

**SOCIOL 212: Elementary Statistics  
Spring 2021 Syllabus**

**Professor:** Dr. Youngmin Yi  
 (“Dr. Yi” or “Professor Yi,” she/her)  
**Email:** [youngminyi@umass.edu](mailto:youngminyi@umass.edu)  
**Website:** <http://yyiresearch.com>  
**Student Hours (Zoom):** Wed., 3:00 – 5:00 pm ET

**Teaching Assistant:** Renier Esteves Quintana  
 (“Renier,” he/him)  
**Email:** [restevezquin@umass.edu](mailto:restevezquin@umass.edu)  
**Student Hours (Zoom):** Fri., 10:15 – 12:15 pm ET

**COURSE DESCRIPTION AND OBJECTIVES**

Welcome! This course provides a social scientific introduction to probability and statistics. Our goal is to learn about quantitative (numerical) data and to learn how to use data, probability, and statistics appropriately to study our social world. Together, we will:

- Develop a statistical vocabulary and data literacy to become informed consumers and critical evaluators of numerical information
- Apply statistics and probability to explore and describe the social world numerically
- Develop basic proficiency in statistical analytic software
- Learn to interpret and communicate statistical and numerical information to others

There are no formal prerequisites for this course, although you will need basic algebra (+, -, ÷, ×, √). This course satisfies the General Education Analytic Reasoning (R2) requirement.

**SPECIAL NOTE ABOUT LEARNING IN A PANDEMIC**

*None of us wanted this.* I share many of your frustrations and concerns. However, because of the ongoing global health crisis, the uniquely dangerous conditions of campus environments for virus transmission, and the heightened risk to which we would be exposing ourselves and others by traveling to campus, UMass Amherst *requires* that this class be taught in a fully remote format. I am proud of our community for putting health and safety first, but I also recognize that this is difficult for many of us.

I am committed to helping you succeed in this class. Please talk to me and check in with me regularly throughout the semester. I commit to being thoughtful and compassionate towards each of you as you navigate the current circumstances and your own personal situations. In turn, I ask that you exercise the same consideration and compassion towards your classmates, Teaching and Grading Assistants, UMass Amherst staff, and your professors. We are all moving through this differently, but together.

**COURSE STRUCTURE AND SCHEDULE**

In Spring 2021, this is a fully remote and partly “flipped” class. This means that all learning and class activities will occur physically (and safely) distanced. New content will be introduced *asynchronously* (through readings and video modules). *Synchronous* class meetings and sections will take place over Zoom. These will focus on clarifying key points, deep dives into complex topics, and hands-on activities, including RStudio lab sessions. Our weekly schedule will generally look like this:

<b>Mon.</b>	<b>Tue.</b>	<b>Wed.</b>	<b>Thu.</b>	<b>Fri.</b>
Class: Lecture 9:05 am – 9:55 am EST * complete weekly readings and modules by Monday		Class: Practice/Lab 9:05 am – 9:55 am EST		Discussion Section w/Renier • 8:00 am – 8:55 am EST • 9:05 am – 9:55 am EST

## **COURSE EXPECTATIONS AND GRADING CRITERIA**

The course expectations and activities are designed to help us meet our learning objectives.

### **Class Participation (15%)**

Class participation includes two components Keep in mind: class participation will also be reflected in your understanding of the material.

**(1) Introductory Questionnaire (5 points)**

This questionnaire will provide me with some critical and helpful information about you.

**(2) Class Expectations and Guidelines Quiz (5 points)**

This is a graded open-book quiz on class policies, expectations, and guidelines that you have 2 weeks to complete and submit (due Friday, February 12).

**(3) Discussion Posts (5 required posts, 1 point each)**

You must contribute at least 5 substantive posts to the discussion forum by Monday, May 3.

### **Learning Activities (25%)**

Learning activities will help you structure your asynchronous learning and allow you to assess your grasp of new concepts in a low-stakes way. These activities will be due on Fridays at 11:59 pm ET.

**(1) Bi-weekly reading guides (6 guides, 3 points each)**

Reading guides are outlines for taking notes as you complete readings, modules, and participate in class/discussion sections. You are encouraged to update your guides as your understanding of the material improves. By the end of the semester, you will have built a glossary of statistics and probability terms, in your own words. You will receive 1 point for an attempt, 2 points for partial completion, 3 points for strong engagement/completion.

**(2) Bi-weekly comprehension checks (6 checks, 1 point each)**

Comprehension checks in the form of Moodle quizzes will test your grasp of new content. There is no penalty for incorrect answers, but you must complete each check on time to receive credit.

### **Assignments (40%, 6 assignments)**

Assignments are an opportunity for you to apply and extend new skills. Assignments will be posted on Fridays and due two weeks later on Fridays at 11:59 pm ET. Students must submit their own independent work, using the correct file format, for each assignment. Collaboration is encouraged, but keep in mind our commitment to academic integrity. If you worked closely with others, note their name(s) in the header of your assignment. You will have the opportunity to revise and resubmit one assignment at the end of the semester.

### **Final Statistical Investigation (20%)**

In lieu of a final exam, students will conduct independent final statistical investigations to apply the skills they have developed in this class. Group submissions are not permitted. The project will be due on the last day of finals period on Wednesday, May 12 at 5:00 pm ET. Late submissions will not be permitted except in extenuating circumstances discussed with Professor Yi well in advance.

### **Deadlines**

Students are expected to keep pace with the Detailed Course Schedule, as all materials/deadlines are posted in advance. Students should make every effort to submit assignments by the noted deadlines. However, life happens. As such, *strict deadlines* will allow students to catch up on work missed due to extenuating circumstances. All items submitted by the strict deadlines will be graded for full credit. Items submitted after the strict deadlines will receive 0 points.

## Attendance

There is no formal attendance policy for this class. As adults who have registered for this class, you have committed to the course objectives and are expected to take responsibility for your own learning, which, for some, will entail working with Professor Yi to develop a modified plan.

It is not appropriate to ask your instructors to summarize missed classes or sections for you. Students who keep up with class meetings and make use of opportunities to ask questions will find the class to be most manageable. Students who need to participate fully asynchronously due to extenuating or changing circumstances should contact Professor Yi to discuss these needs.

## Grading

This table describes the grading scheme for this class. Your final grade will be a weighted total of your performance over the course of the semester. You can track your cumulative progress in the Moodle Gradebook. The deadline to elect Pass/Fail grading is Friday, March 29.

Grade	Percent Total	Grade	Percent Total	Grade	Percent Total
A	93% - 100%	C+	77% - 79%	F	59% or below
A -	90% - 92%	C	73% - 76%	INC	Incomplete
B +	87% - 89%	C-	70% - 72%		
B	83% - 86%	D+	67% - 69%		
B-	80% - 82%	D	60% - 66%		

## COURSE MATERIALS

This class is multimodal and so we will draw upon a range of different course materials and resources.

**Moodle:** The class Moodle page will serve as our “home base.” All class materials will be posted to this site. Access it by logging in with your NetID and password here: <https://moodle.umass.edu/>

**Class Meetings and Modules:** This class is structured around (1) asynchronous modules that introduce new topics in small chunks and (2) synchronous class meetings that will focus on review, clarification, and application of new skills and concepts.

- **Echo360:** Course modules will be available as Echo360 videos accessible through Moodle. All UMass Amherst students have access to Echo360 using their NetID and password.
- **Zoom:** Class meetings will take place over Zoom. All UMass Amherst students have free access to Zoom through our Moodle site using their NetID and password.

**Course Texts:** Our readings for class will draw from a main textbook with occasional supplementary readings and other content that will enrich our statistical training.

- **OpenIntro Statistics (OS):** This textbook by David M. Diez, Mine Çetinkaya-Rundel, and Christopher D. Barr is the main text for this course. Assigned readings from this text are listed in the syllabus as (OS). This text is available free to download or read online at the textbook site: <https://www.openintro.org/book/os/> If you would like a hard copy, you can purchase one at the textbook site or through the eCampus online bookstore: <https://umass.ecampus.com/>
- **Additional Readings:** Additional materials will be posted or linked to the class Moodle page.

**Technology:** You will need access to a stable internet connection and a computer to participate fully in this class. *If any of these requirements presents a challenge, please contact me and/or the Office of the Dean of Students as early as possible so we can work together to address these needs.*

**R and RStudio:** These are free open-source statistical software for data analysis (and more). R is available on the CRAN R Project website and RStudio is available on the RStudio website; you will need both. You should download and install these programs on your own before classes begin, following the step-by-step instructions detailed in the Start-Up Manual. *If your computer does not allow you to install programs, please contact Professor Yi immediately so she can set up an alternative computing arrangement for you. Google Chromebook users, this applies to you.*

**Calculator:** We will be doing some calculations by hand. You might find it useful to have access a calculator for basic algebra. For most calculations, a cell phone or computer calculator will suffice.

### **COURSE COMMUNICATION**

Sociologists are careful to distinguish between physical and social distance, and for good reason! We may be physically apart, but a number of tools and resources can help us build a learning community:

**Discussion Forum:** The class Discussion Forum on Moodle is an organized but informal space where students, TAs, and the professor can ask questions, post comments, or share information. In addition to posting as part of your class participation, I strongly encourage students to use this space as a resource. Instructors will check this forum regularly to contribute and answer questions.

**Student Hours:** Student hours are dedicated time during which you are encouraged to “stop by” using Zoom (through Moodle) to ask questions and discuss your class progress.

**Professor Yi**  
Wednesdays  
3:00 pm – 5:00 pm ET

**Renier**  
Fridays  
10:15 am – 12:15 pm ET

To request an appointment with an instructor outside of student hours, please email Professor Yi or Renier directly using your @umass.edu email address.

**Email:** Professor Yi will send weekly emails with tips, tricks, and key points every Friday. It is in your best interest to read these emails thoroughly – they will include reminders, suggestions for completing class assignments, and, on occasion, corrections and clarification. Professor Yi and Renier will also sometimes send other emails as needed, please read these carefully, as well.

Direct email should be used only after class resources have been referenced or for personal concerns. Professor Yi and Renier will generally respond to student emails within 48 business days. Refer to the Learning Guide for guidelines on email communication for this class.

## **COURSE OUTLINE**

The schedule below lists the semester's topical outline. Please see the Detailed Course Schedule for required readings and exam and due dates for the semester.

**Week 1 (February 1 – February 5):** Welcome and Introduction

**Week 2 (February 8 – February 12):** Nuts and Bolts: Data, Samples, and Populations

**Week 3 (February 15 – February 19):** Describing Data, Part 1

**Week 4 (February 22 – February 26):** Describing Data, Part 2 (modified schedule!)

**Week 5 (March 1 – March 5):** Probabilities

**Week 6 (March 8 – March 12):** Foundations of Inference

**Week 7 (March 15 – March 19):** Rest Stop, Strict Deadline #1 (modified schedule!)

**Week 8 (March 22 – March 26):** Point Estimates and Confidence Intervals, Part 1

**Week 9 (March 29 – April 2):** Point Estimates and Confidence Intervals, Part 2

**Week 10 (April 5 – April 9):** Testing Hypotheses

**Week 11 (April 12 – April 16):** Describing Relationships, Strict Deadline #2 (modified schedule!)

**Week 12 (April 19 – April 23):** Describing Relationships: Regression Analysis

**Week 13 (April 26 – April 30):** Statistics in the Social World

**Week 14 (May 3):** Last Day of Class

**Reading and Finals Period (May 5 – May 12)**

## **COURSE POLICIES**

### **Land Acknowledgment**

The land on which UMass Amherst sits is occupied Nonotuck and Pocumtuck land, close to the lands of the neighboring Abenaki, Mohegan, Mohican, Nipmuc, Poequot, Nipmuc, and Wampanoag nations. This land was occupied by Lord Jeffrey Amherst (namesake of Amherst, MA) and the British military in the mid-18<sup>th</sup> century.

### **Commitment to Inclusion**

The university recognizes and values the wide range of voices and perspectives in all spheres of the academic enterprise. 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.

We commit to maintaining an environment that supports our and others' participation and pursuit of the class objectives. There will be no tolerance of behavior that marginalizes or harasses others in this class or persons outside our class community.

### **Commitment to Academic Integrity**

We commit to honest representation of our work. Students acknowledge that all assignments may be subject to submission for textual similarity review to Turnitin for (and solely for) the detection of plagiarism.

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. 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](http://www.umass.edu/dean_students/codeofconduct/acadhonesty)).

### **Student Services, Special Circumstances, and Needs**

Support and reasonable accommodations are available to students experiencing circumstances and conditions that impact their participation. These may include temporary and permanent disabilities, illness, immigration laws, mental health, learning needs, and other considerations. Please contact Professor Yi to discuss any such concerns and needs.

University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented 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 Professor Yi as soon as possible after registering with DS (by the end of Week 2 of the semester) so that we may make appropriate arrangements in a timely manner. For more information, consult the Disability Services website at <http://www.umass.edu/disability>.

### **Sharing Policy**

Transfer, duplication, and sharing of course material outside of our class beyond that which is publicly available on Professor Yi's website is expressly prohibited unless unequivocal written consent has been obtained from the instructors and students involved. This includes, but is not restricted to, screenshots, audio/video recordings, Zoom chats, lecture transcripts, assignments, and class documents. Violation of this policy is a violation of the privacy, rights, and safety of our class and will be treated as such.

### **Support in Response to Harassment, Assault, and Violence in the UMass Amherst Community**

As a faculty member, I am required to report any sexual assault, sexual harassment, relationship violence, or stalking of which I become aware to the Title IX Coordinator in the Dean of Students Office. This includes any experiences or concerns that you disclose to me. Students can contact the Office of Equal Opportunity & Diversity or the Dean of Students Office directly to make a report, file a complaint, or learn about available resources and accommodations. If you would like support or further guidance in doing so, please know that I am here to support you in that process. Students can find additional information on the University's IX website at <http://www.umass.edu/titleix> and in the Sexual and Relationship Violence Resource Guide at <https://bit.ly/2Xw3Zcp>.

## **ADDITIONAL CAMPUS RESOURCES**

Here are some links to other UMass Amherst resources available to support your learning and wellbeing.

### **Anonymous Witness Form**

<https://www.umass.edu/umpd/anonymous-witness-form>

### **Assistive Technologies Center**

<http://www.oit.umass.edu/atc>

### **Bias Reporting (Non-Emergency)**

<https://www.umass.edu/diversity/reporting-options>

\*For emergencies, please call 911 or (413) 545-3111

### **Center for Counseling and Psychological Health (Crisis: 877-831-7421)**

<https://www.umass.edu/counseling/>

### **Center for Multicultural Advancement & Student Success**

<https://www.umass.edu/multiculturalaffairs>

### **Disability Services**

<https://www.umass.edu/disability/>

### **English as a Second Language**

<https://www.umass.edu/esl/>

### **International Programs Office**

<https://www.umass.edu/ipo/>

### **Learning Resource Center**

<https://www.umass.edu/lrc/>

### **Office of Equal Opportunity & Diversity (413-545-3464)**

<https://www.umass.edu/eod/>

### **Ombuds Office**

<https://www.umass.edu/ombuds>

### **Sexual Assault Services (Hotline: 413-545-0800 or 888-337-0800)**

<https://bit.ly/2XWGdXe>

### **University Health Services (413-577-5000, Triage Advice Nurse 413-577-5229)**

<https://www.umass.edu/uhs>

### **Veteran Services Office**

<https://www.umass.edu/veterans/>

### **Writing Center**

<https://www.umass.edu/writingcenter>