Introduction to Statistics
Summer 2022
Econ 206

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Materials

Required Materials:

This course requires the use of Mindtap for the textbook <u>Modern Business Statistics</u> (by Anderson, Sweeney, Williams, Camm and Cochrane), Cengage Publishing. *The subscription includes a digital version of the textbook and is a required component of the course.* All homework and excel assignments will use Mindtap and you will be able to access Mindtap through blackboard directly.

Day one access is included in this course so you will automatically have access to Mindtap and will be billed for the materials through your student account. To avoid this, you must drop the course before the drop date.

Resources:

All of the materials for the course are posted on blackboard. This includes the textbook readings, supplemental videos, practice questions, powerpoint slides, assignments and exams. These links will take you directly to the correct section on Mindtap. <u>There is no need to log in.</u> <u>to Mindtap directly.</u> You can access it through any of the blackboard links. Additionally, several helpful features are available. Please allow yourself time to explore these additional resources by clicking through the tabs on the course site (note taking aids, summary flash cards, chapter review (which includes the answers to supplemental questions)).

Instructor Lecture Videos

I have posted lecture videos for almost all of the concepts covered. In these videos, I work through problems, explaining the steps and formulas as I go along. These are designed to be viewed before you begin the assignment. To maximize effectiveness, I recommend pausing the lecture often to take notes. For excel assignments, step-by-step videos are provided.

Course Description

Description: An introduction to basic probability and statistics for business and economics. Topics include the collection and presentation of data, descriptive statistics, an introduction

to probability and probability distributions and statistical inference. *Prerequisite: ECON 202 or 203 and MATH 116 or higher.*

In this course, you will learn the basis for and use of statistics. Statistics deals with analysis of data: drawing out information from data, collecting and organizing data so that we can answer questions, and reaching conclusions from data analysis. While "statistics" intimidates many people, in reality it saves much time and energy (and headaches) once you learn how to use it properly. You can think of statistics like a code or a television signal descrambler – it unscrambles information that would otherwise be incomprehensible.

Statistics runs from the very simple to the very complex. It would take many semesters to cover statistics comprehensively. Relatively few people need to know it all, however, or even most of it. In this first course, we will start with the basics and cover the most commonly used components of statistics. You will use many of these components in upper-level course work or jobs. Undoubtedly, many of you will learn additional statistical methods in later courses. What you learn in this course should provide a good basis for understanding these additional methods.

Given that this is an online course, it is vital that you have access to reliable internet connection. Some of the course requirements are timed and internet connection or computer issues will not be grounds for excused extensions. In addition to reliable internet, this course requires significant self-discipline. The course is structured with the assumption that you are able to devote at least 10 hours per week to the course content and assignments.

Course Objectives

After successful completion of the course, students should be able to:

1. Demonstrate knowledge of fundamental statistical concepts and some of their basic applications

2. Know how to organize, manage and present data

3. Use and apply a wide variety of statistical methods

4. Understand probability distributions and their applications

5. Understand sampling theory and corresponding sampling distributions

6. Understand statistical inference, including confidence intervals and hypothesis testing

Grading

Category	Weight (% of Course Grade)
Homework and Excel Assignments	20%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Exam 4	20%

There will be 28 graded homework and excel assignments worth 20% total and 4 exams worth 20% each (80% total). ***I will be dropping your lowest 3 excel assignments for a total of 9 homework assignments and 16 excel assignments (even though 19 excel assignments are provided). I will not be dropping any homework assignments.*** I have divided the material into 4 units with an exam at the end of each unit. Under the content tab on blackboard, you will find links to all resources and assignments for each unit.

Excel and Homework Assignments

The 28 assignments are divided between homework assignments (9) and excel assignments (9) and are all equally weighted after the three lowest excel assignments are dropped. Many of the statistical procedures you will learn will be much easier and faster to complete in excel. This is not intended to be an excel course so all excel concepts have an accompanying 5-10 minute video tutorial and step-by-step questions which will take you through the procedure. You are encouraged to use excel for any of the concepts covered in these tutorials. Mastering the procedures in excel will not only allow you to solve the quiz and exam problems much more quickly, but is also a relevant skill for solving real world problems. You are welcome, but not required, to use any additional excel functions available for the assignments and exams.

There is one homework assignment per chapter and the excel assignments vary by chapter (since some topics lend themselves more naturally to using excel). The best course of action is to complete any excel assignment after you have read the chapter but before completing the homework for that chapter. If you attempt the excel assignment before reading the chapter, the concepts may be quite confusing and the material may be difficult to retain. If you wait until after you complete the homework to do the assignment, you may find yourself manually computing a tedious calculation that could have been done quickly in excel. Even though I drop 3 excel assignments, I recommend completing these to make homework and exam questions easier.

Exams

Exams will be administered at the end of the unit and will cover material from that unit only. **The exams will be open 8am-8pm on the exam date.** Any portion of the exam not submitted by the deadline will be counted wrong in your exam score. Once you have opened an exam, you must complete it in one sitting. The exams will be timed and will be a mix of work-through problems and conceptual questions. If excel is required, there will be an open exam question where you submit your excel file showing your work.

The due dates for the assignments and exams are below. All homework and excel assignments are due the day before the exam for that unit.

Unit 1
Chapters 1 and 2: Assignments Available May 6 - May 11
Exam 1: Thursday, May 12

Book Chapter	Assignment	Due Date
Chapter 1	Excel #1	Wednesday, May 11
Chapter 1	Homework 1	Wednesday, May 11
Chapter 2	Excel #2	Wednesday, May 11
Chapter 2	Excel #3	Wednesday, May 11
Chapter 2	Homework 2	Wednesday, May 11
Chapters 1 and 2	Exam 1	Thursday, May 12

Unit 2
Chapters 3 and 4: Assignments Available May 6 - May 16
Exam 2: Tuesday, May 17

Book Chapter	Assignment	Due Date
Chapter 3	Excel #4	Monday, May 16
Chapter 3	Excel #5	Monday, May 16
Chapter 3	Excel #6	Monday, May 16
Chapter 3	Excel #7	Monday, May 16
Chapter 3	Homework 3	Monday, May 16
Chapter 4	Excel #8	Monday, May 16
Chapter 4	Homework 4	Monday, May 16
Chapters 3 and 4	Exam 2	Tuesday, May 17

Unit 3
Chapters 5 and 6: Assignments Available May 6 - May 22
Exam 3: Monday, May 23

Book Chapter	Assignment	Due Date
Chapter 5	Homework 5	Sunday, May 22
Chapter 6	Excel #9	Sunday, May 22
Chapter 6	Homework 6	Sunday, May 22
Chapter 7	Excel #10	Sunday, May 22
Chapter 7	Excel #11	Sunday, May 22
Chapter 7	Homework 7	Sunday, May 22
Chapters 5, 6 and 7	Exam 3	Monday, May 23

Unit 4
Chapters 8, 14, 15: Assignments Available May 6 - May 26
Exam 4: Friday, May 27

Book Chapter	Assignment	Due Date
Chapter 8	Excel #12	Thursday, May 26
Chapter 8	Excel #13	Thursday, May 26
Chapter 8	Excel #14	Thursday, May 26
Chapter 8	Excel #15	Thursday, May 26
Chapter 8	Homework 8	Thursday, May 26
Chapter 14, 15	Excel #16	Thursday, May 26
Chapter 14, 15	Excel #17	Thursday, May 26
Chapter 14, 15	Excel #18	Thursday, May 26
Chapter 14, 15	Excel #19	Thursday, May 26
Chapter 14, 15	Homework 9	Thursday, May 26
Chapters 8, 14, 15	Exam 4	Friday, May 27

For each chapter, I recommend the following course of action:

1. Read the chapter and view the lecture videos (taking notes).

2. Complete any excel assignments for the chapter.

3. Complete the homework.

4. After completing all of the assignments in the unit, allow yourself time to review your notes and practice homework questions before taking the timed exam.

WKU's Disability Accommodation Statement

In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact *Student Disability Services.* The phone number is 270-745-5004. Please do not request accommodations directly from the professor or instructor without a letter of accommodation from Student Disability Services without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Title IX Misconduct/Assault Statement

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) at $https : //wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf and Discrimination an$ (#0.2040) at $https : //wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf$.

Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center at 270-745-3159.