RES-ECON 213

***Intermediate Statistics for Business and Economics - Spring 2020***

TuTh 2:30 p.m. – 3:45 p.m., ILC S140 – 3 credits

**Instructor:** Bernard J. Morzuch (Bernie), 221 Stockbridge Hall, Tel: 545-5718.
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e-mail for questions about assignments, ***Connect***, and course material: contact TA at resecon213-morzuch-2@courses.umass.edu
Office Hours: By appointment.

**Teaching Assistant:** Onupurba Das is my TA. Onu will be leading your discussions on Fridays. She holds office hours from 3-4 pm on Mondays and 2-3 pm on Wednesdays, both in Flint 210. You can also contact her using the e-mail address above. Get to know Onu. She is a wonderful resource for promoting your understanding of the material.

**Prerequisite:** The ideal prerequisite is successful completion of Res-Econ 212. It is ideal because both Res-Econ 212 and Res-Econ 213 are coordinated with each other. Stat 240 is an appropriate substitute for Res-Econ 212.

**Objectives:** This is the second course in a two-course sequence for Resource Economics majors. In the first course (Res-Econ 212), you learned to organize and summarize data, create confidence-interval estimates, and complete hypothesis tests for a single population. In this second course, you will learn how to compare different populations through hypothesis testing. You will also learn to estimate relationships among variables through regression analysis. Hopefully, 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:** Text, ***Connect***, and iClicker2. Go to the virtual bookstore in Spire *or* buy directly from the publisher. Buying directly from the publisher is cheaper. In my e-mail to you on 1-21-20, I provided explicit instructions regarding purchasing course material. Let me know if you need this information.

Additional information about iClicker2:
- It is required for use during lectures. We begin using clickers for real on Thursday, January 23.
- Each iClicker2 transmitter has a unique ID that you must link to your SPIRE ID. See the directions in Moodle on **Registering Your iClicker2**.

Computer software: We will use the statistical software Minitab to perform statistical analyses. You are not required to purchase Minitab. It is loaded on all university computers and is available for use to all university members.

**Course Schedule:** We begin with Chapters 8 and 9, These are intended to be a review. They are also prerequisites for this course. We will then cover topics in Chapters 10-16. My lectures are in PowerPoint format. I will post each lecture in Moodle following its presentation.

**Course Requirements:**

1. **Discussions:** Discussion sessions are led by your TA and will be used to guide your application of the methods and tools covered in class to analyze data. Each week your TA will review key terms and methods and illustrate data analysis using the Minitab software. You will be involved in discussions.

2. **Three Evening Exams and One Final Exam:** There will be three two-hour exams in addition to the final exam. Exam 1 is set for **Monday, February 24**. Exam 2 is set for **Wednesday, April 1**. Exam 3 is set for **Wednesday, April 22**. Each exam is scheduled for **7:00 – 9:00 p.m.** Mark your calendars regarding exam dates, times, and location. The lowest of the three exam scores counts 10% toward your final grade. Each of the other two exam scores counts 20% toward your final grade. The final examination is not yet scheduled for a time and date. Eventually, you will see it posted in Spire. The final exam counts 30% toward your final grade.

3. **Assignments:** There will be 15-20 assignments during the semester. (I and Connect refer to them as "Homeworks.") Each homework will be posted in ***Connect.*** 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. A typical homework will consist of a few multiple-choice questions and questions requiring numerical calculations. 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 5% of your final grade. To see specifically how the homework contribution to your final grade is calculated, go to ***The Connect Component*** in Moodle. Once there, read the section titled ***Connect Homeworks***.

4. **In-Class Personal Responses (iClicker2):** Radio frequency transmitters will be used during each lecture to answer questions about class material. There will be approximately 20-25 iClicker sessions during the semester. A session will have either 1, 2, 3, or 4 questions. Your score per session is the *percent* correct for that session. If you do not bring your iClicker to class, if the battery in your iClicker quits, or if you decide not to attend a class (for whatever reason – good excuse or bad excuse), you can't engage in iClicker activities. I recognize these contingencies. Consequently, you are permitted to miss up to *two* daily iClicker sessions during the semester with no penalty. This also translates into the following: at the end of the semester, I eliminate each student's two lowest iClicker scores. Words of advice: these two freebies are money-in-the-bank; use them judiciously. Your iClicker scores are worth 5% of your final grade. To see specifically how the iClicker contribution to your final grade is calculated, go to ***The iClicker Component*** in Moodle.

5. **Quizzes:** There will be at least five on-line ***Connect*** quizzes during the semester. Each quiz will remain active for at least three days. **Quizzes are timed –** you will typically have 2 two-hour blocks of time (of your choosing) during the time that the quiz is open to complete each quiz. **Once you click on a quiz, you cannot stop the clock!** Quiz material will resemble assignment material and lecture material. ***Connect*** quizzes are worth 10% of your final grade. To see specifically how the quiz contribution to your final grade is calculated, go to ***The Connect Component*** in Moodle. Once there, read the section titled ***Connect Quizzes***.

**Grading Summary:**

| ***Item*** | ***Weight*** |
|---|---|
| ***Connect*** Homeworks | 5% |
| Personal Response – ***iClicker2*** | 5% |
| ***Connect*** Quizzes | 10% |
| Lowest Exam | 10% |
| Remaining Two Exams (Each Worth 20%) | 40% |
| Final Exam | 30% |

The *minimum* percentages needed for course grades are as follows:

| Percentage | 92 | 89 | 86 | 83 | 79 | 76 | 73 | 69 | 65 | 58 |
|---|---|---|---|---|---|---|---|---|---|---|
| Grade | A | A– | B+ | B | B– | C+ | C | C– | D+ | D |
| | | | | | | | | | | |

**Course Policies:**

1. **Class Attendance:** Class attendance is expected and critical to your success in this course. You are expected to attend and participate in all lectures (using your ***iClicker2***) and discussion sessions. **You are responsible for all material covered in lectures and discussions.** The way to avoid any conceivable misunderstanding associated with this course is by attending classes. We will cover a large amount of material. If your plan is to "cram before the exam," you will most likely be in trouble. Statistics requires regular practice, and more practice. To use the statistical concepts taught in the course effectively, 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 before and after each lecture. Stay on schedule. My best advice: ***Don't Fall Behind.***

   **Academic Honesty:** I follow closely the University Academic Honesty Policy. You are expected to be familiar with the University policy and the commonly accepted standards of academic integrity. For more information, please see the Dean of Students' website:
   http://www.umass.edu/dean_students/codeofconduct/acadhonesty/

2. **Disability:** The University is committed to providing an equal educational opportunity for all students. If you have a documented disability on file with the University's Disability Services Department that requires accommodations, please notify me within the first two weeks of the semester so we can make the appropriate arrangements.

3. **Conduct and Courtesies:** I ask that you follow the University Code of Conduct and help create an environment of civility and respect in the classroom. Please observe common courtesies by **arriving before the start of class** and quickly finding an open seat. **The class starts promptly at 2:30 p.m.** and lasts 75 minutes, not an unreasonable amount of time to expect you to sit still. Please do not leave during class or chat with your friends; these things are very distracting. (If you must leave during class, sit near an exit.) You will find that I pay attention to your faces during class. Your "look" is a mighty barometer for me regarding whether or not you are engaged in the class and grasping the material. At the same time, I tend to lose my train of thought if members of the audience sleep, play with their technology toys during class, and exhibit behavior that appears to disturb those around them. I am not bashful about letting someone know that he or she is distracting me. (If you exhibit behavior of this sort, don't be surprised if I approach you during class and request that you leave.) If you have tendencies like these, I urge you either to drop the course, to take it on-line, or not to come to class.

4. **I will involve *you* during class.** As the semester unfolds, you will notice that I get to know the names and faces of all of my students. This means that it is pretty much of a certainty that I will call on you personally during class. My questions will be straightforward. I will not embarrass you. If I get the slightest detection that I am causing you discomfort, I will back off. If you do not want me to call on you, let me know. Here's my take: we are all cut from the same cloth; none of us likes discomfort; new situations and foreign material are a source of discomfort if you are put in a position to respond to it; this is just the way things are; giving it your best shot can be a genuine confidence builder.