

UNIVERSITY OF MASSACHUSETTS DARTMOUTH

Course: MTH 147-7102 – Elementary Statistics – Summer 2024

Time: ONLINE

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Tutoring: Business Center (Zoom Meetings, (508) 999-8709)

1. COURSE DESCRIPTION

This course provides a survey of statistical methods, with examples taken from sociology, psychology, education, and related fields. A minimum background in mathematics is assumed. Topics include descriptive statistics, measure of central tendency and variability, probability, binomial and normal distributions, estimation, correlation and regression and hypothesis testing.

MTH 147 is part of Cluster 1 of UMASS Dartmouth. Cluster 1D specifically focuses on the acquisition of quantitative and mathematical reasoning. This emphasis is placed in the curriculum because mathematics is the foundation of science and technology.

2. LEARNING OUTCOMES

Learning outcomes specific to this course:

1. Organize, summarize, present data using tables, charts and other graphical frequency distributions.
2. Calculate descriptive statistics (mean, medians, quartiles, variance, standard derivation) by hand and technology, explain the mathematical information verbally and graphically
3. Assign probabilities relative frequency, classical, counting principle to events
4. Computing probabilities
5. Determine and interpret probabilities and (position) values for discrete and continuous random variables using characteristics of Binomial and Normal Distributions.
6. Construct and interpret the confidence intervals by computing the critical values and the margin of errors, estimate the means for small and large samples from normal distribution with standard deviation known or known,.
7. Perform one sample hypothesis test on mean.
8. Estimate the parameters of the regression equation; calculate the correlation coefficients for investigating the relationship between two random variables.
9. Develop good analytical and problem-solving skills through class activities, team work, and using the tools (such as TI 83 or TI-84).

Learning outcomes with respect to Cluster 1D – Mathematics:

1. Recognize when to apply mathematical concepts and methods to problems.
2. Manipulate mathematical expressions to solve for particular variables.
3. Draw conclusions from quantitative information and communicate these conclusions verbally and graphically.
4. Implement mathematical models to obtain accurate or approximate solutions using appropriate tools.
5. Apply mathematical techniques to social and scientific problems.

3. COURSE MATERIAL

TEXT: Fundamental of Statistics, by Sullivan, Pearson, 6th edition. **You are not required to buy the book if you register online**

Website: www.mymathlab.com

Course I.D#: TBA

GRAPHING CALCULATOR: TI-83/TI-84

4. TEACHING PROCEDURES

ONLINE HOMEWORK

A student will begin a chapter by reading the PowerPoint Slides, the Notes, the Objectives & Formulas and the Examples with Videos. There is a wealth of material next to each homework problem to aid the student's learning, including tutorials, videos and links to the text covering the needed material to complete that problem.

A student may attempt a homework problem three or four times. A minimum of 75% is required for every homework before you move to the next homework.

ONLINE TESTS

After two homework sections, there will be a corresponding online test. You must score at least 75% on the homework material.

- If a student successfully scores a 70% or better on the online test, then the student may continue to the next homework section. However you **may** retake the test for a second time in order to improve your grade.
- If a student scores less than 70%, then you **must** take the online test for a second time. You can take every online test twice and the highest grade will count.

FINAL EXAM

The final exam will be given online on the last day of the class (**August 2nd**) and it will be cumulative (Chapters 1 through 10). You will have a 3-hour period to finish it.

5. ACADEMIC POLICIES

Student Behavior

Students are expected to follow the student code of conduct within the classroom settings. The student code of conduct is available at:
<https://www.umassd.edu/studentaffairs/departments/studentconductanddisputeresolution/policies/>

Faculty may ask students to leave if the faculty member(s) determines that the code of conduct has been violated and a student is creating an environment that is unsafe.

Attendance Policy

The attendance policy is available in the “Student Enrollment” section of the catalog:
http://catalog.umassd.edu/content.php?catoid=47&navoid=3746#Student_Enrollment_Status Faculty are free to augment the attendance policy for their own classes.

Course Withdrawal

View the academic calendar (above) to see the last day to withdraw each semester. The following information is from the undergraduate catalog:

Students may withdraw from courses through the end of the tenth week of classes of the semester via COIN, at the University Enrollment Center or Registrar’s Office. Once processed, a grade of W will be recorded on the transcript. Grades of W do not affect a student’s GPA, but may impact financial aid Satisfactory Academic Progress requirements (www.umassd.edu/financialaid/maintainingaid/). Students who fail to complete this process by the withdrawal deadline will be ineligible for withdrawal and will be graded appropriately by the faculty.

- Students may independently withdraw from a maximum of 18 cumulative credits. The college dean or designee must approve withdrawal requests above 18 and up to 24 credits. After a student has exceeded 18 credits of withdrawals during his or her academic career, the student’s college dean or designee must approve any further withdrawal requests, up to 24 credits. Students with more than 24 withdrawal credits are subject to dismissal from the University by the college. Withdrawal credits granted through an approved Medical Leave of Absence do not apply toward the 18 or 24 credit maximum.
- Students who withdraw from all courses during the semester shall be deemed to have withdrawn from the University and will be subject to this policy and the readmission procedures of the University.

Withdrawal from the University

Students withdrawing or taking a leave of absence from the University of Massachusetts Dartmouth are required to submit a written notification of withdrawal.

The Student Leave of Absence/Withdrawal Form may be obtained from the Student Affairs Office. The last date of attendance will be the date indicated on the form or the date of the last documented academically related activity, whichever is earlier.

<https://www.umassd.edu/financialaid/maintainingaid/withdrawalpolicy/>

Incomplete

According to both the Undergraduate Catalog and Graduate Catalog, an incomplete may be given only in exceptional circumstances at the instructor's discretion. The student must be passing at the time of the request or be sufficiently close to passing. If the work is not completed within one year of the recording of the incomplete grade (I), the grade will become an F.

Grade Appeal Process

Students should be advised that grade appeals need to be filed by specific dates in order for appeals to be heard. For the fall semester, grade appeals are due by the Monday of the second week in January. For the spring semester, grade appeals are due by the Monday of the last full week of May. Information about what can be appealed, who to file a grade appeal with, and what the grade appeal process entails can be found at: <https://www.umassd.edu/acadvising/grades/>

6. ACCOMODATIONS AND SUPPORT POLICIES

Accommodations for Documented Disabilities

In accordance with University policy, if you have a documented disability and require accommodations to obtain equal access in a course, please meet with the course instructor at the beginning of the semester and provide the appropriate paperwork from the Center for Access and Success. The necessary paperwork is obtained when you bring proper documentation to the Center, which is located in Pine Dale Hall, Room 7136, 508-999-8711.

Emotional Health, Violence, Sexual Harassment, and Title IX

The purpose of a University is to disseminate information, as well as to explore a universe of ideas, to encourage diverse perspectives and robust expression, and to foster the development of critical and analytical thinking skills. In many classes, students and faculty examine and analyze challenging and controversial topics.

If a topic covered in this class triggers post-traumatic stress or other emotional distress, please discuss the matter with the professor, or seek out confidential resources available from the Counseling Center, 508-999-8648 or - 8650, or the Victim Advocate in the Center for Women, Gender and Sexuality, 508-910-4584. In an emergency, contact the Department of Public Safety at 508-999-9191 24 hrs./day.

UMass Dartmouth, following national guidance from the Office of Civil Rights, requires that faculty follow UMass Dartmouth policy as a “mandated reporter” of any disclosure of sexual harassment, abuse, and/or violence shared with the faculty member in person and/or via email. These disclosures include, but are not limited to, reports of sexual assault, relational abuse, relational/domestic violence, and stalking. While faculty are often able to help students locate appropriate channels of assistance on campus, disclosure by the student to the faculty member requires that the faculty member inform the University’s Title IX Coordinator in the Office of Diversity, Equity and Inclusion at 508-999-8008 to help ensure that the student’s safety and welfare are being addressed, even if the student requests that the disclosure not be shared.

For counseling support and assistance, go to: <http://www.umassd.edu/sexualviolence/>

7. MYCOURSES

Technical support for myCourses is available 24/7:

- Students can email myCoursesHelp@umassd.edu or call the Student Help desk at 508-999- 8505 during normal business hours. (Mon-Fri 9:00 A.M - 5:00 P.M)
- During off-hours, weekends, and holidays, technical assistance is available for students at <http://umd.echelp.org/>. Support information for all other UMass Dartmouth technologies can be found here:
<http://www.umassd.edu/extension/technicalresources/>

8. TUTORING SUPPORT SERVICES

If you are having difficulty with a class, please:

- Contact the instructor directly using the information listed on the syllabus.
- Contact the Business Center for support with economics, statistics math, and business courses. LARTS Building, Room 010, 508-999-8709

9. EVALUATION POLICY

There will be 4 online tests, 10 online homeworks and a final exam. Every online test will count for 15% of your final grade, every online homework for 2% of your final grade and the final online exam will count for 20% of your final grade.

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| Online Tests | 60% (4 tests, each test counts 15%) |
| Online Final Exam | 20% |
| Online Homework | 20% (10 homeworks, each for 2%) |

10. REGISTER & SIGN IN FOR MYMATHLAB

To register for MyMathLab, you have to go through the following steps:

1. Go to: www.mymathlab.com (same as pearsonmylabandmastering.com)
2. Click **Student** under **Register**.
3. Enter the **Course ID** and click **Continue**. The Course ID is: TBA
4. Sign in or create an account:
 - You already have a Pearson account if you have used one of their online products before. Enter your username and password and click **Sign In**.
 - If you have a Pearson account, but can't remember your sign in information, click **Forgot your username and password**. An email will be sent to you.
 - If you don't have an account, click **Create**. You will create a username and password and add your contact information. Read and accept the license agreement. Click **Create an Account**.
 - **Note: You have a 2-week free trial**
5. Pay for access to your instructor's online course.
 - Use a **credit card** and enter billing and payment information, then review and submit your order. **Note:** If using a parent's credit card be sure to use the correct billing address and put your name in the **Your Name** field, not your parent's name.

To sign in for MyMathLab, you have to go through the following steps:

1. From the home page (www.coursecompass.com), click **Sign in**.
2. Enter your username and password, and click **Sign in**.
3. Your course is listed in the **MyLab / Mastering New Design** section of the page. Click on **MTH 147 (Online), Summer 2024** will take you to the course content.
4. From the course home page, you will use the course **menu** to navigate.

11. SCHEDULE OF WEEKLY ACTIVITIES

| WEEK | CHAPTERS & ACTIVITIES |
|---------------------------------|--|
| Week 1 (June 17 th) | Syllabus & Introduction to MyMathLab CHAPTER 1 - Data Collection - 1.1 Introduction to the Practice of Statistics Online Homework 1 CHAPTER 2 - Summarizing Data in Tables & Graphs - 2.1 Organizing Qualitative Data 2.2 Organizing Quantitative Data: Popular Display Online Homework 2 |

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| <p>Week 2 (June 24th)</p> | <p>CHAPTER 3 - Numerically Summarizing Data - 3.1 Measures of Central Tendency 3.2 Measures of Dispersion 3.4 Measures of Position and Outliers 3.5 The Five-Number Summary and Boxplots</p> <p>Online Homework 3</p> <p>Online Test 1 (Chapters 1, 2 & 3)</p> |
| <p>Week 3 (July 1st)</p> | <p>CHAPTER 4 - Describe the Relationship between Two Variables - 4.1 Scatter Diagrams and Correlation 4.2 Least Squares Regression 4.3 The Coefficient of Determination</p> <p>Online Homework 4</p> <p>CHAPTER 5 – Probability and Probability Distributions - 5.1 Probability Rules 5.2 The Addition Rules and Complements</p> <p>Online Homework 5</p> |
| <p>Week 4 (July 8th)</p> | <p>Online Test 2 (Chapters 4 & 5)</p> <p>CHAPTER 6 - Discrete Probability Distributions - 6.1 Discrete Random Variables 6.2 The Binomial Probability Distribution</p> <p>Online Homework 6</p> |
| <p>Week 5 (July 15th)</p> | <p>CHAPTER 7 - The Normal Probability Distribution - 7.1 Properties of the Normal Distribution 7.2 Applications of the Normal Distribution 7.3 Assessing Normality</p> <p>Online Homework 7</p> <p>CHAPTER 8 - Sampling Distribution - 8.1 Distribution of the Sample Mean</p> <p>Online Homework 8</p> |

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| <p>Week 6 (July 22nd)</p> | <p>Online Test 4 (Chapters 6, 7 & 8)</p> <p>CHAPTER 9 - Estimating the Value of a Parameter - 9.1 Estimating a Population Proportion 9.2 Estimating a Population Mean 9.3 Which Procedure Do I Use?</p> <p>Online Homework 9</p> |
| <p>Week 7 (July 29th)</p> | <p>CHAPTER 10 - Hypothesis Tests Regarding a Parameter - 10.1 The language of Hypothesis Testing 10.2 Hypothesis Tests Regarding a Parameter – 10.3 Hypothesis Tests for Mean σ is unknown</p> <p>Online Homework 10</p> <p>Online Test 5 (Chapters 9 & 10)</p> <p>Final Exam (Chapters 1-10)</p> |