apr 1	25%
Final	Monday, May 4	35%
Quizzes	Announced in class	5%
Homework	Will be posted on Blackboard	10%

I am happy to discuss questions about grading on assignments and exams. You have one week after each graded material is returned to raise any issues about the grading.
The last date for students to add/drop the course on Banner is January 31. The last day to withdraw from the course is March 23.

Honor Code

You are expected to follow the William & Mary Honor Code. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. Please refer to the Student Handbook and the William & Mary Honor Council website for information regarding the Honor System.

Procedures for Accommodating Disabilities

William & Mary accommodates students with disabilities in accordance with federal laws and university policy. Any student who feels they may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2512 or at sas@wm.edu to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please visit www.wm.edu/sas.

Course Schedule[†]

Week	Chapter Assignment: Topic (Smith)	OpenIntro Chapters
1	Ch. 1: Introduction	Ch. 1.2
2	Ch. 2-3: Descriptive Statistics	Ch. 2.1-2.2
3	Ch. 5.1-5.2: Probability Analysis	Ch. 3.1-3.2
4	Ch. 5.3-5.4: Random Variables, Expected Values, Joint Probability Distributions, Covariance	Ch. 3.4
5	Ch. 5.5-5.7: The Binomial and Normal Distributions	Ch. 4.1, 4.3
6	**Midterm 1: Friday, Feb 28**	
7	Ch. 4,6: Sampling, Sampling Distributions, and Confidence Intervals	Ch. 1.3, 5.1, 5.2, 6.1, 7.1
8	*Spring Break*	
9	Ch.7: Hypothesis Testing	Ch. 5.3, 6.1.3, 7.1.5
10	Ch. 8, 10: Two-sample Tests; Chi-square Test on Contingency Tables	Ch. 6.2-6.4, 7.2-7.4
11	**Midterm 2: Wednesday, Apr 1**	
12	Ch. 11: Simple Regressions	Ch. 8.1, 8.2, 8.4
13	Ch. 9.3: F Distribution	Ch. 9.1
14	Multiple Regressions	Ch. 9.2
15	Multiple Regressions continued	Ch. 9.3
	Final Exam: Monday, May 4 (9:00am – 11:00am)	

[†]Although I'll try to follow the course schedule closely, deviations are possible and I'll adjust speed and coverage of materials as we proceed. The main purpose of the course schedule is to provide a guide as to what we will cover.