

INSTRUCTOR & COURSE INFORMATION

This syllabus describes the requirements and procedures for **Math 321 Applied Statistical Methods**. You are responsible for knowing this material, so please read carefully. Any changes will be announced through Blackboard Announcement. You will be responsible for any changes. **Your continued enrollment in this course is your implicit agreement to abide by the requirements of this class.** (I reserve the right to make minor adjustments to this syllabus should the need arise.)

Professor Contact Information

Name: Dr. Gerri Dunnigan

Phone: (701) 777-4805

Email: gerri.dunnigan@und.edu

Office Hours: Zoom office hours available weekly and by appointment

About the Professor / Instructor

For information about your instructor, check the Faculty tab in the menu panel of the Blackboard site.

Course Description

MATH 321. Applied Statistical Methods. 3 Credits.

Introductory statistics for students with a background in single-variable calculus. Topics include descriptive statistics, continuous and discrete probability density functions, sampling distributions, point and interval estimation, and tests of hypotheses. Prerequisite: [MATH 166](#). F, S.

Course Objectives

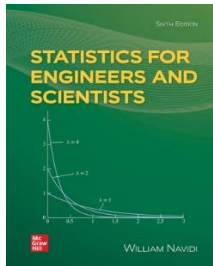
After successfully completing this course, you should be able to:

- Construct and interpret descriptive statistics and plots to describe a one- or two-variable dataset
- Work with basic probability questions, including conditional probabilities
- Calculate probabilities and expectations for random variables, and for binomial and normal (Gaussian) random variables in particular
- Construct and interpret confidence intervals for population means and proportions based on one or two samples
- Conduct and interpret hypothesis tests for population means and proportions based on one or two samples
- Conduct a one-way analysis of variance to compare the means of three or more populations or experimental treatments
- Explore the relationship between two variables through correlation and simple linear regression

Materials – Text and Online Homework System

Statistics for Engineers & Scientists

ISBN10: 1266672915 | ISBN13: 9781266672910 6th Edition, William Navidi



Also required: McGraw-Hill Education's integrated learning system **Connect**

Note: Your Connect access includes an ebook version of the text. If you are comfortable using an ebook, you do not need to purchase a physical copy of the textbook.

Technical Requirements/Assistance

For technical assistance, please contact UND Technical Support at 701.777.2222. Visit the [University Information Technologies \(UIT\) website](#) for their hours, help documents and other resources.

Requirements for testing: All students must have the appropriate equipment and software for testing. This includes the following: • Computer or tablet running Windows 10 or above, MacOSX 10.14 and higher or Chrome OS • Google Chrome browser version 120+ • Honorlock requires that only a single monitor is connected to the computer. Multiple monitors must be disconnected and turned off completely. • Stable, reliable, hi-speed (> 20 Mbps) internet access. • External camera or webcam. Students may use their phone as a webcam with the appropriate version of software, but if they do so, they will be unable to use the phone to scan their written work at the end of the exam. Laptops with in-built cameras will not be sufficient. • **Tablets and touch screen laptops may not be used for written work.** Students must use paper to record their written work. • Microphone • Scanner (preferred) or camera to capture an image of your written work—special instructions must be followed if student is using phone camera. • (Optional) Printer – Students may use blank paper if printer is unavailable. • (Optional) Tripod or mount for camera. • (Optional) USB extension cable to position camera. • Ability to create single PDF files from written work. The work must be legible, organized and should have one image/sheet per page at most. If a student has special circumstances or constraints that prevent them from having the required equipment, they should contact their instructor to discuss options as soon as possible, but no later than the end of the second week of the semester.

Minimum Technical Skills Needed

To succeed in this course, at a minimum, you should be able to:

- Navigate in and use basic Blackboard functions

- Download and open electronic documents
- Create, save, and upload/attach electronic multi-page (single file) pdf documents to Blackboard
- Send, receive, and manage email. **Note: All Blackboard emails will be sent to your UND email account. Please be sure to check your UND email frequently.**
- Use Honorlock to take proctored exams
- Use the electronic homework system Connect

Course Logistics

Access and Log in Information

This course was developed and will be facilitated utilizing Blackboard. To get started with the course, please go to: <http://blackboard.und.edu>. You will need your NDUS Identifier, Username and Password to log in to the course. If you do not know your NDUS Identifier or have forgotten your password, please go to: <http://www1.und.edu/uit/ndus.cfm>

Course Overview

The course content is organized into sixteen weeks. Each week contains a list of learning objectives, a weekly To Do list, links to lesson videos, Connect homework assignments, and written assignments to be submitted via Blackboard. The weekly computerized homework assignments together with any written homework assignments will be used to assess your comprehension and application of the material covered during the week.

To get the most from your experience, I recommend that you do the following:

- Visit the course Blackboard site daily. Check for new announcements and check the Weekly Modules to determine requirements for the weeks along with their due dates.
- Review and revisit the syllabus and course schedule posted in Blackboard frequently.
- Complete your homework assignments in a timely manner. Leaving assignments until the day they are due will likely lead to failure.
- Learn how to use the required technology well ahead of when it is required.

Resources

UND cares about your success as a student. For more information, visit the Student Resources Page for additional information. Students have access to assistance from the UND Writing Center, Tutoring and Learning Services, Testing Services, and more.

Students also have access to the UND Student Resource Site via Blackboard. It is recommended that you become familiar with the tools and tutorials within Blackboard to better equip you in navigating the course and Educational Technology including Yuja.

Course Requirements/Expectations

1. The student will review the syllabus and course schedule posted in Blackboard.
2. The student will access and follow all course instructions found in the weekly area of the Blackboard course.
3. The student will listen to all online lectures provided in the individual weekly folders and take notes using the note pages provided. **Note: There are many videos available online covering topics in statistics. I recommend that you be sure to watch the lectures I've provided before going online. You must ask yourself: "Who is writing and grading my exams and homework assignments, my instructor or the people doing the videos on the internet?"**
4. The student will complete and submit assignments, exams, quizzes, etc., by the date noted in Blackboard and on the course schedule. **We will use Central Standard Time for due dates and times.**
5. The student will participate fully and in a timely manner to get the benefit of learning from instructor and/or peers.
6. The student will follow the departmental proctoring protocol and follow all requirements and directions stated for taking exams using HonorLock. Failure to follow directions for exam taking will most likely result in a score of 0 on exams.

Communication

Announcements

Announcements will be posted in Blackboard on a regular basis. Be sure to check the class announcements regularly as they will contain important information about class assignments and other class matters.

Email

If you need to contact me directly, check the Faculty tab in Blackboard or the syllabus for my contact information. I will respond back to you within 24 hours during the week and may not respond on the weekend until the next business day. Therefore, you should not wait until the weekend to do your assignments as I do not guarantee my availability to answer questions that you may have.

Zoom Office Hours

Each week, I will schedule office hours via Zoom videoconferencing. It will be set up with a waiting room for one-on-one consultation. Scheduled office hours will be announced in Blackboard.

Netiquette

Always use professional language (no netspeak) in your assignments and emails. Please always be respectful of others, even if you disagree with their ideas or do not get along. Here are a few basic points to remember when communicating in this course:

- Be scholarly. Use proper language, grammar, and spelling. Explain your thoughts, justify opinions, and credit the ideas of others by citing or linking to scholarly resources. Avoid misinforming others when you are unsure of the answer. When discussing something and supplying a guess, clearly state that.
- Be respectful. Respect the privacy of others. Do not share personal or professional information about others unless permission has been granted. Respect diversity and opinions that differ from their own. Be tactful when you communicate.
- Be professional. Everyone should strive to give their best impression online. Truthfulness, accuracy, and running a final spell check are appropriate expectations for university students. Writing in a legible font and limiting the use of emoticons is considered professional behavior. Profanity and participation in hostile interactions are unprofessional as well as disruptive.
- Be polite. Students should be addressing professors and instructors by the appropriate title or requested name. Students should interact online politely, just as they would be expected to do in a physical environment. Sarcasm, rudeness, and writing in all capital letters should be avoided.

Assessment & Grading

This course is made up of a series of assignments and assessments to assist you in achieving the course learning objectives/outcomes. Each week you will work on a combination of the following:

Connect Homework Assignments

There will be graded electronic homework assignments every week, due dates (Central Time) will be identified in the Weekly Modules as well as in Connect. All of these assignments will be due on Wednesday of each week unless otherwise specified. Instructions for registering in this section of Math 321 in Connect are given under the Course Materials tab of Blackboard.

Although many questions will require calculation and numeric answers, understanding your methods and interpretation of your results are very important, so there will also be many questions to test that understanding, generally in “true/false”, “multiple choice”, or “mark all that apply” format. Numeric answers will have a (usually quite generous) tolerance for rounding errors, but it is still a good idea to do as little rounding as possible in intermediate steps to minimize such errors. If possible, use your calculator’s memory function to save intermediate values to full precision, rather than recording them to only a few digits for later use.

Note that you may ask to “check your answer” for most problems up to 4 times before final grading. (The exceptions are “true/false” or “mark all that apply” questions.) If you are still stuck after 2 or 3 tries, perhaps wait for your final attempt until you have a chance to ask someone for help. If you have trouble with a particular problem, you may get help from each other or from me, but be sure to attempt each problem personally before you ask for help. Many problems will be randomized, so your questions will probably not match those of your classmates exactly.

Be sure to type your answers carefully using the correct notation, and do not forget to submit your homework before closing it. It is your responsibility to check the Connect site and complete all assignments by their due date to receive full credit.

Weekly Homework Assignments

You will also be assigned weekly assignments. Due dates will be identified in the Weekly Modules and in the Course Schedule. Many of these assignments will be administered via Connect and the remaining will be submitted to and graded in Blackboard. They will be due on Wednesday of the week following the week in which they were assigned. For the Bb submissions, you will need to upload a pdf copy of your work to Bb. A single-file submission is expected. **Homework submitted to Blackboard in a format other than a single pdf may not be graded and homework not submitted directly to Blackboard will not be graded.**

Rules for Written Homework Assignments: The following rules should be adhered to for each of the homework assignments that you turn in for credit. (1) Do your own homework write-ups. Working on homework problems with other students can be a beneficial learning tool. However, copying someone else's work and turning it in as your own for credit is dishonest. If substantial evidence of direct copying is observed, all students involved may lose all credit for the assignment. (2) Homework is to be submitted in pdf format to Blackboard and will be graded there. You may submit your homework any time up until the posted due date. If multiple submissions are made, I will grade the most recent submission. Permission must be requested for a late submission of a homework assignment and late submissions will not be permitted once the homework is graded. (3) You can use Microsoft Word (or other similar text editors) to do your assignments and save them in pdf format. If you choose to write up your homework by hand, you will have to scan your work and save it in pdf format. Once this is done you may upload it to Blackboard. (4) Neatness and proper notation is important. If I can't read your work, it will receive no credit.

Statistical Software

In your written assignments, I may ask you to complete problems using a statistical software package. I will provide video walk-throughs of basic graphing, numerical computations, and statistical applications in Minitab which is available for remote access through UND Labs Anywhere powered by Apporto. You will be able to access UND Labs Anywhere through Blackboard. Microsoft Excel is not a statistical software package and should not be used for assignments. More details for accessing and using Minitab will be posted to the Blackboard site. **Note:** If you have a different statistical software package you would like to use, check with me for permission to do so. I DO NOT consider Excel a statistical software package, so that is not an option.

Exams

There will be three exams during the semester, two mid-terms and a final. They will be pdf exams proctored using Honorlock. All exams will take place during a Sunday/Monday time period beginning at 8:00 am CT on a Sunday and ending at 11:59 pm CT on the following Monday. Exam dates can be found on the course schedule.

Grading Breakdown

Grading Scale		Breakdown of Weighted Totals
A	90% to 100%	Weekly Assignments (WA)– 20% Weekly Connect Smartbook Assignments (CN)/Quizzes – 20% Exams – 60% (20% each)
B	80% to 89%	
C	70% to 79%	
D	60% to 69%	
F	0% to 59%	

Course Evaluation

Near the end of the semester, you will be asked to complete an online course evaluation form (SELF). Your feedback on the course is extremely valuable to me. I read my students' comments carefully and use them to improve the course the next time I teach it.

- When the time comes, please let me know which aspects of the course helped you learn—and which aspects might be modified to help future students learn more effectively.
- Please note that the course evaluations are anonymous and that I will not see the results until after the grades for the course are submitted, allowing you to provide honest and constructive feedback.
- And if you have feedback to offer before the end of the semester, please let me know.

Course Policies

Late Work

All assignments should be submitted by the due dates posted in the course. All assignments will be due on Wednesday of the week following that in which the material was covered. Assignment extensions are typically not given. However, the acceptance of late assignments is at the discretion of the instructor provided you contact the instructor before the due date with a valid excuse and ask for an extension. Exam extensions/make-up exams are only given in the most extreme cases. All requirements for this course must be completed during the semester timeframe of the course.

Instructor Responsibilities and Feedback

- The instructor will provide feedback on all assignments and exams within one week of the due date.
- The instructor will respond to emails to answer questions, provide feedback, and offer advice as soon as possible after receipt, usually within 24 hours, from Monday through Friday while classes are in session. Zoom office hours will be posted weekly.

Incompletes

It is expected that students will complete all requirements for a course during the time frame of the course. For reasons beyond a student's control, and upon request by the student or on behalf of the student, an incomplete grade may be assigned by the instructor when there is reasonable certainty the student will successfully complete the course without retaking it. The mark "I," Incomplete, will be assigned only to the student who has been in attendance and has done satisfactory work up to a time within four weeks of the close of the semester, including the examination period, and whose work is incomplete for reasons satisfactory to his or her instructor. More information regarding UND's Incomplete policy can be found on [The Grading System webpage](#).

UNIVERSITY OF NORTH DAKOTA POLICIES & RESOURCES

Academic Integrity

Academic integrity is a serious matter, and any deviations from appropriate behavior will be dealt with strongly. At the discretion of the professor, situations of concern may be dealt with as a scholastic matter or a disciplinary matter.

As a scholastic matter, the professor has the discretion to determine appropriate penalties to the student's workload or grade, but the situation may be resolved without involving many individuals. An alternative is to treat the situation as a disciplinary matter, which can result in suspension from the University, or have lesser penalties. *(Be aware that I view this as a very serious matter and will have little tolerance of or sympathy for questionable practices.)* A student who attempts to obtain credit for work that is not their own (whether that be on a paper, quiz, homework assignment, exam, etc.) will likely receive a failing grade for that item of work, and at the professor's discretion, may also receive a failing grade in the course. For more information read the [Code of Student Life](#).

Access & Opportunity, Disability Support and Medical Services

If you have emergency medical information to share with me, or if you need accommodations in this course because of a disability, please visit with me as soon as possible. If you plan to request disability accommodations, you are expected to [register with the Disability Support Services](#) (DSS) office online, (180 McCannel Hall, 701.777.3425).

If you have a temporary medical condition such as a broken arm or recovering after surgery, you may be able to arrange for courtesy services. In most cases, it is expected that you will make your own arrangements for these services. Examples of courtesy services include access to a test scribe if the student has a broken hand; lift equipped van transportation when the student has a broken leg or temporary accessible parking for a student using crutches for a short period. If you are unable to make your own arrangements, please contact DSS (777-3425). Unlike services and/or accommodations provided to eligible students with disabilities, the University is NOT obligated to provide courtesy services.

Resolution of Problems

Should a problem occur, you should speak to your instructor first. If the problem is not resolved, contact Department Chair Ryan Zerr (ryan.zerr@und.edu). If the problem continues to be unresolved, your next step would be to contact the college Dean (bradley.rundquist@und.edu). Should the problem persist, you have the

right to go to the Provost next, and then to the President.

Notice of Nondiscrimination

It is the policy of the University of North Dakota that no person shall be discriminated against because of race, religion, age, color, gender, disability, national origin, creed, sexual orientation, gender identity, genetic information, marital status, veteran's status, or political belief or affiliation and the equal opportunity and access to facilities shall be available to all. Concerns regarding Title IX, Title VI, Title VII, ADA, and Section 504 may be addressed to: Donna Smith, Director of Equal Employment Opportunity/Affirmative Action and Title IX Coordinator, 401 Twamley Hall, 701.777.4171, UND.affirmativeactionoffice@UND.edu or the Office for Civil Rights, U.S. Dept. of Education, 500 West Madison, Suite 1475, Chicago, IL 60611 or any other federal agency.

Reporting of Sexual Violence

If you or a friend has experienced sexual violence, such as sexual assault, domestic violence, dating violence or stalking, or sex-based harassment, please contact UND's Title IX Coordinator, Donna Smith, for assistance: 701.777.4171; donna.smith@UND.edu; or visit the [Title IX webpage](#).

Faculty Reporting Obligations Regarding Sexual Violence

It is important for students to understand that faculty are required to share with UND's Title IX Coordinator any incidents of sexual violence they become aware of, even if those incidents occurred in the past or are disclosed as part of a class assignment. This does not mean an investigation will occur if the student does not want that, but it does allow UND to provide resources to help the student continue to be successful at UND. If you have been the victim of sexual violence, you can find information about confidential support services on the [Title IX webpage](#).

UND Cares Program

The [UND Cares program](#) seeks to educate faculty, staff and students on how to recognize warning signs that indicate a student is in distress.

How to Seek Help When in Distress

We know that while college is a wonderful time for most students, some students may struggle. You may experience students in distress on campus, in your classroom, in your home, and within residence halls. Distressed students may initially seek assistance from faculty, staff members, their parents, and other students. In addition to the support we can provide to each other, there are also professional support services available to students through the Dean of Students and University Counseling Center. Both staffs are available to consult with you about getting help or providing a friend with the help that he or she may need. For more additional information, please visit the [UND Cares program Webpage](#).