GENB 2300 – Business Statistics

Fall 2025 – University of Texas at Tyler
Instructor: Dr. Cecilia Cuellar
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Office Hours: By appointment
Class Meetings: Monday & Wednesday 2:30-3:55 pm
Location: COB 251

Course Description

This course introduces students to the principles and applications of business analytics. Using real-world data and Excel and introduction to R programming, students will learn descriptive, predictive, and prescriptive analytics techniques to support business decision-making. Topics include data visualization, descriptive statistics, probability, data wrangling, statistical inference, and regression analysis. Emphasis will be placed on applying analytical tools in practical business contexts.

Required Materials

Book:

- **Business Analytics**, 5th Edition, by Jeffrey D. Camm, James J. Cochran, Michael J. Fry, Jeffrey W. Ohlmann. Copyright © 2024, Cengage Learning.

Software:

- **Access to Microsoft Excel**. The full Microsoft Office suite, including Excel, is available for you as a student from UT Tyler IT at https://www.uttyler.edu/it/office365/365-proplus-students.php. It is suggested that you install Excel on your computer and install the "Data Analysis" module, which is free and required for some assignments.
- **Access to RStudio.** You will be using R and RStudio for data analysis on this course. Both programs are free and open source. You can download and install them directly:
  – R: https://cran.r-project.org
  – RStudio Desktop: https://posit.co/download/rstudio-desktop/
  If you prefer not to install software, you may also use Posit Cloud (formerly RStudio Cloud), which allows you to run RStudio in your web browser without installation: https://posit.cloud

Course Learning Outcomes

By the end of this course, students will be able to:

1. Describe the random processes underlying statistical studies.
2. Calculate and use probability in solving business problems.
3. Compute and interpret descriptive statistics.
4. Compute and interpret measures of central tendency and dispersion.
5. Calculate expected values to evaluate multiple outcomes of a decision.
6. Describe, interpret, and apply discrete and continuous probability distributions.
7. Construct and interpret confidence intervals for means and proportions.
8. Formulate, perform, and interpret hypothesis tests (one and two population parameters).
9. Calculate, evaluate, and interpret simple linear correlation/regression.
10. Use statistical software to graph, compute, and analyze statistical data.

Grading

Component	Weight
Quizzes	15%
Data Analysis Labs	25%
Midterm Exam	25%
Final Exam	35%
Attendance Bonus	+10 pts to final grade if you attend all classes

Quiz (15%): Students' learning will be also assessed by quizzes (**due: 11:59pm, Sunday**). Quizzes will be open book. Two attempts at each weekly quiz, where you receive the highest grade of the attempts made***. Late submissions will be penalized by 10% for any full or partial day late up to 3 days following the due date***. Submissions will be disabled after the third day.

Data Analysis Labs (25%): Homework problems will be assigned to help students mainly learn quantitative tools and understand business analytics deeply (**due: 11:59pm, Sunday**). ***Late submissions will be penalized by 10% for any full or partial day late up to 3 days following the due date***. Submissions will be disabled after the third day.

- You are required to turn in all assignments (Excel files) on Canvas. The guideline/template for assignments will be provided on Canvas. Please make sure to upload an appropriate Excel file (.xlsx or .xls). Note that an Excel file whose name starts with "~$" is a temporary file created by Excel when you open a workbook. Do not upload the temporary file that cannot be read in the grading system.

- If you show the right process to solve each question, you can expect to have partial points, although you provide wrong answers. Without showing your process in Excel, you will not get full credit even though you provided a correct answer.

Exams (60% of grade): There will be two in-person exams – Midterm (25%) and Final (35%). The exams will include multiple choice, true/false formats, problems and in the final exam (an applied problem using Excel). Your exams will **NOT** be open book, so it is important to prepare for them properly and in a timely manner. Late submissions will not be accepted.

Course Policies

- **Attendance:** Strongly encouraged; mandatory for bonus points.
- **Late Work:** Assignments submitted late will incur a penalty unless prior arrangements are made. Please look at the **Appendix on: Late Submissions & Attendance Policy**
- **Academic Integrity:** All work must comply with university standards on academic honesty.
- **Technology:** I encourage you to use your **OneDrive cloud storage** to work on and save your lab assignments. Please use the **classroom computers** for completing your labs to ensure you have access to all required software and resources.
- **Artificial Intelligence:** For GENB 2300, Business Statistics, AI is permitted only for specific assignments or situations, and appropriate acknowledgment is required. For Class Discussion Posts, you/we may leverage AI tools to support your learning and allow you to explore how AI tools can be used or better understand their benefits and limitations. Learning how to use AI is an emerging skill, and we will work through the limitations of these evolving systems together. AI is NOT to be used to solve homework assignments, or the Mid-Term or Final Exams.

Grading Scale: Students will be evaluated based on the grading scale below.

A: 90% - 100%
B: 80% - 89.9%
C: 70% - 79.9%
D: 60% - 69.9%
F: ≤ 59.9%
Note: Final grades will not be rounded or adjusted based on proximity to these cut-points.

Lab Sessions

- Labs take place during the Monday class meeting.
- Sessions are facilitated by the Teaching Assistant (TA).
- Students will use Excel and R to perform data analysis, applying concepts from the current chapter.
- Each lab will include a homework assignment due by the end of the week.
- Attendance is required to receive full credit for lab activities.

Tentative Schedule – Fall 2025

Week	Dates	Topics / Chapters	Labs / Assignments
1	Aug 25–29	Introduction to Business Analytics	No Lab / Quiz 1
2	Sept 1–5	Excel Basic I	Lab-HW 1 (Excel Basic)
3	Sept 8–12	Visualization	Lab-HW 2 (Data Visualization)
4	Sept 15–19	Descriptive Statistics	Lab-HW 3 (Descriptive Statistics) /Quiz 2
5	Sept 22–26		
6	Sept 29–Oct 3	Probability	Lab-HW 4 (Probability) / Quiz 3
7	Oct 6–10	**Midterm Exam Prep**	**Midterm Exam**
8	Oct 13–17	Statistical Inference I	Lab-HW 5 (Statistical Inference I) / Quiz 4
9	Oct 20–24		
10	Oct 27–31	Statistical Inference II	Lab-HW 6 (Statistical Inference II) / Quiz 5
11	Nov 3–7	Linear Regression	Lab-HW 7 (Linear Regression) / Quiz 6
12	Nov 10–14		
13	Nov 17–21	**Final Exam Prep**	
14	Nov 24–28	Thanksgiving Break – No Class	—
15	Dec 1–5	**Final Exam**	

The professor reserves the right to change the outline and any other aspect of this syllabus throughout the semester.

Exams

- **Midterm Exam:** Covers Chapters 1–5; scheduled Week 7.
- **Final Exam:** Covers Chapters 6–8; scheduled during finals week (exact date TBD).

University Policies and Information Highlights*

Final Exam Policy

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members are required to maintain student final examination papers for a minimum of three months following the examination date.

Academic Honesty and Academic Misconduct

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the Student Conduct and Discipline policy in the Student Manual of Operating Procedures (Section 8).

COVID Guidance

Information for Classrooms and Laboratories: It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID and any new threats that may be developing. Be diligent about preventive measures such as washing hands, covering sneezes/coughs, social distancing, and vaccinations, which have proven to be successful in slowing the spread of viruses. Encourage those who don't feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce exposure (CDC quarantine/isolation guidelines). Please work with your faculty members to maintain coursework and please consult existing campus resources for support.

***You can find the details of university policies about the following areas in the "University Policies and Information" page on the class Canvas site.**

- Withdrawing from Class
- Incomplete Grade Policy
- Grade Appeal Policy:
- Disability/Accessibility Services
- Military Affiliated Students
- FERPA
- Absence for Official University Events or Activities
- Absence for Religious Holidays
- Campus Carry.

Appendix: Late Submission & Attendance Policy

Late Submission Policy

1. **Assignments & Labs:**

   Late submissions will be penalized by 10% for any full or partial day late up to 3 days following the due date. Submissions will be disabled after the third day.

2. **Quizzes:**

   Late submissions will be penalized by 10% for any full or partial day late up to 3 days following the due date. Submissions will be disabled after the third day.

3. **Exams:**

   Make-up exams granted only for documented emergencies and must be taken within one week of the original date.

Attendance Policy

- Attendance is recorded each class or lab and tied to the **+10 point** bonus for perfect attendance.
- Arriving more than 15 minutes late counts as an absence.
- More than 2 unexcused absences mean you are no longer eligible for the attendance bonus.
- Excused absences require written proof (e.g., medical, university activity, family emergency).