MATH 1680.320

Elementary Probability and Statistics

Fall 2019

MWF 11:00 – 11:50 AM

Instructor: Thomas Calkin
Office Hours: Tuesday 1:00 PM – 2:00 PM, Thursday 11:00 AM - 12:00 PM
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Recitation:	MATH 1680.321	M 8:00 – 8:50 AM	GAB 511	Thomas Calkin
	MATH 1680.322	T 9:00 – 9:50 AM	GAB 511	Thomas Calkin

Course Description: Introductory course to serve students of any field who want to apply statistical inference. Descriptive statistics, elementary probability, estimation, hypothesis testing and small samples.

Prerequisites: TSI Complete

Textbook (Required): Sullivan and Woodbury. *Interactive Statistics: Informed Decisions Using Data*, 2nd edition. Pearson, 2019.

To enhance your learning experience and provide affordable access to the right course material, this course is part of an inclusive access model called Access Day One (AD1). You can easily access the required materials for this course at a discounted price, and benefit from single sign-on access with no codes required in Canvas. UNT will bill you at the discounted price as a course charge for this course. These materials are required to complete the course. You can choose to Opt-Out on or before the first day of class, but you will be responsible for purchasing your course materials at the full retail price and access to your materials may be suspended. For more information and FAQs go to customercare.bncollege.com.

Lecture Notes: Lecture notes for the semester are available on Canvas. I recommend printing them in advance and bringing them to class. This will allow you to focus on the concepts being discussed without having to copy all the information that appears on the PowerPoint slides.

Guided Notebook: You may use the guided notebook found in MyLab Statistics to follow along with the interactive assignments (see below).

Technology: You will be expected to bring to class – including exams – a scientific or graphing calculator. I will demonstrate how to perform various statistical functions using a TI-83/84 Plus and/or StatCrunch.

Communication: There are two ways to contact me electronically.

1. If you have general concerns about the course or would like to schedule an appointment, please send me a message via Canvas or an email with "MATH 1680.320" in the subject line. *To protect your privacy, questions about your academic performance must come from your UNT email account.*
2. If you have a question about a specific homework problem, use the "Ask My Instructor" feature found in the Question Help menu. This will allow me to see the question you are working on, including both your answer and the correct answer.

Grading Policy: Your course grade will be computed as follows.

- Recitation 10%
- Homework 20%

- Quizzes 10%
- Exams 45%
- Final Exam 15%
- Extra-Credit 2%

Attendance: Attendance in lecture is encouraged, but not required. You will be responsible for everything covered in class regardless of your attendance. Students who miss class frequently often see their grades suffer as a result, so please plan accordingly.

Attendance in recitation is required! Students with perfect recitation attendance will receive two (2) percentage points of extra credit added to their course average at the end of the semester.

Section Homework: You must complete the interactive assignment for each section before starting the homework. Homework questions completed after the due date (but prior to the next exam) will incur a 50% late penalty.

- When computing your course grade, I will drop the two lowest homework scores before computing the homework average. I have this policy in case you get sick, a family emergency arises, etc. You will still be responsible for the material contained in such assignments.
- Cooperation on homework assignments (but not quizzes or exams) is encouraged.

Chapter Review Quizzes: You should take the chapter review quiz as soon as possible after you have completed the last section homework for a given chapter. Chapter review quizzes will help gauge whether you are prepared for the upcoming exam. You should set aside at least 30 minutes to take each quiz.

- You may use a scientific or graphing calculator, StatCrunch, and this formula sheet. No other notes or assistance (e.g., Microsoft Excel) are permitted.

Chapter Review Homework: You will be automatically granted credit on the chapter review homework for topics mastered on the quiz. Once you have scored 70% or higher on the chapter review homework, you may retake the quiz in order to improve your score.

Exams: Exams will be given in the Sage Hall Computer-Based Testing Center (SAGE 330C).

- *Bring your student ID, a scientific or graphing calculator, and a pen or pencil to the exam.*
- Everything that I say in class is fair game on the exam. You will be responsible for everything unless I advise you to the contrary.
- You may use a scientific or graphing calculator, StatCrunch, and this formula sheet. No other notes or assistance (e.g., Microsoft Excel) are permitted.
- *No make-up exams will be given.* You may request to take an exam early, provided that I receive the request from your UNT email account at least one week in advance of the day you would like to take the exam. If I grant your request, you will take your exam in the Math Placement & Testing Center (GAB 443), which is open Monday through Friday, 8:30 am – 3:00 pm.

Final Exam: The final exam will be given in the Sage Hall Computer-Based Testing Center (SAGE 330C) on **Monday, December 9 @ 10:30 AM – 12:30 PM**.

- The final exam is mandatory and will be comprehensive in the sense that problems may come from any of the sections covered during the semester.
- Your score on the final exam will replace your lowest exam score, assuming that the score on the final exam is higher, *unless you received a zero on an exam for academic dishonesty* (see below).
- You may check your other final exam times on the UNT Final Exam Schedule.

Additional Resources: In addition to lecture, recitation, and office hours, the following resources are available to help you succeed in this class.

- The Math Tutor Lab (SAGE 130) is staffed by undergraduate mathematics majors and graduate students who are available to answer specific homework questions.
- The UNT Learning Center provides Supplemental Instruction sessions at regularly scheduled times each week, as well as free tutoring upon request.

Academic Dishonesty: Students caught cheating or plagiarizing will be subject to any penalty the instructor deems appropriate, ranging from receiving 0 (zero) points on that particular assignment to course failure. Additionally, the incident will be reported the Dean of Students, who may impose further penalty.

According to the UNT catalog, the term "cheating" includes, but is not limited to:

a) use of any unauthorized assistance in taking quizzes, tests, or examinations;
b) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
c) the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university;
d) dual submission of a paper of project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or
e) any other act designed to give a student an unfair advantage.

The term "plagiarism" includes, but is not limited to:

a) the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and
b) the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Acceptable Student Behavior: Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct.

Access to Information – Eagle Connect: Your access point for business and academic services at UNT occurs at my.unt.edu. All official communication from the university will be delivered to your Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward your e-mail: eagleconnect.unt.edu.

Students with Disabilities: The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at disability.unt.edu. You may also contact them by phone at (940) 565-4323.

Emergency Notification & Procedures: UNT uses a system called Eagle Alert to quickly notify you with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). The system sends voice messages (and text

messages upon permission) to the phones of all active faculty, staff, and students. Please make certain to update your phone numbers at my.unt.edu. Some helpful emergency preparedness action include:

1) know the evacuation routes and severe weather shelter areas in the buildings where your classes are held,
2) determine how you will contact family and friends if phones are temporarily unavailable,
3) identify where you will go if you need to evacuate the Denton area suddenly.

In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

Retention of Student Records: Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without proper written consent. You are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the university's policy in accordance with those mandates at the following link: essc.unt.edu/registrar/ferpa.html.

Student Evaluation of Instruction: Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. This short survey will be made available at the end of the semester to provide you with an opportunity to evaluate how this course is taught.

Succeed at UNT: UNT endeavors to offer you a high-quality education and to provide a supportive environment to help you learn and grow. As a faculty member, I am committed to helping you be successful as a student. Here's how to succeed at UNT: *Show Up. Find support. Get advised. Be prepared. Get involved. Stay focused.* To learn more about campus resources and information on how you can achieve success, go to success.unt.edu.

FALL 2019 MATH 1680 MWF Lecture Calendar

HW DUE 11:59 PM | **QUIZ DUE 11:59 PM**

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	8/26 FIRST DAY OF CLASS Syllabus & MSL	8/27	8/28 1.1, 1.2	8/29	8/30 Last day to add or swap a class 1.3, 1.4
9/1 HW 1.1, 1.2, 1.3, 1.4	9/2 LABOR DAY University closed	9/3 MATH LAB OPENS for the semester	9/4 1.5	9/5	9/6 1.6
9/8 HW 1.5, 1.6	9/9 Census 2.1, 2.2	9/10 Beginning this date a student who wishes to drop a course must first receive written consent of the instructor Ch1 Review QUIZ	9/11 2.2, 2.3	9/12	9/13 2.3, 2.4
9/15 HW 2.1, 2.2, 2.3, 2.4	9/16 3.1, 3.2	9/17 Ch2 Review QUIZ	9/18 3.2, 3.3	9/19	9/20 3.3, 3.4
9/22 HW 3.1, 3.2, 3.3, 3.4	9/23 3.5	9/24 HW 3.5	9/25 Exam 1 Review (Ch1-Ch3)	9/26 Ch3 Review QUIZ Ch1-Ch3 Review HW	9/27 Exam 1 (Ch1-Ch3)
9/29	9/30 4.1, 4.2	10/1	10/2 4.2, 4.3	10/3	10/4 Last day for change in pass/ no pass status 4.3, 4.4
10/6 HW 4.1, 4.2, 4.3, 4.4	10/7 5.1	10/8 Ch4 Review QUIZ	10/9 5.2	10/10	10/11 5.3
10/13 HW 5.1, 5.2, 5.3	10/14 5.4	10/15	10/16 5.5	10/17	10/18 MIDSEMESTER 5.7
10/20 HW 5.4, 5.5, 5.7	10/21 6.1	10/22 Ch5 Review QUIZ	10/23 6.2	10/24	10/25 6.3
10/27 HW 6.1, 6.2, 6.3	10/28 Exam 2 Review (Ch4-Ch6)	10/29 Ch6 Review QUIZ Ch4-Ch6 Review HW	10/30 Exam 2 (Ch4-Ch6)	10/31	11/1 7.1
11/3 HW 7.1	11/4 Last day to drop a course 7.2	11/5	11/6 7.3, 8.1	11/7	11/8 8.1, 8.2
11/10 HW 7.2, 7.3, 8.1, 8.2	11/11 Beginning this date a student who qualifies may request a grade of "I" 9.1	11/12 Ch7 Review QUIZ	11/13 9.2	11/14	11/15 9.3

11/17 HW 9.1, 9.2, 9.3	11/18 10.1	11/19 Ch8 Review QUIZ	11/20 10.2 Last day to withdraw from the session. Process must be completed by 5 p.m. in the Registrar's Office.	11/21	11/22 Exam 3 Review (Ch7-Ch9)
11/24 Ch7-Ch9 Review HW	11/25 Exam 3 (Ch7-Ch9)	11/26 10.3	11/27	11/28 Thanksgiving University Closed	11/29 Thanksgiving University Closed
12/1 HW 10.1, 10.2, 10.3	12/2 10.4	12/3 HW 10.4	12/4 PRE-FINALS DAY Final Exam Review	12/5 PRE-FINALS DAY Last Class Day Ch10 Review QUIZ	12/6 READING DAY NO CLASSES 4:00 pm – MATH LAB CLOSES for the semester Ch10 Review HW
12/8	12/9 FINALS WEEK	12/10 FINALS WEEK	12/11 FINALS WEEK	12/12 FINALS WEEK	12/13 FINALS WEEK TERM ENDS

CHAPTER 1 Data collection
- 1.1 Introduction to the Practice of Statistics
- 1.2 Observational Studies versus Designed Experiments
- 1.3 Simple Random Sampling
- 1.4 Other Effective Sampling Methods
- 1.5 Bias in Sampling
- 1.6 The Design of Experiments

CHAPTER 2 Organizing and Summarizing Data
- 2.1 Organizing Qualitative Data
- 2.2 Organizing Quantitative Data: The Popular Displays
- 2.3 Additional Displays of Quantitative Data
- 2.4 Graphical Misrepresentations of Data

CHAPTER 3 Numerically Summarizing Data
- 3.1 Measures of Central Tendency
- 3.2 Measures of Dispersion
- 3.3 Measures of Central Tendency and Dispersion from Grouped Data
- 3.4 Measures of Position
- 3.5 The Five-Number Summary and Boxplots

CHAPTER 4 Describing the Relation between Two Variables
- 4.1 Scatter Diagrams and Correlation
- 4.2 Least-Squares Regression
- 4.3 Diagnostics on the Least-Squares Regression Line
- 4.4 Contingency Tables and Association

CHAPTER 5 Probability
- 5.1 Probability Rules
- 5.2 The Addition Rule and Complements
- 5.3 Independence and the Multiplication Rule
- 5.4 Conditional Probability and the General Multiplication Rule
- 5.5 Counting Techniques
- 5.7 Putting it Together: Which Method Do I Use?

CHAPTER 6 Discrete Probability Distributions
- 6.1 Discrete Random Variables
- 6.2 The Binomial Probability Distribution