COURSE OVERVIEW

Instructor

Instructor: Lumarie Pérez-Guzmán, Ph.D.

Email address: perez-guzman.1@osu.edu

Office hours: By appointment

Class: Tuesdays and Thursdays 3:00-3:55 pm; Ag Admin #108

Lab: Monday 3:45pm or Thursday 4:00 pm ; Kottman Hall 114.

Course description

This is an introductory data analysis course that will focus on understanding and applying basic statistical concepts, problem solving, interpreting and presenting the results of statistical analysis. Topics include descriptive statistics, variability, correlation, regression, probability, the normal distribution, samples, sampling distributions, confidence intervals, hypothesis testing, analysis of variance, Chi-square tests, and interpretation of findings. We will also cover the presentation of findings and use statistical software programs.

The overall goal is to obtain working knowledge of statistics, data analysis procedures and exposure to using Excel and R that will be useful in understanding academic and other literature, preparing for advanced statistics courses, and involvement in research.

Course learning outcomes

By the end of this course, students should successfully be able to:
• understand basic statistical concepts and terminology
• solve problems by applying the appropriate statistical concepts and methods
• interpret and communicate the results of statistical analyses
• gain a greater appreciation for statistics and data analysis
• learn statistical software programs for data analysis (R and Excel)

COURSE MATERIALS AND TECHNOLOGIES

This course meets a General Education requirement in Data Analysis. According to the OSU guidelines:

“Courses in Data Analysis develop students’ understanding of basic concepts of statistics and probability, comprehension of methods needed to analyze and critically evaluate statistical arguments, and recognition of the importance of statistical ideas. Students will develop skills in drawing conclusions and critically evaluating results based on data.”

Textbooks

REQUIRED


RECOMMENDED/OPTIONAL

• Urdan, Timothy C. Statistics in Plain English, 2nd or 3rd Edition.

Other Materials:

• Basic calculator. No cell phone calculators or programmable graphing calculators allowed on exams

Course technology
For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** [http://ocio.osu.edu/selfservice](http://ocio.osu.edu/selfservice)
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

**REQUIRED SOFTWARE**

- **Microsoft Office 365:** All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft’s Student Advantage program. Full instructions for downloading and installation can be found [https://ocio.osu.edu/kb04733](https://ocio.osu.edu/kb04733).

**GRADING AND FACULTY RESPONSE**

How your grade is calculated

<table>
<thead>
<tr>
<th>ASSIGNMENT CATEGORY</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam #1</td>
<td>200</td>
</tr>
<tr>
<td>Exam #2</td>
<td>200</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200</td>
</tr>
<tr>
<td>Weekly homework assignments (12)</td>
<td>240</td>
</tr>
<tr>
<td>Labs/lab activities (12)</td>
<td>120</td>
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<tr>
<td>Weekly online quizzes (10)</td>
<td>20</td>
</tr>
<tr>
<td>Journal article analysis</td>
<td>20</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
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</tbody>
</table>

*See course schedule, below, for due dates.*

**Late assignments**
More information about the assignments and activities will be presented in class. All assignments are due at the beginning of class unless otherwise stated. Any assignments turned in after the conclusion of the class period will be considered late and will receive a 25% penalty. For each additional day the assignment is late, a 25% penalty will be deducted from the final grade. No assignment will be accepted after 3 days from when it is due, unless documentation of a valid excuse is provided. Scanned and e-mailed copies are not accepted. All homework assignments must be written legibly, with answers clearly marked by circling or putting a box around them. All pages must be stapled together.

Grading scale

93–100: A
90–92: A-
87–89: B+
83–86: B
80–82: B-
77–79: C+
73–76: C
70 –72: C-
67 –69: D+
60 –66: D
Below 60: E

PARTICIPATION AND ATTENDANCE

Student participation

Attendance and participation are very important for your success in this course. Attendance is expected.

POLICIES FOR THIS COURSE

• Cell phones and laptops: Please, silence your phones during class. No surfing the internet (checking email or Facebook), doing assignments or texting during class allowed in class or lab unless designated for a specific learning activity by the instructor. This policy will be strictly enforced, and violations will result in deductions from your final grade.
• **Recording and photography:** No recording of lectures or photography allowed in class. If you are concerned about your ability to follow along in class, please talk with the instructor and meet with the teaching assistant.

• **Computer lab:** Unless otherwise specified, lab sections will meet in Kottman Hall 114. On some occasions, the class will meet in another location. All computer lab activities will be turned in the day of the lab. Therefore, if you miss lab, you will not earn points for the day unless excused or special arrangements are made with the instructor.
  - You are expected to attend the computer lab section that you signed up for. Only in limited situations and with prior permission of the instructor, will you be allowed to change lab sections.

• **Exams:** Exams will take place on the specified dates and times. Only in rare, extenuating circumstances can they be taken early or late, and this will require documentation by university authorities.

• **Online quizzes:** Throughout the semester, 10 weekly online quizzes will be assigned for you to complete (2 points each). These quizzes are based on reading from the textbook and material covered in lecture. With the exception of the first week of class, the quizzes will be given on the same weeks as lab, with a bonus quiz the week of Lab 12. To get credit, the quiz must be completed by each Friday at 5 p.m. The quizzes are not graded, but are designed to help you further understand the concepts.

• **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you’ve explored in previous courses, please discuss the situation with me.

• **Concerns:** If you have concerns about the course, please schedule a time to meet with the instructor or teaching assistant to discuss them. Any questions regarding grades must be received within one week of receiving the grade.

**OHIO STATE’S ACADEMIC INTEGRITY POLICY**

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University’s *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University’s *Code of Student Conduct* and this syllabus may constitute “Academic Misconduct.”
The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University’s Code of Student Conduct is never considered an “excuse” for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages (COAM Home)
- Ten Suggestions for Preserving Academic Integrity (Ten Suggestions)
- Eight Cardinal Rules of Academic Integrity (www.northwestern.edu/uacc/8cards.htm)

Your mental health

A recent American College Health Survey found stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other and alcohol use among the top ten health impediments to academic performance. Students experiencing personal problems or situational crises during the quarter are encouraged to contact the College of Pharmacy Office of Student Services in room 150 Parks Hall (614-292-5001) OR OSU Counseling and Consultation Services (614-292-5766) for assistance, support and advocacy. This service is free and confidential.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
**Requesting accommodations**

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, contact your instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, please contact the Student Life Disability Services at 614-292-3307 or ods@osu.edu to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University.

Go to [http://ods.osu.edu](http://ods.osu.edu) for more information.
## COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics, Readings, Assignments, Deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/09-01/11</td>
<td>Chapters 1 &amp; 2: Introduction and Frequency distributions</td>
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<tr>
<td>2</td>
<td>01/16-01/18</td>
<td>Chapters 2 &amp; 3: Frequency distribution &amp; Central tendency</td>
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<tr>
<td>3</td>
<td>01/23-01/25</td>
<td>Chapters 3, 4 &amp; 5: Central tendency, Variability, Descriptive stats</td>
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<tr>
<td>4</td>
<td>01/30-02/01</td>
<td>Chapters 5 &amp; 6: Correlation and regression</td>
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<tr>
<td>5</td>
<td>02/06-02/08</td>
<td>Chapters 6 &amp; 7: Theoretical distribution; probability</td>
</tr>
<tr>
<td>6</td>
<td>02/13-02/15</td>
<td>Chapter 7: Normal distribution</td>
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<tr>
<td>7 **</td>
<td>02/20-02/22</td>
<td><strong>Exam #1 (Chapters 1-7); 02/22: Chapter 8: Sampling</strong></td>
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<tr>
<td>8</td>
<td>02/27-03/01</td>
<td>Chapters 8 &amp; 9: Hypothesis testing</td>
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<tr>
<td>9</td>
<td>03/06-03/08</td>
<td>Chapter 9: Null Hypothesis</td>
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<tr>
<td>10</td>
<td>03/13-03/15</td>
<td>Spring break (Yay!!)</td>
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<tr>
<td>11</td>
<td>03/20-03/22</td>
<td>Type I and II error; Chapter 10: Hypothesis testing</td>
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<tr>
<td>12</td>
<td>03/27-03/29</td>
<td>Chapter 10: the 2-sample example, independent sampling</td>
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<tr>
<td>13 **</td>
<td>04/03-04/05</td>
<td>Chapter 10: paired t-Test; <strong>Exam #2 (Chapters 8-10)</strong></td>
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<tr>
<td>14</td>
<td>04/10-04/12</td>
<td>Chapter 11: ANOVA</td>
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<td>15</td>
<td>04/17-04/19</td>
<td>Chapters 12 &amp; 14: Factorial design &amp; Chi square tests</td>
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<tr>
<td>16</td>
<td>04/24-04/26</td>
<td>Review week</td>
</tr>
<tr>
<td>17 **</td>
<td>04/27 (Friday)</td>
<td><strong>Final (Chapters 11, 12 &amp; 14); Group meets at 2:00pm</strong></td>
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