

Math 201
Spring 2023

Instructor: Nancy Beausoleil

Email: Nbeausol@bryant.edu

Office: Suite A room 22

Office hours: Tuesday, Thursday 9:30-11am (room 22 in Suite A), 12-12:30, 1:30-2 (room 260) or by appt.

Text: *Elementary Statistics: A Step by Step Approach* 7th ed., Alan Bluman ISBN 978-0-07-772058-2 McGraw Hill

Course Description: This course is an introduction into the fascinating and exciting world of statistics. We will apply concepts to real life scenarios. This course requires mastery of many formulas, all of which will be provided to you for use during exams/quizzes. It is required that you will master **interpretation** of work derived from these formulas. The data I collected from you on the first day of class will be used as in-class examples of the topics we cover. We will use a statistical software (Minitab) package for data analysis. It is available on your laptop.

Course Policies:

1. You will need a scientific calculator for quizzes and exams. You cannot use your cell phone/laptop/tablet nor can you share a calculator during a quiz or exam or borrow my calculator! If you use any unapproved device during a quiz or exam, it will result in an automatic grade of zero. Sharing answers during an exam also results in a grade of "0"!
2. **Practice Mechanics:** Practice exercises will be available from the book and sometimes as handouts. The suggested problems that cover that day's lecture are listed alongside the daily schedule in this syllabus. These problems are important for learning the material. If you want to learn the concepts, you will be responsible and do the homework. I do not collect homework. You will not receive a grade for homework. So why should you do it? Excellent question!
I will begin every class by answering questions about any homework problems attempted.
3. **Exams:** There are three exams given during this course, each worth 100 points. On days of exams, please be on time. When you come in late, it is disruptive to the class and time is never extended. If you find that you will be missing a scheduled exam, it is your responsibility to let me know, via email, before the time and date of the scheduled exam that it will be necessary for you to miss it, due to a valid reason. If you do not adhere to this protocol, it is an automatic zero for this exam. Students giving timely notice of an absence, will be given a make-up exam at a time we both agree on within 2 weeks of the original exam. A prolonged medical absence will be the exception to this rule as long as documentation is provided.

Expect make-up exams to be different/more difficult than the original exam for obvious reasons. If the make-up is not taken during the allotted time, it will be taken during the final exam period for which you will be responsible for making timely arrangements.

Be aware, you will never be given the opportunity to **RETAKE** an exam and you will never be given the opportunity to make corrections to an exam that has already been graded, for the purpose of increasing your original grade.

4. **There is no cumulative final exam:** Instead, during the final exam period, you will be taking your third semester exam.
5. **Quizzes:** You will be given 2 quizzes during the semester, each worth 25 points. On days of quizzes, please be on time. When you come in late, it is disruptive to the class and time is never extended. If you find that you will be missing a scheduled quiz, it is your responsibility to let me know, via email, before the time and date of the scheduled quiz that it will be necessary for you to miss it. The policy for make-up quizzes is the same as that for exams, including the protocol for a **RETAKE**. (see above)
6. **Project:** This will be a “hands on”, three phase experience into the excitement and pitfalls of 1). creating a survey, collecting data and creating a Minitab spreadsheet (10 points), 2). describing data (20 points), and 3). analyzing data (40 points). We will utilize Minitab for all phases. The project may be done solo or with one or two partners.
7. **Testing Accomodations:** If you are a student who has accommodations for testing, etc., please make sure I have notifications from ACE, before our first quiz/exam. Please make an appointment with ACE) to obtain the required documentation, even if you had them in a previous semester. It is then your responsibility to make timely arrangements (a week in advance) with me for your accommodations, before each event.
8. **Attendance/Class Participation:** No grade is awarded for either. So why should I come to class or answer her questions? Another very excellent question!
9. **Grades:** Your semester grade will be based on 3 exams (300 points), 2 quizzes (50 points), and a project (70 points). Grades are based on points accumulated, not on averages. Letter grades will be assigned using the following conversion scale based on a 420 point total:

<u>Letter Grade</u>	<u>Points Needed</u>
A	388 - 420
A-	378 - 387
B+	367 - 377
B	346 - 366
B-	336 - 345
C+	325 - 335
C	304 - 324
C-	294 - 303
D+	283 - 293
D	252 - 282
F	Below 252

Grades: 1). You are always welcome to discuss, with me, a grade you were given on an exam, quiz or project at any time...but

2). Final grades are not negotiable. Emails asking to negotiate a final grade will be ignored. You should always check Canvas for correct grade entry and notify me of any errors.

EXTRA CREDIT ASSIGNMENT

There will be one and only one, extra credit assignment offered during this course. It will involve performing an additional phase (4) to the project with some, but minimal input from me. It will be worth 10 points, again as extra credit. It will occur towards the end of the semester. It is purely voluntary.

Accountability and Responsibility!!! Who is 100% accountable and responsible for your grade??? Again, another truly great question! Check out the face in that selfie you took on the first day of class. It's not my picture, it's yours... You will be held accountable (given a grade penalty) for **all** missed deadlines, exams, and quizzes. Non-communication issues are not acceptable excuses. There is no *personal* extra credit. However, see below as to how you can help yourself.

Can you swim????

Remember the stories you have read about Noah's Ark...all onboard would survive the flood. If you can swim to the "Ark" in our class, you can help your chances of surviving this class. To reach the "Ark" in this class you must have accumulated an absolute **minimum of 207 points** after exam 1, exam 2 and Quiz 1 have been completed (meaning before the exact date Quiz 2 is given. This total is not negotiable. Your reward for reaching the Ark is an exemption from Quiz 2. The point value for Quiz 2 (25) will automatically be added to your total points. Do you have the drive and dedication to reach the Ark in our class?

Final Exam Schedule

Class Time

**8am
3:30 pm**

Exam Date and Time

**Friday 5/12 10am
Wednesday, 5/10 2pm**

Adventure Outline
(subject to change)

Date	Topic	Practice Mechanics
Thurs 1/26	Intro and Definitions	
Tues 1/31	Simple Random Samples -Types of Data -Tables/Graphs for qualitative data	p. 10 5-16 Handout
Tues 1/31	Tables/Graphs for quantitative data Histogram analysis	p. 66 7,12 <u>create only histogram & interpretate the histogram</u> <u>Handout</u>
Thurs 2/2	Mean, Median, Mode	p. 131 5,9 (no midrange)
Thurs 2/2	Descriptive Stats and Histograms Survey Due	Handout Earn 5 pts for survey
Tues 2/7	Range, Variance, and Standard Deviation BRING CALCULATOR	p. 151 7,9 (only range, variance, std dev)
Thurs 2/9	CV, Z-scores, Intro to Quartiles	p. 167 9,13,14 (z) p. 153 27,29 (CV) p.181 13,15 (just find quartiles)
Tues 2/14	Quartiles, Boxplots, Outliers QUIZ 1	p. 181 13,15 (quartiles, boxplot and test for outliers)
Thurs 2/16	Handout surveys to classmates Fill out form for extra credit phase	If not present -> forfeit 10 points
Tues 2/21	Return surveys to classmates Minitab data entry Project Phase 1 Completed when data is checked	If not present -> forfeit 10 points Project Phase 1 Due (Earn 5 pts for database)
Thurs 2/23	Review Exam 1	
Tues 2/28	Exam 1	FORMULA SHEET PROVIDED
Thurs 3/2	Basic simple probability	p. 206 13,15,21
Thurs 3/2	Permutations & Combinations Project Phase 2 Assigned	Worksheet Handout Due: 3/9
Tues 3/7	Intro to Prob Distributions, Expected Value	p. 280 5,6,9 (mean only)
Tues 3/7	Gaming Theory	p.281 12,15
Thurs 3/9	Binomial Probability Project Phase 2 Due	p.291 7,9,11,13

3/13-19	Spring Break	
Tues 3/21	Normal Distribution Intro to forward problems	p. 314 7-23 odd 41,43,45,47 p.330 7,9
Thurs 3/23	Normal Distribution Apps	p.330 7,9,17,26,28,29
Thurs 3/23	Normal Distribution Apps; Central Limit Theorem	p.344 7,9,13,15
Tues 3/28	Review Exam 2	
Thurs 3/30	Exam 2	Formula sheet provided
Tues 4/4	Confidence Interval Estimates and sample size Large samples: means	p.371 11,17, 23,25
Thurs 4/6	Confidence Interval Estimates Proportions and small sample means	p. 379 9,11,13 p. 387 4,5,6,11,13,17,19
Tues 4/11	Quiz 2	
Thurs 4/13	Hypothesis testing: Traditional Method Large sample means	p.427 5,11,13
Tues 4/18	Hypothesis testing: Traditional Method Large sample means con't	Finish Practice from Thursday
Tues 4/18	Hypothesis testing: Traditional Method Small sample means and large sample proportions	p. 441 7,9,12 p. 450 7,9,11
Thurs 4/20	Hypothesis testing: P-value Method	p.427 17,19 p.450 15,16
Thurs 4/20	P-value method continued EXTRA CREDIT ASSIGNED (due 4/25)	Phase (4)
Tues 4/25	Hypothesis testing: Two Large Independent Samples Means Hypothesis testing: Two Large Independent Samples - Proportions	p. 485 7,9,11 p. 515 7,9,11 Extra Credit due
Thurs 4/27	Testing 2 independent small sample means Example of Phase 3, using Minitab Phase 3 assigned	
Tues 5/2	Testing two dependent small sample means	p. 505 3,5
Thurs 5/4	Review exam 3 Phase 3 Due	

Semester Project (70 pts)

Attached you will find a list of suggested topics to be used for your semester project, which counts 70 points towards your final grade.

The purpose of this project is to introduce you to the processes involved in research and the use of statistics to provide proof of your ideas about your topic.

Please feel free to request a meeting with me for help at any time during this project!

PHASE ONE: Data Collection and Data entry

Part 1a:

Choose a topic and create a 6 question survey asking questions to generate data for your topic. Of the 6 questions, 2 must be qualitative with only 2 category responses and 4 must be quantitative.

No email submissions. No late submissions. Must be typed. See schedule for due date

Many of you will be asked to resubmit your survey to address changes that need to be made.

Part 1b: Survey Distribution and Return

You will make enough copies for everyone in the class to take your survey, as well as yourself. Please put your initials on the survey so that we know who gets the completed survey.

*******NOTE WELL:**

If you do not hand out/pick up your surveys at your allotted class time or you do not complete all the surveys by the allotted class time, this will result in a grade of 0 for Phase 1 and you will have no data to complete the project***.**

PART 1c: Spreadsheet

Once you turned in your Minitab spread sheet depicting your data (paper or visual), you will have earned 10 points for Phase 1.

DO NOT ASK THE FOLLOWING:

You must ask questions that will give you diversity in your responses. Questions such as age, number of credits taken, number of classes taken, years of college, class status, "Do you have a driver's license", "Do you have a cell phone", "Do you own an iPhone", etc have a strong probability that everyone will respond the same.

Don't ask questions that only select people can answer. This happens when you choose a non-inclusive topic, such as playing/following organized sports or asking follow-up questions about an experience someone may not have had

Understanding College Anxiety

Summer is over and it's the fall semester at college. Every student experiences this new adventure differently. Some quickly find their "place" while others struggle with the unfamiliar. The new expectations, the new surroundings, and the new time management can be overwhelming.

Add pressures to succeed, and it's no wonder [anxiety is a common experience](#) in college. A 2017 survey from the American College Health Association showed that nearly 61% of undergraduates reported feeling "overwhelming anxiety" during the previous year.

[What is anxiety?](#)

Anxiety is a basic human emotion with an important purpose – it alerts us to potential threat in our environment.

Anxiety is an intense feeling of fear, apprehension, and dread. Symptoms can include:

- increased heart rate
- sweating
- chronic muscle tension
- upset stomach
- headache
- irritability
- obsessive thoughts
- persistent worry

Even though it's quite unpleasant, the temporary feeling of anxiety itself is not dangerous.

Situations that are unfamiliar or unpredictable can trigger anxiety, even when no actual danger is present. It can be helpful to become better acquainted with anxiety because it allows us to figure out the source of the suspected threat and then do something about it.

Often though, because the feeling of anxiety is so unpleasant, people resist it and try to shut it down by avoiding the situation. If you end up avoiding things that are unfamiliar, you may find it hard to have a successful and meaningful college experience.

Know the signs

If you notice any of the following signs, it may be time to reach out for help:

- skipping class to avoid feeling anxious or embarrassed
- being so distracted by worry that it affects concentration and/or sleep
- earning poor grades due to panic or **test anxiety**
- demanding perfection from oneself in a way that makes it hard to complete assignments
- feeling too anxious to give a speech or presentation
- spending excessive time distracting oneself from anxiety by watching TV, playing video games, or browsing the internet
- avoiding clubs, sports, or activities that would otherwise be of interest
- isolating despite wanting to socialize
- not eating regularly because of a “nervous stomach”
- relying on alcohol or drugs to calm down

Ways to manage anxiety

Thankfully, there are ways of reducing the negative effects of anxiety. Most often, this involves approaching the things that are causing you to feel anxious. Then you can learn those things are not as threatening as they appear. You can also learn ways of coping that allow you to keep living your life even when anxiety shows up.

If this seems overwhelming, consider reaching out for professional help. This can include individual treatment or group-based therapies (with peers who can relate to what you’re going through). Most colleges have counseling centers located on campus, or you can also find providers in the community.

Tips for students

- It is important to understand that nervousness and anxiety are common and natural feelings given the circumstances.
- It is okay to have mixed feelings about this challenging transition.
- Don’t hide out.
- Don’t let anxiety boss you around and limit your college experience.
- There’s a way to embrace these changes, as scary as they may seem!
- Tell your friends and family if you are struggling. Reach out for support.
- Talk to a professional – we’re here to help.

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Young Adult Behavioral Health Program
Lifespan, Providence, RI