RES-ECON 213
Intermediate Statistics for Business and Economics – Fall 2022
Mon/Wed 2:30-3:45pm (EST)

Instructor: Prof. <PROF_NAME> (Dr./Prof. <PROF_LAST_NAME>)
                                   E-mail: <PROF_EMAIL>
                                   Office Hours: Mondays, 5:30-6:30pm (Stockbridge 208B *and* over <LINK_ZOOM>)
                                      & Schedule individual/group Zoom meetings on <LINK_CALENDLY> (1.5+
hours/week)

Teaching Assistant: <TA_FULL_NAME>
                                   E-mail: <TA_EMAIL>
                                   Office Hours: Wednesdays, 4:00-5:00pm (Flint Lab Room 210 *and* over <LINK_ZOOM>)
                                               Mondays & Wednesdays, 8:30-9:00am (<LINK_ZOOM>-only)

Prerequisite: Successful completion of Rec-Econ 212 or Stat 240 are appropriate prerequisites. Please talk to me if you are relying on any other coursework as a prerequisite.

Learning objectives: This is the second course in a two-course sequence. In the first course (ResEc 212) you learned to organize and summarize data, create confidence interval estimates and complete hypothesis tests for a single population. In this course you will learn how to compare different populations through hypothesis testing. You will also learn to estimate relationships among variables through regression analysis. You will develop a greater appreciation for the kinds of information presented daily in the press and the ability to use statistics to interpret and judge survey results and statistics presented in the media. Knowledge of statistics is becoming increasingly important in this information age. Statistics can be viewed as ***discovery through data***.

Required Materials:
1. **Text:** ***Applied Statistics in Business & Economics*** by David P. Doane and Lori E. Seward, 7th edition. An online tool called ***Connect*** comes with e-textbook access. <u>***Connect*** is an integral part of this course, and ***everyone must have it***</u>. A loose-leaf textbook is available after registration. You can purchase access to ***Connect*** (and the e-textbook therein) directly: <LINK_MHEDUCATION>.

2. **Personal Response Transmitter (iClicker2):** This is required for use during lectures. You must link your Spire ID to your ***iClicker2*** transmitter on the Moodle site for this course. Note, there is a <u>iClicker lending program</u> on campus so you can borrow one for the semester for free!

3. **Computer Access:** It is extremely important that you have access to a personal computer and access to the Internet. Homework and quizzes in this course (described shortly) are given over the internet. In addition, data sets will be provided for statistical analyses that really cannot be completed on hand calculators.

Course Schedule: I plan to quickly review chapters 8 and 9 ("Sampling Distributions & Estimation" and "One-Sample Hypothesis Tests"), which are prerequisites to this course. We will then cover chapters 10 – 13. PDFs of Lecture slides will be posted by topic on ***Moodle***. We'll then spend 3-4 lectures on each subsequent chapter. The topics covered will include Hypothesis Testing (one and two sample), ANOVA, and Regression (simple and multiple). Textbook chapters covered are sections 8.1-8.5, 9.1-9.6, 10.1-10.7, 11.1-11.6, 12.1-12.9, 13.1-13.8.

Discussion Sections: Discussion sections will be hosted by the TA and will be used to guide your application of the methods and tools covered in class to analyze data. Each week the TA will review key terms and methods and illustrate data analysis using software, Excel. We will also use discussion sections to prepare you for the coming quizzes and exams using real data sets. **NO DISCUSSION WILL BE HELD DURING THE FIRST WEEK OF CLASS.** The first discussion sections will be on September 16, 2022.

Course Requirements:
1. **Examinations:** There are 2 mid-semester examinations and a final exam. Mid-term exams are scheduled for **10/19 (Wed)** and **11/16 (Wed)**. Mark your calendars. A final exam, required of all students, will be

administered at the assigned time and place. The final exam is comprehensive.

	Room	Date	Time
Midterm 1	TBD	10/19/2022	7:00-9:00pm
Midterm 2	TBD	11/16/2022	7:00-9:00pm
Final Exam	TBD	12/20/2022	3:30-5:30pm

2. **In-Class Personal Responses (iClicker2):** Radio frequency transmitters will be used during each lecture to answer questions, with full credit for correct answers and half-credit for incorrect answers. Full credit is earned for participation/survey questions. ***Each lecture is worth 1 point*** in determining your ***Personal Response*** score, your percentage of the total possible points. Your *six* lowest scores will be dropped; ***these six drops include all absences (excused or otherwise)***. Each transmitter has a unique ID which you must link to your SPIRE ID on Moodle. **We begin using clickers on Monday, September 19, 2022.** (If you missed lectures and want to request access to echo360-recorded lectures, contact the TA directly.)

3. **Discussion Sessions:** you are each registered for a discussion session on Fridays. Attendance and constructive participation in your enrolled session is required and will account for 3% of your final grade. Full credit is possible if ≥80% attendance (with good participation) is achieved. **This includes excused AND unexcused absences.** All points for discussion sessions are at the TA's discretion.

4. **Assignments:** There will be 12-15 assignments during the semester. ("Homeworks"). Each homework will be posted in *Connect*. I will do my best to announce when a new homework is available and when it is due, but it is your responsibility to observe when a homework opens and when it closes. Closing times do vary by day of week and hour. So, be vigilant regarding closing times. Questions are based on material in assigned readings. Your ***Connect Homeworks*** grade will be based on the points that you earn for answering questions correctly. Homeworks are worth 12% of your final grade. The link to Connect for this course is: <LINK_MHEDUCATION> and is also available on Moodle. You are allowed *infinite, untimed* attempts for each homework. Only your best attempt for each homework will be counted into the final grade. No extension. Late submission is allowed (with 15% daily penalty).

5. **Quizzes:** There will be six online quizzes in *Connect* posted throughout the semester. Each quiz will remain active for at least 5 days. **Quizzes are timed – you will have 2 hours. Once you click on a quiz, you cannot stop the clock!** A quiz will consist of a number of questions – many will be selected from the homework questions. You can make two attempts at each quiz (only the highest attempt per quiz will be counted). Additionally, we will drop your lowest quiz score in calculating your final quiz score.

Course scores are calculated based on the following weightings:

	Weights
Personal Response – *iClicker2*	7%
Discussion Session Attendance & Participation	3%
Connect Homeworks	12%
Connect Quizzes	13%
Lowest Midterm Exam Score	15%
Highest Midterm Exam Score	20%
Final Exam	30%

Final course grades will be curved up, but the following course scores will be used as references for cutoffs

Percentage	91	87	83	80	75	72	70	67	63	58
Grade	A	A–	B+	B	B–	C+	C	C–	D+	D

Course Policies:

1. **Attendance:** Grades depend on in-lecture participation (via *iClicker2* responses). You are responsible for all material covered in lectures and discussions. We will cover a large amount of material. If your plan is to "only study before the exam," you'll be in trouble. Statistics requires regular practice, and more

practice. To effectively use the statistical concepts taught in the course you need a steady exposure to readings, activities and problems. The course is set up with exercises that lead you through small amounts of material for each concept. Stay on schedule. ***Please!! Don't Fall Behind.***

2. **Community Respect:** All students are expected to act professionally, showing utmost respect in all communication with each other, instructors, and university staff. Also, remember any honest question is a good question, whether it is yours or someone else's. If you have a question, please raise it. It is likely that someone else has the same question.

3. **Midterm Exams**: Prof. <PROF_LAST_NAME> ASAP if you have a hard conflict and need to reschedule the midterms. Alternative exam time will be scheduled on the same day of Midterms but during the daytime (slots: 10am-12pm, 12-2pm, 2-4pm; specify it clearly in the request). Requests must be sent ≥ 48 hours prior to the schedule exam time. Same-day request is strictly prohibited. Special conditions will be accommodated (e.g., with doctor's note). This is to guarantee fairness to other students in the class. **No Make-up Exams**. Missed exams get 0 points. If you have an excused absence and unable to take a midterm, I will shift the weight to the final exam. An *excused absence* is defined by the following: serious illness of the student or of a member of the student's immediate family; death of a member of the student's immediate family; University-sponsored trips; or major religious holidays. In any case, written verification will be required and permission to miss the exam must be secured *before* the scheduled exam time.

4. **Email:** Direct email should be used only after class resources have been referenced or for personal concerns. Professor <PROF_LAST_NAME> and the TA will generally respond to student emails within 2 business days. **The TA is your primary contact if you have questions about course logistics, Connect assignments, Moodle, etc**. If you have questions, do the following steps in order:
   1) Check the syllabus
   2) Check Moodle, slides on Moodle, and announcements
   3) Email the Teaching Assistant (include "ResEc213" in the subject line)
   4) Come to office hours or ask Prof. <PROF_LAST_NAME> before/after class

The best way to ask questions is to talk with Prof. <PROF_LAST_NAME>/TA in OHs and show your thinking process. Emailing questions is NOT an effective way to understand the materials and improve your learning.

5. **Academic Honesty:** Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent (http://www.umass.edu/dean_students/codeofconduct/acadhonesty/).

6. **Accommodation:** The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements. If you have other questions about special accommodations, please don't hesitate to talk with me at any time. If you want to schedule a distraction-reduced room via the exam center, please request via them directly at least 7 days ahead of time (otherwise you lose the privilege).

7. **Diversity and inclusion**: The University of Massachusetts Amherst is committed to policies that promote inclusiveness, social justice, and respect for all, regardless of race, color, religion, creed, gender, sexual orientation, age, national or ethnic origin, physical or mental disability, political belief or affiliation, marital status, veteran status, immigration status, gender identity and expression, genetic information, or any other characteristic or status protected by state or federal laws.

Finally, I hope you enjoy the class. Stats is fun!