

# **University of North Texas**

**College of Health and Public Service**

**Department of Rehabilitation and Health Services**

**PUBH 4020 Biostatistics**

Welcome to the PUBH 4020 Biostatistics Spring 2024 course. My name is Andrea Traylor. I will be your instructor for this class. I look forward to introducing you to biostatistics. This course will provide you with a basic grasp of SPSS.

# **Course Information****`**

**Course Number and Title**: PUBH 4020: Biostatistics

**Meets**: T/Th 12:30-1:50

**Location**: 320 GAB

3 Credit Hours

## **Instructor Information**

**Name**: Andrea Traylor, Ph.D., M.Ed., CHES

**Office Location**: Chilton 218J

**Phone number**: (940) 565-4938

**Email**: andrea.traylor@unt.edu

Email will be the best way to communicate with me this semester. In most cases, I will reply to messages left at the department within 48 hours and emails within 24 hours. Holidays and weekends will be 48 hours. **Office hours**: Tuesday/Thursday 2pm-4pm and by appointment on Zoom

## **Course Description**

This introductory course focuses on statistical concepts and methods used in data analysis. Students will learn descriptive and inferential statistics as well as some epidemiological concepts and designs. Students will gain statistical skills and be able to use this knowledge to understand public health issues and research. Students will also be introduced to statistical packages such as SPSS and EXCEL and be able to know the importance of biostatistics in public health. Upon completion of this course, students will understand and be able to apply basic techniques in descriptive and inferential statistics important for public health research.

## **Pre-Requisites**

Recommended prerequisite(s): PUBH 1010 (Intro to Pub Health), PUBH 2010 (Epidemiology) & PUBH 2015 (Research Methods in Public Health) for majors ONLY

## **Course Objectives**

By the end of this course, students will be able to:

* + Calculate and interpret descriptive statistics
  + Interpret differences in data distributions via visual displays
  + Calculate standard normal scores and ensuing probabilities
  + Calculate and interpret confidence intervals for population means and proportions
  + Interpret p-values
  + Collect and interpret public health data
  + Explain the differences among various statistical tests
  + Choose appropriate analysis methods based on the characteristics of the variables
  + Gain hands‐on experience using SPSS for basic calculations and to answer real‐world questions

## **Required Materials**

**Required text:** George, D., & Mallery, P. (2018). IBM SPSS Statistics 25 Step by Step: A S imple Guide and Reference (15th ed.). Routledge.

**Supplemental text**: Sullivan. (2017). Essentials of Biostatistics in Public Health (3rd ed.). Jones & Bartlett Learning.

## **Technical Support**

UIT Help Desk: [UIT Student Help Desk](http://www.unt.edu/helpdesk/index.htm) site

Email: [helpdesk@unt.edu](mailto:helpdesk@unt.edu)

Sage Hall, Room 130

(940)565-2324

Walk-In-Availability: 8am-9pm Telephone Availability:

* Sunday: noon-midnight
* Monday-Thursday: 8am-midnight
* Friday: 8am-8pm
* Saturday: 9am-5pm

**For additional support, visit** [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-10554-4212710328)

## **Technical Requirements**

We will be using Canvas as our main platform for interaction this semester. You will need regular access to the internet, Canvas, and Zoom (including a webcam and microphone). We will be using programs in the Microsoft Office Suite including Word and PowerPoint. You will also have to access Adobe Acrobat Reader for pdf files. Finally, you will need to have the ability to upload and download files, send and receive emails with/without attachments, and communicate with fellow students in various electronic formats such as videoconferencing. Check the electronic resources available to students through the College of Health and Public Service as well as the library to see if they offer laptops and webcams for students to check out.

## **Course Requirements**

Performance in this course will be assessed in five ways including homework, quizzes, exams, and participation. Weekly instructions can be found in the Canvas Modules. See below for the points breakdown, details about the assignments, and the late work policy. Additional information for each assignment will be posted in Canvas. **It is your responsibility to go to the Weekly Instructions in Canvas to find all assigned materials.**

|  |  |  |
| --- | --- | --- |
| **Assignment** | **Points Possible** | **% of Final Grade** |
| Participation | 5 points | 5% |
| Quizzes | 5 @ 5 points each | 25% |
| Homework | 8 @ 5 points each | 40% |
| Exams | 2 @ 15 points each | 30% |
| **Total Points Possible** | **100 points** | **100%** |

**Participation**: Class attendance and participation is important in understanding the concepts that will be covered. Please inform the instructor on time before absences are made.

**Quizzes (25%)**: **Five** quiz sets will be assigned as shown in the schedule. Quiz questions may consist of but will not be limited to calculations, multiple choice, short answer questions, and materials covered in lectures. **Quizzes will be open given on Thursdays during class time.** Students are required to complete quizzes in class. **No late work is accepted in this course.**

**Homework (40%): Eight** problem sets will be assigned as shown in the course schedule. Problem sets may consist of calculation problems, short answer, multiple choice, short essays and, and usually will require the use of SPSS or EXCEL. **Homework MUST be submitted in EXCEL for grading on Canvas**. More information regarding the homework sets will be provided on Canvas. **Submissions are due on Friday of the assigned week at 11:59pm**. **No late work is accepted in this course.**

**Exams:** To provide students with opportunities to demonstrate their knowledge of the course material, **two** cumulative exams will be given. For all two exams, students are responsible for materials covered during the lectures and their corresponding reading assignments. Extensive formulas will be provided. You are expected to use SPSS and EXCEL on the exams. **No late work is accepted in this course.**

**\*See Canvas or the Course Calendar on last page of syllabus for due dates\***

**\*It is your responsibility to go to the Weekly Instructions in Canvas to find all assigned materials\***

## Extra credit

1. Please do not email asking for extra credit, points, etc. If one student gets the option for “extra” credit all students will get the same.
2. There will be an opportunity to make up an assignment. It is indicated on the syllabus as Lab Day.
3. There may be a time I will give “Extra Credit”; however, it will be available to ALL students.

## **Late Work Policy**

## Late work

I will not accept late work unless you have a university excuse, (i.e. death in the family, sick with a doctor’s note, etc). Assignments are listed weekly, with each module opening on Monday at 8am. However, you have until Sunday at 11:59pm to turn in assignments. Please contact me if you have any issues meeting a deadline.

## **Grading**

**All the components of a student’s grade will have a point value system, based on A being equivalent to a 4.0. Points will be given based on a student’s performance, such as the quality of information posted in the weekly quizzes, writing skills, research skills, and ability to illustrate comprehension of all course topics. Each assignment will include a rubric for specific details on grading criteria.**

**Total Points Possible for Semester/Grading Scale = 100**

|  |
| --- |
| **100 – 90 = A** |
| **89 – 80 = B** |
| **79 – 70 = C** |
| **69 – 60 = D** |
| **59 and below = F** |

## **COURSE EXPECTATIONS**

As the instructor of this course, I am responsible for:

1. Providing course materials that will assist and enhance your achievement of the stated course goals
2. Providing timely and helpful feedback within the stated guidelines
3. Assisting in maintaining a positive learning environment for everyone

As a student in this course, you are responsible for:

1. Reading and completing all requirements of the course in a timely manner
2. Working to remain attentive and engaged in the course and interact with your fellow students
3. Assisting in maintaining a positive learning environment for everyone

## **COVID-19 Policies**

#### **Guidelines for individuals who test positive for COVID-19**

As of April 29, 2022, the University will no longer offer contact tracing for positive test cases. Individuals who test positive for the virus should follow current [Centers for Disease Control Isolation and Precautions for People with COVID-19](https://www.cdc.gov/coronavirus/2019-ncov/your-health/isolation.html) and follow the treatment advice of their medical provider. Students, faculty, and staff should handle COVID-19-related absences like other health-related absences.

#### **Guidelines for individuals who have been exposed to COVID-19**

Individuals exposed to the virus should follow the current [Centers for Disease Control](https://www.cdc.gov/coronavirus/2019-ncov/your-health/if-you-were-exposed.html) recommendations and their medical provider's treatment advice. Students, faculty, and staff should handle COVID-19-related absences like other health-related absences.

# **UNT Policies**

## **Academic Integrity Policy**

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. *Work submitted may be analyzed by software for academic integrity.*

## **ADA Policy**

UNT makes reasonable academic accommodations for students with disabilities. I aim to make success in this course attainable for all students. Please reach out to me about accommodation options. Students seeking accommodation should register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students 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**](http://disability.unt.edu/) website at http://disability.unt.edu/. You may also contact them by phone at [940.565.4323](tel:940.565.4323).

## **Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

## **Emergency Notification & Procedures**

UNT uses a system called Eagle Alert to quickly notify students 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). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

## **Access to Information - Eagle Connect**

Students’ access point for business and academic services at UNT is located at [**my.unt.edu**](https://my.unt.edu/). All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail [**Eagle Connect**](https://it.unt.edu/eagleconnect)(https://it.unt.edu/eagleconnect).

## **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 the 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. Visit UNT’s [**Code of Student Conduct**](https://deanofstudents.unt.edu/conduct)(https://deanofstudents.unt.edu/conduct) to learn more.

## **Sexual Assault Prevention**

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off-campus. The Survivor Advocates can be reached at [**SurvivorAdvocate@unt.edu**](file:///C:\Users\jdl0126\AppData\Local\Temp\OneNote\16.0\NT\0\SurvivorAdvocate@unt.edu) or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at [**oeo@unt.edu**](file:///C:\Users\jdl0126\AppData\Local\Temp\OneNote\16.0\NT\0\oeo@unt.edu) or at (940) 565 2759.

## **Transmission and Recording of Student Images in Electronically Delivered Courses**

This course employs lecture capture technology to record class sessions. Students may occasionally appear on video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings. I will provide accommodations for students who do not wish to appear in class recordings.

No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.

## **Class Recordings & Student Likenesses**

Synchronous (live) sessions in this course will be recorded for students enrolled in this course to refer to throughout the semester. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

## **Copyright Notice**

Some or all the materials on the course website may be protected by copyright. Federal copyright law

prohibits the reproduction, distribution, public performance, or public display of copyrighted materials

without the express and written permission of the copyright owner, unless fair use or another exemption

under copyright law applies. Additional copyright information may be located on the UNT website.

**Important Notice for F-1 Students taking Distance Education Courses**

## **Federal Regulation**

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the [**Electronic Code of Federal Regulations website**](http://www.ecfr.gov/) (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken online or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to the completion of the class. An online or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no online or distance education classes may be considered to count toward a student's full course of study requirement.

## **University of North Texas Compliance**

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student’s responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, they should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email [**internationaladvising@unt.edu**](mailto:internationaladvising@unt.edu)) to get clarification before the one-week deadline.

## **Rules of Engagement**

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

* While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law will not be tolerated.
* Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
* Ask for and use the correct name and pronouns for your instructor and classmates.
* Speak from personal experiences. Use “I” statements to share thoughts and feelings. Try not to speak on behalf of groups or other individual’s experiences.
* Use your critical thinking skills to challenge other people’s ideas, instead of attacking individuals.
* Avoid using all caps while communicating digitally. This may be interpreted as “YELLING!”
* Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
* Avoid using “text-talk” unless explicitly permitted by your instructor.
* Proofread and fact-check your sources.
* Keep in mind that online posts can be permanent, so think first before you type.

See these [**Engagement Guidelines**](https://clear.unt.edu/online-communication-tips) for more information.

**For all other UNT Policies, please go to the Student Handbook.**

## Student Programs/Services/Organizations

### Academic Support Services

[**Academic Resource Center**](https://success.unt.edu/asc)

[**Academic Success Center**](https://success.unt.edu/asc)

[**UNT Libraries**](https://library.unt.edu/)

[**Writing Center**](https://writingcenter.unt.edu/)

**[Math Lab](https://math.unt.edu/mathlab)**

### Library Resources

[**UNT Libraries**](https://library.unt.edu/)

**[UNT Library Research Support](https://library.unt.edu/research-support-services/)**

Subject Librarian - Jennifer Rowe

Phone: 940-369-7815; Email: jennifer.rowe@unt.edu

[**PUBH Subject Library Resources Page**](https://guides.library.unt.edu/PublicHealth)

[**PUBH 3020 Community Health Education Course Guide**](https://guides.library.unt.edu/PUBH3020)

### Student Support Services

[**Registrar**](https://registrar.unt.edu/index.html)

[**Financial Aid**](https://financialaid.unt.edu/index.html)

[**Student Legal Services**](https://studentaffairs.unt.edu/student-legal-services)

[**Career Center**](https://careercenter.unt.edu/)

[**Multicultural Center**](https://idea.unt.edu/multicultural-center)

[**UNT Care Team**](https://studentaffairs.unt.edu/care-team)

**[Counseling and Testing Services](https://studentaffairs.unt.edu/counseling-and-testing-services)**

[**CARE Team**](https://studentaffairs.unt.edu/care-team)

**[Student Health and Wellness Center](https://studentaffairs.unt.edu/student-health-and-wellness-center)**

[**Pride Alliance**](https://edo.unt.edu/pridealliance)

[**UNT Food Pantry**](https://studentaffairs.unt.edu/food-pantry)

[**ALL Programs and Services**](https://studentaffairs.unt.edu/push/unt-resources)

### Student Organizations

Did you know there are more than 400 student organizations at UNT? Joining an organization is a great way to meet other students with similar interests. There are clubs related to academics, recreation, advocacy, entertainment, and so much more. Many organizations offer students opportunities to gain leadership skills and network with others to expand career opportunities. [**Student Organization Homepage**](https://studentaffairs.unt.edu/student-org)

### UNT Student Organizations Related to Public Health

For a full list of public health-related Student Organizations, go to the Student Organization page and search “public health.”

[**Public Health Alliance**](https://unt.campuslabs.com/engage/organization/public-health-alliance)

[**Future Without Poverty**](https://unt.campuslabs.com/engage/organization/future-without-poverty)

[**UNT Rotaract Club**](https://unt.campuslabs.com/engage/organization/rotaract-club)

[**American College of Health Care Administrators**](https://achca.memberclicks.net/)

[**Black Health Professions**](https://unt.campuslabs.com/engage/organization/black-health-professions)

[**Global Medical Brigades**](https://fundraise.globalbrigades.org/empowered/chapter/university-of-north-texas-medical-brigades)

[**Student Health Advisory Committee**](https://unt.campuslabs.com/engage/organization/student-health-advisory-commitee)

[**Health Occupation Students of America**](https://unt.campuslabs.com/engage/organization/hosa-unt)

[**Pre-Physician Assistant Club**](https://unt.campuslabs.com/engage/organization/pre-physician-assistant-club)

[**Collaborative Urban Planning Association**](https://unt.campuslabs.com/engage/organization/apaso_unt)

[**Delta Sigma Theta Sorority, Inc.**](https://unt.campuslabs.com/engage/organization/delta-sigma-theta-sorority-inc)

[**Public Administration Student Association**](https://unt.campuslabs.com/engage/organization/public-administration-student-association)

**Alpha Epsilon Delta Health Pre-Professional Honor Society**

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# **Calendar**

**Tentative calendar for the course, including information for the weekly topics, required readings, and the due dates for assignments. Remember, supplemental readings are not listed here.** **It is your responsibility to go to the Weekly Instructions in Canvas to find all assigned materials. These dates and topics are subject to change. All readings from text unless otherwise specified.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Supporting Reading** | **Topic** | **Activities/Due Dates** |
| **Week 1**  8/20 & 8/22 | Sullivan Chapter 1 | Course introduction and introduction to biostatistics  Access to SPSS | **Introduce yourself to the class!** |
| **Week 2**  8/27 & 8/29 | Sullivan Chapter 2 | Study designs used in public health research  Measures of central Tendency | **Homework 1 due 8/30** |
| **Week 3**  9/3 & 9/5 | George Chapter 1-2 | Introduction to EXCEL and SPSS – SPSS processes, creating and editing a data file  Normal distribution | **Homework 2 due 9/6** |
| **Week 4**  9/10 & 9/12 | George Chapter 3-4 | Managing data | **Homework 3 due 9/13** |
| **Week 5**  9/17 & 9/19 | George Chapter 4-5  Sullivan Chapter 12 | Visualization/graphs | **Quiz 1**  **Homework 4 due 9/20** |
| **Week 6**  9/24 & 9/26 | George Chapter 5  Sullivan Chapter 4 | Descriptive statistics and frequencies/Summarizing data collected in a sample | **Homework 5 due 9/27** |
| **Week 7**  10/1 & 10/3 | George Chapter 6-7 | Summarizing data collected in a sample contd.  Quiz 2 | **Quiz 2** |
| **Week 8**  10/8 & 10/10 |  | Review & Lab Day!  Exam #1 | **DUE 10/11** |
| **Week 9**  10/15 & 10/17 | George Chapter 8 | Crosstabulation and chi-square analyses | **Homework 6 due 10/18** |
| **Week 10**  10/22 & 10/24 | George Chapter 8 | Crosstabulation and chi-square analyses  Quiz 3 | **Quiz 3 due 10/25** |
| **Week 11**  10/29 & 10/31 | George Chapter 11  Sullivan Chapter 7 | T-TEST: Independent samples  Quiz 4 | **Homework 7 due 11/1**  **Quiz 4** |
| **Week 12**  11/5 & 11/7 | George Chapter 11  Sullivan Chapter 7 | T-TEST: Paired samples and one- sample tests | **Homework 8 due 11/8** |
| **Week 13**  11/12 & 11/14 | Sullivan Chapter 6 | P-values and Confidence interval  Quiz 5 | **Quiz 5 due 11/15** |
| **Week 14**  11/19 & 11/21 |  | ANOVA and MANOVA | **Extra Credit HW due 11/21** |
| **Week 15**  11/26 & 11/28 |  |  | **Due 11/29** |
| **Week 16**  12/3 & 12/5 | Final | Final Exam Review  Exam 2 | **Due 12/5** |
| Week 17 | Final | Exam #2.2 | **Due 12/11** |