Welcome to the Fall 2021 PUBH 4020 Biostatistics course. My name is Professor Naomi Meier. I will be your instructor for this class. I look forward to introducing you to the mathematical principles and statistical theories used for research in public health.

**COURSE INFORMATION**
Course Number and Title: PUBH 4020 Biostatistics  
Meets: M/W/F 10:00 am – 10:50 am  
In-Person Location: BLB 050  
Live Zoom Meeting: Links to each meeting can be found in Canvas  
3 Credit Hours

**INSTRUCTOR INFORMATION**
Naomi Meier, DrPH, MS  
Office Location: Chilton Hall 218H  
Phone number: (940)565-2488  
Email: naomi.meier@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 and emails within 36 hours.  
Office hours:  
- By appointment  
- In-person or Virtual options available  
- Zoom Meeting Room ID: 210 983 2344

**TEACHING ASSISTANT**
Kirsteen Edereka Great  
Email: kirsteen.ederekagreat@unt.edu

**COURSE DESCRIPTION**
This course will introduce students to the use of biostatistics in public health and medical research. Students will become familiar with descriptive and inferential statistics as well as epidemiological concepts and research designs. Students will learn the basic tools for the collection, analysis, and presentation of data. Students will gain hands-on experience using Excel for basic statistical analysis. Throughout the course, students will discuss current research and become familiar with interpreting research findings and applying them to public health practice.
PRE-REQUISITES
Recommended prerequisite(s): PUBH 1010 Intro to Pub Health, PUBH 2010 Epidemiology, PUBH 2015 Research Methods in Public Health. For Public Health majors ONLY.

COURSE OBJECTIVES
1. Describe the roles of biostatistics in public health
2. Describe common research designs used in public health
3. Identify the appropriate methods of data analysis
4. Apply common statistical methods for inference
5. Collect and interpret public health data
6. Calculate and interpret descriptive statistics
7. Interpret differences in data distributions via visual displays
8. Calculate and interpret confidence intervals for population means and proportions
9. Interpret a p-value
10. Interpret results of statistical analyses found in public health and clinical studies

REQUIRED MATERIALS
Required Textbook:
ISBN: 9781284108194
Any additional required readings will be posted in Canvas and will be available electronically.

TECHNICAL SUPPORT
UIT Help Desk: UIT Student Help Desk site (http://www.unt.edu/helpdesk/index.htm)
Email: helpdesk@unt.edu
Sage Hall, Room 130
(940)565-2324
Walk-in Availability: 8 am–9 pm
Telephone availability:
   Monday-Thursday: 8 am-midnight
   Friday: 8am-8pm
   Saturday: 9am-5pm
   Sunday: noon-midnight
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

A student’s performance in this course will be assessed in five ways including weekly participation, weekly quizzes, case studies, a Midterm, and a Final Exam. See below for the point distribution, details about the assignments, and late work policies. Additional information for each assignment will be posted in Canvas.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points Possible</th>
<th>Percentage of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>15 @10 points each</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Total 150 points</td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td>10 @ 20 points each</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>(12 quizzes drop lowest two)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total 200 points</td>
<td></td>
</tr>
<tr>
<td>Case Studies</td>
<td>2 @ 100 points each</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Total 200 points</td>
<td></td>
</tr>
<tr>
<td>Mid-Term Exam</td>
<td>200 points</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>250 points</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>1000 points</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Participation:
Students are required to complete the readings assigned in the textbook and review the supplemental material before class on Monday. Participation points are earned by attending class each week – in-person or virtually. Weekly participation is worth 10 points a week which adds up to 150 points total for the semester.

Quizzes:
Students are required to complete weekly quizzes in Canvas. The quizzes will include questions from the material presented the same week. Each quiz will be posted Monday and students will have until Sunday at 11:59 pm of the same week to complete the quiz. Quizzes can only be taken once. A student may be able to make up quizzes, depending on the situation. The two lowest grades will be dropped at the end of the semester. In total, quizzes will account for 200 points earned for the course.

Case Studies:
Students are required to complete two Case Studies for this course. Each case study will involve the application of material presented in the course. Details will be posted in Canvas.

Exams:
The Mid-Term Exam will include material covered in the first seven weeks of the course. It will be worth 200 points. The final exam will include all material covered in the course, with a focus on the material covered in the second half of the semester. It will be worth 250 points. Students may only take the exams once. Please contact me if you have conflicts with the exam times.

*See Canvas or the Course Calendar on page 11 for due dates*
LATE WORK POLICY

Any work submitted after the deadline will lose points. All assignments are set to close in Canvas 24 hours after the deadline. Once a quiz, assignment, or exam is closed, you may not submit work. Please contact me if you have any issues meeting a deadline.

GRADING

All of 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 discussions, 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 = 1,000

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Grade</th>
</tr>
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<tbody>
<tr>
<td>1000 – 900</td>
<td>A</td>
</tr>
<tr>
<td>899 – 800</td>
<td>B</td>
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<tr>
<td>799 – 700</td>
<td>C</td>
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<tr>
<td>699 – 600</td>
<td>D</td>
</tr>
<tr>
<td>599 – 500</td>
<td>F</td>
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</tbody>
</table>

COURSE EXPECTATIONS

As the instructor in 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 INFORMATION

Mandatory Testing
All students, faculty, and staff will be required to have a COVID-19 test at designated intervals throughout the fall semester, with the first testing interval being Aug. 16 - Sept. 10. Additional testing intervals will be determined and announced. Vaccinated individuals can opt out of the mandatory testing requirement by uploading proof of vaccination by Sept. 10.

Face Masks
I request that all students comply with a new mandate from the City of Denton to wear a face-covering indoors per CDC guidance for our region. The Delta variant is highly contagious. You can protect yourself and others by wearing a mask.

**UNT face-covering requirements are subject to change due to community health guidelines. Any changes will be communicated via the instructor. I will uphold any requirements put in place.**

COVID-19 Vaccinations and Boosters
I also STRONGLY advise getting vaccinated as soon as possible. OVERWHELMING evidence suggests people with the vaccination can avoid serious illness and death. Please remember, if you have been vaccinated, it is still important to wear a mask. UNT is offering incentives to getting vaccinated [https://healthalerts.unt.edu/vaccine](https://healthalerts.unt.edu/vaccine) (Links to an external site.) Booster shots may become available to the general population during the semester. If they do, I highly recommend getting the booster if you were vaccinated earlier this Spring.

COVID-19 Impact on Attendance
While attendance is expected as outlined above, all of us need to be mindful of our health and safety along with the health and safety of everyone in our community. Please contact me if you are unable to complete your work for the week because you are ill or you are experiencing other issues related to COVID-19. It is important that you communicate with me before the work due date.

If you are experiencing any symptoms of COVID-19 ([https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html)) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to class. UNT also requires you to contact the UNT COVID Hotline at 844-366-5892 or COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure. These actions are an important part of protecting your health and those of others in the community.

If we are required to go shift to virtual meetings, we will continue with the coursework listed in Canvas and meet virtually via Zoom

UNT POLICIES listed on the following page
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 website at http://disability.unt.edu/. You may also contact them by phone at 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. 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).
UNT POLICIES Continued

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) 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 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 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.

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 of 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/). 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) to get clarification before the one-week deadline.
UNT POLICIES continued

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://clear.unt.edu/canvas/student-resources)
Academic Success Center (https://success.unt.edu/asc)
UNT Libraries (https://library.unt.edu/)
Writing Lab (http://writingcenter.unt.edu/)
MathLab (https://math.unt.edu/mathlab)

Library Resources
UNT Libraries (https://library.unt.edu/)
UNT Library Research Support (https://library.unt.edu/research/)
Subject Librarian - Jennifer Rowe
Phone: 940-369-7815
Email: jennifer.rowe@unt.edu
RHAB Subject Library Resources Page (https://guides.library.unt.edu/c.php?g=69648&p=452741)
PUBH 4020 Biostatistics Library Resource Guide (https://guides.library.unt.edu/PUBH4020)
STUDENT PROGRAMS / SERVICES / ORGANIZATIONS continued

Student Support Services

Registrar (https://registrar.unt.edu/registration)
Financial Aid (https://financialaid.unt.edu/)
Student Legal Services (https://studentaffairs.unt.edu/student-legal-services)
Career Center (https://studentaffairs.unt.edu/career-center)
Multicultural Center (https://edo.unt.edu/multicultural-center)
Counseling and Testing Services (https://studentaffairs.unt.edu/counseling-and-testing-services)
Student Affairs Care Team (https://studentaffairs.unt.edu/care)
Student Health and Wellness Center (https://studentaffairs.unt.edu/student-health-and-wellness-center)
UNT Food Pantry (https://deanofstudents.unt.edu/resources/food-pantry)
ALL Programs and Services (https://studentaffairs.unt.edu/programs-and-services)

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

Public Health Student Association (https://unt.campuslabs.com/engage/organization/phsa)
UNT Rotaract Club (https://unt.campuslabs.com/engage/organization/global-medical-brigades)
Global Medical Brigades (https://unt.campuslabs.com/engage/organization/global-medical-brigades)
Student Health Advisory Committee (https://unt.campuslabs.com/engage/organization/student-health-advisory-committee)
Alternative Breaks (https://unt.campuslabs.com/engage/organization/alternative-service-breaks)
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)
Alpha Epsilon Delta Health Pre-Professional Honor Society (https://unt.campuslabs.com/engage/organization/alphaepsilondelta)
American 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)

Full List of Organizations Related to Public Health, go to the student organization search page and search ‘public health’ https://unt.campuslabs.com/engage/organizations
**CALENDAR**

The semester calendar is posted below. It includes information for each week’s topic, required weekly readings, and due dates for assignments. Remember, weekly supplemental material is not listed here. It is your responsibility to go to Canvas to find the posted material for the week. Canvas is where you will find the weekly instructions, supplemental material, slides, lectures, weekly participation assignments, quizzes, case study information, exams, grades, and more. The material will be posted throughout the semester. These dates and topics are subject to change.

<table>
<thead>
<tr>
<th>Week Dates</th>
<th>Module Topic</th>
<th>Materials to Review</th>
<th>Participation and Assignments</th>
</tr>
</thead>
</table>
| Week 1 8/23 – 8/29 | Introduction to the course  
*no class Wednesday* | Find access to textbook  
Readings in Module 1 | Participation  
Navigate course on Canvas |
| Week 2 8/30 – 9/5 | Introduction to Biostatistics                    | Chapter 1  
Readings in Module 2 | Participation  
Quiz 1 |
| Week 3 9/6 – 9/12 | Study Designs  
*No class Monday (Labor Day) | Chapter 2  
Readings in Module 3 | Participation  
Quiz 2 |
| Week 4 9/13 – 9/19 | Quantifying the Extent of Disease                | Chapter 3  
Readings in Module 4 | Participation and Quiz 3  
Case Study 1 Due 9/19 |
| Week 5 9/20 – 9/26 | Summarizing Data  
*no class Wednesday* | Chapter 4  
Readings in Module 5 | Participation  
Quiz 4 |
| Week 6 9/27 – 10/3 | The Role of Probability                          | Chapter 5  
Readings in Module 6 | Participation  
Quiz 5 |
| Week 7 10/4 – 10/10 | Confidence Interval Estimates                    | Chapter 6  
Readings in Module 7 | Participation  
Quiz 6 |
| Week 8 10/11 – 10/17 | Midterm                                           | Midterm available  
10/14 – 10/17 | Participation  
Midterm Due Sunday 10/17 |
| Week 9 10/18 – 10/24 | Hypothesis Testing Procedures                  | Chapter 7  
Readings in Module 9 | Participation  
Quiz 7 |
| Week 10 10/25 – 10/31 | Power and Sample Size                          | Chapter 8  
Readings in Module 10 | Participation  
Quiz 8 |
| Week 11 11/1 – 11/7 | Multivariable Methods                            | Chapter 9  
Readings in Module 11 | Participation  
Quiz 9 |
| Week 12 11/8 – 11/14 | Nonparametric Tests                              | Chapter 10  
Readings in Module 12 | Participation and Quiz 10  
Case Study 2 Due 11/14 |
| Week 13 11/15 – 11/21 | Survival Analysis                               | Chapter 11  
Readings in Module 13 | Participation  
Quiz 11 |
| Week 14 11/22 – 11/28 | Data Visualization                              | Chapter 12  
Readings in Module 14 | Participation  
Quiz 12 |
| Week 15 11/29 – 12/5 | Review for Final  
*no class this week* | Review for Final  | Participation  
No Quiz |
| Week 16 12/6 – 12/10 | Finals Week                                       | Final Available  
12/6 – 12/10 | Final due 12/10 by 11:59 pm |