MATH 305: Statistics for Technology
Fall 2024 Course Syllabus

NJIT Academic Integrity Code: All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: An introduction to the modern concepts of statistics needed by engineering technologists. Topics include organization of data, descriptive statistics, discrete and continuous probability distributions, sampling distribution and designs, estimation -- one and two populations, tests of hypotheses.

Number of Credits: 3

Prerequisites: (Intended for students in Engineering Technology.) MATH 111 with a grade of C or better, or MATH 132 with a grade of C or better, or MATH 138 with a grade of C or better.

Course-Section and Instructors:

Course-Section	Instructor
Math 305-101	Professor D. Schmidt

Office Hours for All Math Instructors: Fall 2024 Office Hours and Emails

Required Textbook:

Title	*Elementary Statistics: A Step By Step Approach*
Author	Bluman
Edition	10th
Publisher	McGraw-Hill
ISBN #	978-1260042009

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, November 11, 2024**. It will be strictly enforced.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Homework	20%
Quizzes	20%
Midterm Exam	30%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	88 - 100	**C**	65 - 74
B+	84 - 87	**D**	55 - 64
B	79 - 83	**F**	0 - 54
C+	75 - 78		

Attendance Policy: Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the Math Department's Attendance Policy. This policy will be strictly enforced.

Homework and Quizzes: Integrity – Your work is expected to be your own. Help from tutors, classmates etc is permitted on homework but you are responsible for mastering the material. Homework problems will be collected every class meeting; all problems should be completed to build understanding, however only those problems marked with an asterisk (*) are required and graded. A short quiz based on the homework will be given at the beginning of every class meeting. There are no make-up quizzes. Late homework and absent homework will be accepted no more than 6 days late (no penalty for absent homework, half credit for late homework).

Exams: There will be one midterm exam during the semester and a cumulative final exam during the final exam week:

Midterm Exam	Week 7
Final Exam Period	December 15 - December 21, 2024

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the Math Department's Examination Policy. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam

will be missed.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Fall 2024 Hours)

Further Assistance: For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for Instructor Office Hours and Emails.

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you need an accommodation due to a disability, please contact the Office of Accessibility Resources and Services at oars@njit.edu, or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

https://www.njit.edu/accessibility/

Important Dates (See: Fall 2024 Academic Calendar, Registrar)

Date	Day	Event
September 2, 2024	Monday	Labor Day
September 3, 2024	Tuesday	First Day of Classes
September 9, 2024	Monday	Last Day to Add/Drop Classes
November 11, 2024	Monday	Last Day to Withdraw
November 26, 2024	Tuesday	Thursday Classes Meet
November 27, 2024	Wednesday	Friday Classes Meet
November 28 to December 1, 2024	Thursday and Sunday	Thanksgiving Recess - Closed
December 11, 2024	Wednesday	Last Day of Classes
December 12, 2024	Thursday	Reading Day 1
December 13, 2024	Friday	Reading Day 2
December 15 to December 21, 2024	Sunday to Saturday	Final Exam Period

Course Outline

Week #	Sections	Topic	Homework Problems
1	**1.1, 1.2, 2.1, 2.2**	Introduction, Frequency Distribution, Histograms	Pg 10 #2*, (11-16)*, pg 51 #9, 10, 11, 12, 15*,18* (also make histograms for the data in #15 and 18 as well as describe the shape of the distribution)*
2	**3.1, 3.2, 3.3**	Means, Medians, Variance, Standard Deviation, Percentiles	Page 123 #9*, 10, 27*, 33, 34*, pg 143 #2, 7*, 14, pg 159 #17*,22*, 24
3	**2.3, 3.4**	Stem and Leaf Plots, Box Plots	Pg 92 #17, 18, 19*, pg 172 #1, 2*,7, 8*, 11*, 12*, 15, 17
4	**4.1, 4.2, 4.3**	Probability, Sample Space	Pg 198 #10, 14*, 15*, 17*, 23*, 25, pg 206 #4*, 9*, 12, 16*, 17, pg 222 #7*, 8, 10, 12*, 15
5	**4.4, 4.5**	Counting Problems	Pg 235 5*, 7, 8*, 23*, 28, 36, 38*, 69, pg 245 #10*, 11, 13*
6	**5.1, 5.2, 5.3**	Discrete Probability Distributions, Binomial Distribution	Pg 263 #2-4, 8*, 9*, 11, 21, 31*,36*, pg 272 #1*, 4*, 20, pg 282 #1*, 5, 7*, 14, 28*
7	**MIDTERM EXAM**		
8	**6.1, 6.2**	Normal Distribution	Pg 322 #3, 4, 11*, 14*, 15*, 20, 32*, 35*, 43*, 46, 49*, 50, pg 337 #2*, 5, 10*, 20*, 29, 36
9	**6.3, 6.4**	Central Limit Theorem, Normal Approximation to Binomial Distribution	Pg 352 #9*, 16, 19, 24*, pg 360 #10*, 12*, 16, 17, 21
10	**7.1, 7.2, 7.3**	Confidence Intervals on the Mean, Proportions, and Standard Deviations	Pg 379 #10*, 13, 17*, 18, 21*, 23, pg 387 #5*, 7, 11*, 18, 20*, pg 395 #3, 4*, 6*, 9, 15*, 19, 22
11	**8.1, 8.2, 8.3**	Intro to Hypothesis Tests, Hypothesis Tests for Means	Pg 426 #13, 14*, pg 435 (do both RR and p approaches for all problems) #2*, 6*, 8, 12, pg 449 (do both RR and p approaches for all problems) #8*, 9, 12, 14*
12	**8.4, 9.1**	Hypothesis Test for Proportions, Two Means	Pg 457 (do both RR and p approaches for all problems) #5*, 7, 11*, 16, 20*, pg 494 #7, 10*, 12, 17*, 20, 22
13	**9.3, 10.1, 10.2**	Hypothesis Test Paired t, Linear Correlation, Regression	Pg 515 #2, 3*, 4, 7*, 9*, 10, pg 561 #11, 13*, 15*, pg 571 #13*, 15, 18*
14	REVIEW		
15		**FINAL EXAM: December 15 – 21, 2024**	

Updated by Professor D. Schmidt - August 2024
Department of Mathematical Sciences Course Syllabus, Fall 2024