MATH 237 - BIOSTATISTICS

Fall 2025 Syllabus, Section 001

Times and Location

Section 001: MW 12-1:50 PM in YR0102

Instructor Information

Erica O'Leary **eoleary@towson.edu**
Office: Room 373, 7800 York Road
Office Phone: 410-704-5408
Office Hours:
Monday 10:30-11:30 AM
Tuesday 10:30-11:30 AM
Wednesday 10:30-11:30 AM
Thursday 10:30-11:30 AM
Also available by appointment (in person or via Zoom)

Date of Final Exam

Cumulative final exam date and time:
Friday, December 12, 10:15 AM – 12:15 PM
PUT FINAL EXAM ON YOUR CALENDAR NOW.

Please see course schedule for midterm dates.

Required Materials

- **Biostatistics A Foundation for Analysis in the Health Sciences, 11th edition**, by Daniel and Cross. (Wiley, 2019). These materials are integrated into our course in Blackboard. Through Direct Access you will immediately have access to your digital textbook for a free period during the first two weeks of class. After the free access period, you will be charged $42.00 by the University Billing Office, unless you have opted out by that date. If you are thinking of opting out of purchasing the textbook, please speak to me first.
- **Smartphone with a working camera:** If you miss class the day an assignment is due, your smartphone will be used as a means of scanning your written homework so it can be emailed to me. If you do not have a smartphone, you will need another means of scanning your written work.
- **Calculator**: A calculator is recommended but not required. It does not need to be a graphing calculator, but it should have square root and parentheses. For exams, you will be permitted to use either a handheld calculator, or the Desmos scientific online calculator, found at www.desmos.com/scientific.
- **Excel app**: You will want to download the desktop version if you do not already have it. It is free for TU students. FREE Software!

Course Description

Elementary statistical concepts and their application to the biological and health sciences. Descriptive statistics, estimation techniques, hypothesis testing, analysis of enumerative data, one-way analysis of variance, and simple linear regression and correlation analysis. Excel, Applets, StatKey and statistical packages such as R, SPSS, Statcrunch or MINITAB may be introduced as computational tools. Not open to students who have successfully completed MATH 231 or MATH 330 or to mathematics majors. Core Category 3: Mathematics Group I.C. College Mathematics

MATH 237 Course Objectives

We will cover most of Chapters 1-9 and 12. At the end of the semester, students will be able to:

- Organize, summarize and describe data sets using frequency tables, graphical displays and numerical summary measures.
- Apply basic concepts of statistics to analyze data sets (Confidence Intervals and Hypothesis Testing).
- Analyze a data set containing two variables using correlation, simple linear regression.
- Use statistical software or a statistical software package to analyze one, two or more variable data sets.
- Make statements, decisions, and predictions about one, two or more populations based on sample data using Confidence Intervals, Hypothesis Testing, Correlation and Regression Analysis.

Core 3 Learning Goals

This University Core course is designed to meet the following four learning goals.

1. Construct and evaluate logical arguments.
2. Apply and adapt a variety of appropriate strategies to solve mathematical problems.
3. Recognize and apply mathematics in contexts outside of mathematics.
4. Organize and consolidate mathematical thinking through written and oral communication.

MATH 237 Grading Scheme / Policy

Letter Grade	x = Course Grade
A	$x \geq 93\%$
A-	$90\% \leq x < 93\%$
B+	$87\% \leq x < 90\%$
B	$83\% \leq x < 87\%$
B-	$80\% \leq x < 83\%$
C+	$77\% \leq x < 80\%$
C	$70\% \leq x < 77\%$
D+	$67\% \leq x < 70\%$
D	$60\% \leq x < 67\%$
F	$x < 60\%$

MATH 237 Evaluation

Your final grade will be based on your success in meeting the goals and objectives of this course as demonstrated throughout the semester and in the course assignments and examinations. The breakdown is shown here, and the individual components are elaborated upon below.

In general: If you are having a personal crisis that is affecting your schoolwork, please talk to me.

20%	Exam 1 – Chapters 1-3
20%	Exam 2 – Chapters 4-6
20%	Exam 3 – Chapter 7
25%	CUMULATIVE Final Exam
10%	Lab Score
5%	Homework Score
100%	**TOTAL**

Exams: The three midterm exams will be taken during class. The final exam will be taken according to TU's published final exam schedule. Note the date and time of the final exam posted earlier in this syllabus.

Labs: There will be two (2) labs which will be deeper versions of the homework problems. The Lab Score will be worth 10% of your Course Grade.

Homework: The only way to learn mathematics is by doing problems. Homework will be assigned nearly every class. Homework assignments will be announced in class and posted on Blackboard. I will accept homework up to one class after it is due without asking for an extension. If you need more time, please ask. You should be using paper and pencil to work out most of the homework problems. Please write legibly and staple or paperclip multiple sheets together. If you have questions on specific homework questions, please email me directly at eoleary@towson.edu using your TU email. Please include a photo of your handwritten work and a specific question so I can respond to your question more completely. Any mini-quizzes or other in-class assignments will be counted in this homework category. IMPORTANT: A high homework grade can be deceptive because it is treated as a learning tool for you. You can ask questions of me and even work together (do NOT copy). A running total of your homework scores will be kept. This number will be divided by the total number of points assigned to give a Homework Score which is worth 5% of your Course Grade.

MATH 237 Key Dates

- Monday, August 25 – First day of classes
- Monday, September 1 – Labor Day Holiday, University closed
- Wednesday, September 3 – Last day to drop a course with no grade posted to academic record; last day to add (full semester courses)
- Monday, November 3 – Last day to withdraw with a grade of "W"; last day to change to Pass or Audit grading option (full semester courses)
- Wednesday, November 26 - Sunday, November 30 – Thanksgiving Break, no classes
- Monday, December 8 – Last day of classes

MATH 237 Remarks and Policies

1. Each student is expected to follow the policies and obey the rules and regulations of Towson University and should expect these rules and regulations to be enforced.
2. **Communication**: I will communicate with the entire class via announcements in Blackboard (which will generally be emailed to you, as well), and with individual students via their Towson University email. You are expected to check both of these regularly and are expected to respond as appropriate. Be sure to promptly read any email you receive from me - sometimes it will contain information that you will want to know about right away. If you want to reach me, ***send me an email from your TU email address***; please do *not* message me through Blackboard.
3. **Support for Course Success:** If you do not understand a concept covered in class, please reach out for help right away so you do not fall behind. I am available during my office hours, by appointment, and via email. In addition, there is tutoring available in the Spence Math Tutoring Lab in YR 109. Take advantage of it!
4. **Cell phones** in class should be set to vibrate or turned off. Students are expected to leave the room when receiving emergency phone calls. I strongly urge you to put your phone away during class - it's just too much of a distraction. ALL CELLPHONES MUST BE POWERED OFF DURING EXAMS.
5. **Late work:** See the section on homework for a discussion of the late policy on those assignments. **A student who misses an exam will receive a zero, except in the case of an excused absence**. University policy regarding excused absences can be reviewed here: attendance policy. Talk to me!
6. **Student Workload Expectations:** Federal and State regulations require that students are expected to spend at least two hours outside of the classroom working on course-related activity for every one in-class hour. For this class, that means the expectation is that you will spend at least eight to twelve hours per week outside of the four "hours" of classroom time for success in MATH 237.
7. My lectures and course materials, including, but not limited to power point presentations, tests, outlines, and similar materials, are protected by copyright. You may take notes and make copies of course materials for your own use; however, you may not, nor may you allow others to, reproduce or distribute lecture notes and course materials publicly, whether or not a fee is charged, without my express written consent. Similarly, you own copyright in your original papers and exam essays. If I am interested in posting your answers or papers on the course web site, I will ask for your written permission.
8. **Professionalism** is expected from all of my students:
    a. The student attends every class, arriving on time and staying through the end of class.
    b. **No electronic devices** besides calculators and tablets used as

notebooks are to be used in any way during class unless otherwise explicitly directed. In particular, use of phones or computers as “alternative entertainment” during class is prohibited. Obviously, this type of a distraction is detrimental to your learning. It is also rude and distracting to your instructor and classmates. A student who repeatedly has trouble complying with this requirement may be asked to keep their cellphone and laptop in their backpack.

c. The student conducts themself during class in a mature manner that does not distract others, including the instructor.
d. The student participates in class activities and discussions in a mature manner.
e. The student demonstrates reasonableness/flexibility in changes to the schedule or syllabus.
f. The student communicates with the instructor and peers in a constructive, professional manner.
g. The student demonstrates a commitment to learning.
h. The instructor reserves the right to ask a student who demonstrates any disruptive behavior (including the use of cell phones) to leave the classroom for that session. If the situation warrants it, the student will be reported to University Administration.

9. **Diversity Statement:** Towson University values diversity and fosters a climate that is grounded in respect and inclusion, enriches the educational experience of students, supports positive classroom and workplace environments, promotes excellence, and cultivates the intellectual and personal growth of the entire university community. Should you feel that you are experiencing a negative environment related to diversity issues or cultural sensitivity, we encourage you to contact the Math Department's Diversity Coordinator, Dr. Felice Shore, at fshore@towson.edu or 410-704-4450.
10. **Mental Health and Wellness:** We all experience emotional distress and personal difficulties as a normal part of life. The Towson University Counseling Center (TUCC) provides free and confidential mental health services that are not connected to your academic record in any way. If you are experiencing mental health challenges, I strongly encourage you to take advantage of TUCC’s services. For more information about TUCC, please visit their website at https://www.towson.edu/counseling/. To make a same-day appointment or for after-hours crisis assistance, please call 410-704-2512.

Academic Integrity Policy

The academic integrity policy for this course is consistent with the TU Academic Integrity Policy. The policy can be reviewed here academic integrity policy.

Students with Disabilities Policy

This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with Accessibility & Disability Services (ADS), University Union, Suite 146, 410-704-2638 (Voice) or 410-704-4423 (TDD). The office is open Monday-Friday from 8:30 AM-4:30 PM. Students who suspect that they have a disability but do not have documentation are encouraged to contact ADS for advice on how to obtain appropriate evaluation. A memo from ADS authorizing your accommodation is needed before any accommodation can be made.

ADS services

Attendance / Absence Policy

Students are expected to attend all classes. Consistent attendance offers the most effective opportunity for students to understand concepts, materials and expectations of those courses in which they are enrolled. The attendance policy for this course is consistent with the TU attendance/absence policy. To view the policy in full, please visit attendance policy.