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| **Faculty:** | Linda M. Quinn, PhD |
| **Office:** | [https://csuohio.zoom.us/j/4454375714](https://www.google.com/url?q=https://csuohio.zoom.us/j/4454375714&sa=D&source=calendar&usd=2&usg=AOvVaw2Nv2y8jci-eAYIv3-CYCt-) |
| **Office Hours:** | TTh 10:00 – 11:00 am; TTh 8:00-8:30 pm. You can join me on my zoom office hours ([https://csuohio.zoom.us/j/4454375714](https://www.google.com/url?q=https://csuohio.zoom.us/j/4454375714&sa=D&source=calendar&usd=2&usg=AOvVaw2Nv2y8jci-eAYIv3-CYCt-)) or you may send me an email for appointment times outside these hours |
| **Office Phone:** | 216-687-4691 |
| **E-mail:** | [l.quinn@csuohio.edu](mailto:l.quinn@csuohio.edu) |
| **Prerequisite:** | STA 567 and STA 536, or permission of instructor |
| **Drop Dates:** | August 28 (drop with full refund), September 4 (drop) and October 30 (withdrawal with a “W”) |
| **Section:** | 50 |
| **Class Meetings:** | TTh 6:00pm – 7:50pm |
| **Classroom:** | <https://csuohio.zoom.us/j/93515622389> |
| **Last Day of Instruction:** | Th, December 3rd |
| **Final “Exam” Period:** | Th, December 10th, 6:00-8:00 pm |

**ABOUT THE COURSE**

**REQUIRED READINGS:**

* There is no textbook for this course, but many things to learn. There will be many articles, papers, and material to read that will be provided on line in the Reading Materials folder. It is your responsibility to read and use when needed. Some will be for general preparation and interviewing, some more technical in nature, and some for humor.

**OPTIONAL READING** (as needed)**:**

* *Statistical Consulting –* Javier Cabrera and Andrew McDougall (1st edition hardcover is 2002).
* *Statistical Consulting: A Guide to Effective Communication –* Janice Derr (2000, Duxbury Press).
* *Tests & Measurement for People Who (Think They) Hate Tests & Measurement*, Third Edition – Neil Salkind
* *SAS, SPSS, Minitab, and R* manuals

**COURSE DESCRIPTION**: This course assigns students to work in consulting teams with, when possible, university or community partners on real-world case studies of statistical methods learned in previous courses. Students prepare written reports and oral presentations that discuss the findings of the analysis. Topics specific to this course may include sample size determination, reliability, and validity, missing data imputation, random sampling, randomization schemas, data management techniques, ethics, IRB, or other topics chosen by the instructor. In addition, students learn data manipulation and graphics using a variety of software to include SAS, SPSS, Minitab, and R. May not take for credit if completed MTH 435.

**COURSE OBJECTIVES**:

* Students will understand the ethics of research and collaboration in university, industrial, and government settings.
* Students will be independent and peer learners.
* Students will be able to manipulate and clean data for use in a statistical analysis.
* Students will be able to take reproducible random samples from a population.
* Students will be able to create reproducible randomization schemas.
* Students will be able to design a valid and reliable instrument.
* Students will be able to assess the impact of missing data or its imputation on analyses.
* Students will be able to assess the impact of sample size on the analysis.
* Students will be able to investigate and apply new statistical analyses in multiple software packages.
* Students will be able to work in a multi-disciplinary collaborative environment.
* Students will be able to effectively communicate statistical information formally and informally, written and oral, to a non-statistical audience.
* Students will be able to manage multiple projects at the same time.

**CLASS ENVIRONMENT and EXPECTATIONS**

**REMOTE CLASSES:** I will be using Zoom for classes.

* Please note the virtual class will be recorded by the Faculty host. Recorded classes will be available for only 1-week after the class date and are only available to students in this course. I will load the links in a Blackboard folder.
* The **video and audio feed** feature of the attendees **are activated** during the virtual class. Each student has the personal option to disable their camera and mute themselves during the class. Students selecting either or both options will still be able to listen.
* Students wishing to ask a question or comment should indicate that in the chat feature of the system. The chat feature will only be available to those that log-in to the virtual class not those who only call in. The chat feature is not available on video replay.
* Students are not permitted to record or share the contents of the virtual session. Any attempt to do so will be considered a violation of the Student Code of Conduct among other things.
* Please do not share the information on how to access this class with any unauthorized persons. An unauthorized person includes anyone not registered for the class. CSU staff providing academic or technical support or those providing an approved accommodation to the student are considered authorized persons.
* Class attendance will be taken using the tracking statistics of the system.

**TEACHING APPROACH is Project Based Learning (PBL):** Project Based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. Students work on a project over an extended period of time – from a week up to a semester – that engages them in solving a real-world problem or answering a complex question. They demonstrate their knowledge and skills by developing a public product or presentation for a real audience. As a result, students develop deep content knowledge as well as critical thinking, creativity, and communication skills in the context of doing an authentic, meaningful project. PBL unleashes a contagious, creative energy among students and teachers.

**ASSESSMENT AND GRADING:**

Please note well: There may be multiple assignments due in close proximity to each other. Please budget and plan accordingly. Grades will be based on:

A = [95, 100%] A- = [90, 95%) B+ = [87, 90%) B = [84, 87%) B- = [80, 84%) C = [75, 80%) F = [0, 75%)

**PROJECTS** (each equally weighted with approximately 10-12 for the semester):

* Research and Data ethics / CITI - this project will be a self-taught course that is strongly recommended for all CSU researchers, including students, conducting primary research with human or animal subjects. It should enable students to understand the importance of federal guidelines on the protection of human subjects and their role as a responsible and ethical researcher.
* Random sampling - be able to select random samples from a population that can be replicated
* Randomization schemas - be able to construct a randomization assignment schema that can be replicated
* Sample size estimation – since most studies require a sample, it is useful for a statistician to be able to calculate sample size requirements for differing situations
* Cleaning data – this is a skill that can take up to 90% of a statistician’s time on a consulting project
* Codebook – all data analyses should be documented in codebooks and/or data dictionaries
* Scoring instruments – be able to score instruments with messy and missing data, multiple subscales, and transformations
* Validating instruments – be able to provide validation statistics for new instruments or instruments used in new populations
* Consulting assignments as they arise from clients

**Skill Development and Refinement (some possibilities)**

* Using Excel
  + Pivot tables
  + Summary statistics
  + Formulas
* SQL – Structured query language
* Business etiquette and interviewing
  + 60 second elevator pitch
  + Improve answering basic questions that all statistical consultants should be able to explain to clients (some examples: who are you and why are you qualified to be an analyst, what is a p-value, explain confidence intervals, differences between populations and statistics)
  + Skills for technical employment interviews
  + Prepare resume and cover letters

**Indirect Skill Development, some possibilities:**

* Software exposure
* New statistical analyses
* Teamwork
* Communication, writing, and presentation skills
* Visualization skills

**COURSE POLICIES**

**HEALTH AND SAFETY**: The COVID-19 pandemic is still present and serious. While our class is meeting remotely, I want to remind you of the campus policy. Before entering class, you should have completed your daily health assessment. While you are in class on campus, you are required to: sit in your designated seat, maintain physical distance, wear your facial mask covering, always cough or sneeze into your elbow or tissue, use the materials provided to clean your desk and chair before and after use, and adhere to other public safety protocols and directives for your specific classroom/lab/studio.

Students who do not follow these health and safety requirements will be instructed to leave class immediately. Students who violate this protocol will need to leave the classroom and MAY be marked absent. Repeated violations of these health-saving protocols may lead to sanctions under the [Student Code of Conduct (3344-83-04 [E] and [Z])](https://www.csuohio.edu/sites/default/files/3344-83-04%20-%20eff.%208-17-15.pdf) up to and including suspension or expulsion. The CSU community thanks you for your cooperation!

**ATTENDANCE**: To pass this class, you must attend. Students are strongly encouraged to attend all class meetings. While there are occasionally good reasons to miss class, regular attendance (awake and listening) will assist you in learning. Further, active participation is encouraged and will contribute positively to your grade. Students tend to do well in the tests if they do not miss too many classes. Furthermore, students are expected to be aware of any changes in the dates of assignments or tests. All handout materials will be posted on Blackboard.

* Attendance will be taken at every class. If you do not attend class regularly, you will not pass.
* Attendance will be taken into consideration for borderline (1%) final grade assignments.
* If you are late to class or leave early, please do so with minimal disruption to the classroom environment.

**Absence accomodations:** Absences required by religious observance, disability and Title IX accommodations, university-authorized activities, and military service should be made at the beginning of the semester (the end of day on the University’s Last Day to Drop as noted at the top of the syllabus). The request should be made in writing and must include dates, reasons, duration of absence. For disability and Title IX accommodations, university-authorized activities, and military service, you must provide your instructor with appropriate documentation.

**CELL PHONES**: Cell phones should be turned off or placed on vibrate during class. *Test messaging, checking e-mail, and web surfing are all not appropriate when the instructor is talking or you are doing class work.* Such behavior is grounds for removal from the classroom. Cell phone that are visible during exams, even if not being used will result in a zero for that assessment.

**ACADEMIC HONESTY**: Acts of academic dishonesty (cheating, plagiarism-includes not citing sources, submission of work for more than one class, fabrication, fraud, etc.) are expressly forbidden. Cheating includes copying or receiving help from another student on exams or quizzes and all work that is expressly an individual assessment. Merely copying someone’s work or allowing someone to copy your work is also considered cheating. Additionally, attaching student names to a group project that did not contribute substantially to the final work product is also cheating. Infringements will be dealt with according to CSU policy. If cheating occurs, the student will receive a grade of 0 for that component of the course. If cheating occurs on the final exam, the student will receive a grade of F in this course. Information regarding the official CSU policy regarding cheating and plagiarism can be found in the CSU Code of Student Conduct at [www.csuohio.edu/studentlife/StudentCodeOfConduct.pdf](http://www.csuohio.edu/studentlife/StudentCodeOfConduct.pdf)

**GRADE DISPUTE ETIQUETTE:** If you feel that an assessment (quiz, project, or examination) was graded incorrectly, these are the steps to follow.

1. Politely speak to the instructor. Make an appointment by email or speaking to the professor after class. Bring the assessment to the meeting. Kindly ask why points were deducted from your total. It is your right to know to how you were graded.
2. After meeting with the faculty, if you still feel your grade does not reflect the value of your work, you can make an appointment to see the chair of the department. To make an appointment, submit an electronic request using <https://www.csuohio.edu/sciences/mathematics/meeting-request-with-math-chair>
3. After meeting with the chair, if you still feel your grade does not reflect the value of your work, you can fill out a grade dispute petition at <https://www.csuohio.edu/sciences/sites/csuohio.edu.sciences/files/media/advising/documents/Grade%20Dispute.pdf>

Please note that bypassing any of these steps will NOT result in speedier resolution. In fact, it will delay the resolution of the matter.

COURSE WITHDRAWALS: The last day to drop (without a “W”) and the last day to withdraw are at the top of the syllabus. Withdrawing from the course may put you in violation of the federally mandated standards for academic progress (SAP) that you must maintain to be eligible for financial aid. You may refer to <http://www.csuohio.edu/moneysmarts/financial-impacts-drops-and-withdrawals> about the implications of withdrawing from the course for your financial aid or visit Campus 411.

OFFICE OF DISABILITY SERVICES: Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Disability Services at (216)687-2015. The Office is located in Rhodes West 210. Accommodations need to be requested in advance and *will not be granted retroactively*.

**Office of Institutional Equity**: Federal law, including Title IX, and University policy require that CSU address discrimination, harassment and sexual violence and enable students affected by these issues to have the same opportunity to succeed as other students. The Office for Institutional Equity (OIE) provides information, identifies resources, and issues academic and other accommodations. Any student affected by discrimination, harassment and/or sexual violence and seeking assistance should contact OIE at 216-687-2223 or OIE@csuohio.edu or visiting AC 236.

Faculty members are Responsible Employees who have a duty to report to OIE when students disclose experiences with discrimination, harassment and/or sexual violence. Faculty members’ duty to report to OIE includes disclosures made by students in class or in autobiographical and/or nonfiction writing assignments**.**

**STUDENT WORK FOR COURSE PORTFOLIO**: The professor reserves the right to retain, for pedagogical reasons, either the original or a copy of your work submitted either individually or as a group project for this class. Students’ names will be deleted from any retained items.

**OTHER RESOURCES / ASSISTANCE TOWARDS SUCCESS:** The instructor will place additional resources on Blackboard. If you find other resources that you think may be helpful to your classmates, please give them to the instructor for placement on Blackboard.

**TENTATIVE SCHEDULE**: This is a course on consulting which has a huge emphasis on time management. As each topic is introduced, the class, as the consultant, will discuss the parameters and deadlines of the consulting project with the client (either the instructor or the client).