

Master of Public Health Program, University of Texas El Paso
Course Syllabus

TOPIC	CONTENT
Course Name (CRN)	Biostatistics in Public Health (PUBH 5305) (CRN: 12764)
Semester/year	Fall 2022
Graduate credit hours	3
Class location, day, time	Tuesdays 5:30 pm - 8:50 pm Location: Undergraduate Learning Center 336
Instructor, Office Hours	Dr. Oralia Loza oloza@utep.edu 915.747.7232 Office Hours: Tuesdays (1130a - 1p) and Thursdays (1130a - 1p) Location: Zoom (link is posted on Bb)
Course description	Core course focuses on the analysis, interpretation, and presentation of public health data. Overview of measurement methods, descriptive statistics, confidence intervals and bivariate hypothesis testing using t-tests, Chi-Square test analysis of variance and multiple comparisons, correlation, and their non-parametric test equivalents.
Course pre-requisites	Admission to the MPH or Graduate Certificate in Public Health Program. One prior UG or GR statistics course with grade of B or better.
Required textbooks	Essentials of Biostatistics for Public Health, Second Edition [Paperback] Authors: Lisa M. Sullivan Publisher: Jones & Bartlett Learning Print: (ISBN-10: 1449623948) (ISBN-13: 978-1449623944) http://www.jbpub.com/essentialpublichealth/sullivan/2e
Required Software	<ol style="list-style-type: none"> 1. Microsoft Office (Word, Excel, and PowerPoint) <ul style="list-style-type: none"> - Download Microsoft Office programs for free via UTEP at Microsoft Office 365. 2. IBM® SPSS® data management and statistical analysis software <ul style="list-style-type: none"> - Download SPSS for free via UTEP at SPSS IBM. - Access online free at UTEP MY.APPS.UTEP.EDU - You can also purchase discounted student license for the Standard GradPack (any version) at OnTheHub or Student Discounts 3. Zoom 4. Google Chrome

TOPIC	CONTENT
<p>Supplemental Reading (not required)</p>	<p>The Practice of Statistics in the Life Sciences, Second Edition Authors: Brigitte Baldi and David S. Moore Publisher: W. H. Freeman Print: (ISBN-10 1-4292-7271-6) (ISBN-13 978-14292-7271-1) eText: (ISBN-10 1429266937)(ISBN-13 9781429266932) http://www.whfreeman.com/catalog/Product/practiceofstatisticsinthelifesciences-secondedition-baldi</p> <p>Discovering Statistics Using IBM SPSS Statistics, Fourth Edition [Paperback] Print: (ISBN-10: 1446249182) (ISBN-13: 978-1446249185) Authors: Andy Field Publisher: SAGE Publications Ltd http://www.uk.sagepub.com/books/Book238032</p>
<p>Additional Resources</p>	<p>Health Science Librarian Team</p> <ul style="list-style-type: none"> • Marissa Testerman (she/her/hers) Access Services Instruction Librarian Nursing Public Health Social Work Office: 915-747-5269 Email: mtesterman@utep.edu http://libguides.utep.edu/public_health • Harvey Castellano Associate Library Director, Research, Instruction & Access Services for Nursing & Pharmacy Email: hcastell@utep.edu https://libguides.utep.edu/prf.php?account_id=81079 <p>Campus Resources</p> <ul style="list-style-type: none"> • Technology Support Center (TSC) Computer Lab Workshops: https://www.utep.edu/technologysupport/TSCenter/tsc_workshops.html • Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in-person on campus. • UTEP Library: Access resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students. • University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources. • Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.

TOPIC	CONTENT
Course format	Course combines lectures and homework assignments. Some assignments are assigned for groups and others are to be completed on an individual basis. Lecture notes, course material, assignments, graded assignments (with feedback), grades, and other selected materials will be on BlackBoard (BB).
THE COUNCIL ON EDUCATION FOR PUBLIC HEALTH FOUNDATIONAL AND CONCENTRATION COMPETENCIES (CEPH)	The UTEP MPH program is nationally accredited by the Council on Education for Public Health (CEPH). The CEPH has defined <u>22 foundational competencies</u> required for attainment of the MPH degree; in addition, our MPH program has defined <u>5 concentration competencies</u> that reflect the unique training that you will receive in our program in <i>Hispanic and Border Health</i> . During orientation, you were provided with the complete list of the foundational and concentration competencies. Each of your courses will address different competencies. The competencies that will be addressed in this course are listed below and during the first class session, your professor will review these with you. In different ways throughout the semester, you will be evaluated on your <u>knowledge</u> regarding the specific competencies addressed in this course, and you will be assessed on your <u>ability to apply</u> each of the competencies addressed in this course.
Course Competencies	<p>Evidence-based Approaches to Public Health</p> <ol style="list-style-type: none"> 1. Apply epidemiological methods to the breadth of settings and situations in public health practice 2. Select quantitative and qualitative data collection methods appropriate for a given public health context 3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate 4. Interpret results of data analysis for public health research, policy or practice <p>Communication</p> <ol style="list-style-type: none"> 19. Communicate audience-appropriate public health content, both in writing and through oral presentation <p>MPH Hispanic and Border Health Concentration Competencies</p> <ol style="list-style-type: none"> 3. Identify and access public health data on communicable and non-communicable diseases in Hispanic and border communities (including vital stats and disease registries; health and nutrition surveillance data; census data; national surveys).

TOPIC	CONTENT
<p>Assessment strategies</p>	<p>Your <u>knowledge</u> of course content related to each competency addressed in this course will be tested in the following ways:</p> <p>SPSS Modules: These modules include screen shots with directions to generate univariate and bivariate descriptive statistics, plots, and tests.</p> <ul style="list-style-type: none"> SPSS 1. Introduction to SPSS and Importing data SPSS 2. Entering Data and Defining Variables SPSS 3. Data Manipulation SPSS 4. Introduction to Graphing SPSS 5. Univariate Descriptive Statistics and Plots SPSS 6. One-Sample Binomial Test SPSS 7. One-Sample t-Test SPSS 8. Bivariate Descriptive Statistics and Plots SPSS 9. Two-Sample t-Tests and Paired t-Test SPSS 10. One-Way ANOVA and Multiple Comparisons SPSS 11. Chi-square Analysis and Odds Ratios SPSS 12. Correlation SPSS 13. Nonparametric tests <p>Exams: Students will also be tested on general course material in exam format.</p> <ul style="list-style-type: none"> Midterm Exam: CHAPTERS: 2, 4, 5 and SPSS: 1-7 Final Exam: CHAPTERS: 7 and SPSS: 8-13 <p>Word Problems from the Textbook: Word problems will be assigned from CHAPTERS: 2, 4, 5, 7</p> <p>Your <u>ability to apply</u> course content related to each competency addressed in this course will be tested in the following ways:</p> <p>Bivariate Analysis Project (BAP): Students will identify a dataset and develop and test three hypotheses. This project will be completed in separate assignments then presented in a final 10-minute presentation and a report.</p> <ul style="list-style-type: none"> BAP 1: Selecting a Dataset and Variables BAP 2: Selecting a Dataset and Variable Pairs BAP 3: Univariate Analyses BAP 4: Hypotheses BAP 5: Bivariate Analyses BAP Final Presentation

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Learning Objectives	Upon completion of this course the student will learn the appropriate use of statistical methods for the analysis of data, with continuous and categorical responses, using statistical analysis software SPSS Statistics. These objectives should contribute to student's ability to critically review the public health and epidemiologic literature, and to carry out statistical analyses. Students will learn to: <ol style="list-style-type: none"> 1. identify sources of health-related data and statistics including population data, research data, and survey data from agencies 2. read and interpret summary tables and graphs from published public health manuscripts and/or reports 3. select the appropriate statistical methods and describe assumptions for descriptive statistics and bivariate tests 4. utilize appropriate statistical techniques for hypothesis testing 5. demonstrate technical skills needed to view, summarize, and analyze data using SPSS output 6. utilize biostatistical terminology in written and oral interpretations of statistical test results 7. develop written and oral presentation of a complete descriptive and bivariate statistical analyses
Grading scale	A (≥ 90%-exceptional graduate-level performance) B (80-89%-average graduate-level performance) C (70-79%-below average graduate-level performance) D (60-69%-unacceptable graduate-level performance) F (< 60%-very unacceptable graduate-level performance)
Grading Components	Student performance will be evaluated on: <ul style="list-style-type: none"> SPSS Modules (30%) Exams (30%) Bivariate Analysis Project (BAP) (35%) Class Participation (5%)
Incomplete Policy	The grade of "I" (incomplete) is considered only in very rare circumstances involving fully documented emergencies, must be requested at least <u>four weeks</u> prior to the last class of the fall term, and is allowed at the discretion of the instructor.

TOPIC	CONTENT
Attendance	<p>It is <u>UTEP policy</u> that <u>all students attend all scheduled classes</u>. Attendance will be taken at each class. When a student registers for a course, it is assumed that she/he has made arrangements to avoid conflicts that would result in chronic tardiness or absence from class. Students are personally responsible for all information or activities presented in class discussions, lectures, assignments, and/or readings. If you are unable to attend class, <i>it is your responsibility to inform the instructor before the class session. <u>Students will be administratively withdrawn for excessive unexcused absences of 2 or more classes.</u></i> Compliance is mandatory with regard to assignment due dates, student-led discussions and class presentations, reading assignments, exams and all other activities. All emergency-related absences must be documented and verified by presentation of documents to the instructor. <i>Chronic tardiness not only reflects lack of commitment and professional behavior but also is disruptive to your classmates and the instructor. You are expected to be seated and ready to begin class on time.</i></p> <p>Attendance Reporting on Bb Collaborate Ultra: Late after 10 minutes. Absent after 30 minutes. Must be present for at least 90% of the session running time or they're marked as absent.</p>
Reading assignments	<p>All assigned readings need to be completed prior to coming to the next scheduled class session. Example: The reading assignments for week 2 need to be completed prior to coming to the week 2 class session.</p>
Writing standards	<p>Effective public health leaders and practitioners must have highly developed written and oral communication skills. Excellent writing skills are a critical element of communication and information dissemination. Our MPH graduate program expects good writing skills as the norm for coursework. Please speak with the instructor for resources on-campus that can help you develop necessary writing skills (e.g., UTEP Writing Center).</p>
Late Assignment Policy	<p>Late work will receive point reduction: 50% within two days of the deadline. Submissions will receive no credit if submitted after two days.</p>
Permission to record	<p>Recording of lectures and discussion is permitted only with the approval of the instructor.</p>
Classroom electronics	<p>Use of electronic devices (i.e., laptops (except for online course), mobile phones, tablets, MP3 players) is not permitted during this course or lectures. If a situation should arise which necessitates a student to be contacted by a physician or family member, the instructor shall be notified and cell phone can be set to "vibrate." Please be advised that students who use unauthorized technology during class time will be dismissed from that week's class session.</p>
Class participation	<p>Active student participation in this course is very important. Students must be prepared to come to class to discuss, answer questions, and participate in all class activities.</p>

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Accommodations	If you have a disability and need accommodations, please contact The Center for Accommodations and Support Services (CASS) at 915.747.5148, cass@utep.edu , or visit their office located in UTEP Union East, Room 106. For additional information, visit http://sa.utep.edu/cass/ . CASS Staff are the only individuals who can validate and authorize accommodations for students with disabilities.
UTEP MPH Program Handbook	Master in Public Health (MPH) website: https://www.utep.edu/chs/phs/academic-programs/graduate/master-in-public-health.html Current MPH Handbook is available at this link.

TOPIC	CONTENT
<p>University Policies Student Conduct</p>	<p>“Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, and the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another student, any act designed to give unfair advantage to a student or the attempt to commit such acts.” <u>University of Texas Regent’s Rules and Regulations</u>, Part One, Chapter VI, Section 3.2, Subdivision 3.22.</p> <p>FOR THE PUBLIC HEALTH PROFESSIONAL, ETHICAL CONDUCT IS A CENTRAL TENET AND GUIDING PRINCIPLE OF ALL ACTIVITIES, DECISIONS AND CRITICAL ANALYSES. STUDENTS IN THE MASTER OF PUBLIC HEALTH PROGRAM AT UTEP ARE EXPECTED TO BE <u>ABOVE REPROACH</u> IN ALL SCHOLASTIC ACTIVITIES.</p> <p>Students who engage in scholastic dishonesty will be subject to disciplinary penalties, including failure in the course and dismissal from the university. “It is an official policy of university that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.” http://studentaffairs.utep.edu/Default.aspx?tabid=4386)</p> <p>“<u>CHEATING</u>” means copying from the work another student; possession and/or use during an exam or home test of materials which are not authorized by the person giving the test; using, obtaining, or attempting to obtain by any means the whole or any part of non-administered test, test key, homework solution, or computer program; falsifying research data, laboratory reports, and/or other records or academic work offered for credit.</p> <p>“<u>PLAGIARISM</u>” means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. NOTE: This includes cutting-and-pasting and photocopying from on-line and other material.</p> <p>“<u>COLLUSION</u>” means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on scholastic dishonesty.</p>

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<p>COVID-19 Precaution Statement</p>	<p>Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.</p> <p>The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.</p>

WEEKLY PLAN

Dates Tuesdays	Competency Topics	Topics: Textbook Chapter (READ BEFORE CLASS), SPSS Modules, and Bivariate Analysis Project (BAP)	SPSS & BAP Assignments and Deadlines
WEEK 1 Aug 23	Identifying and accessing public health data	Chapter 1. Introduction to Biostatistics SPSS 1. Introduction to SPSS and Importing data Special Topics: Sources of Data	
WEEK 2 Aug 30	Identifying and accessing public health data	Chapter 2. Study Designs SPSS 2. Entering Data and Defining Variables Special Topics: Paso del Norte Healthy Communities Network	SPSS 1 BAP1: DATASET - DRAFT
WEEK 3 Sept 6	Selecting quantitative data collection methods	Chapter 4. Summarizing Data (Categorical) SPSS 3. Data Manipulation SPSS 4. Introduction to Graphing	SPSS 2 BAP1: DATASET
WEEK 4 Sept 13	Analyze quantitative data	Chapter 4. Summarizing Data (Continuous) SPSS 5. Univariate Descriptive Statistics and Plots	SPSS 3 SPSS 4 (w/o assignment) BAP2: VARIABLES
WEEK 5 Sept 20	Analyze quantitative data	Chapter 5. The Role of Probability (Categorical) SPSS 6. One-Sample Binomial Test	SPSS 5 BAP3: UNIVARIATE - DRAFT
WEEK 6 Sept 27	Interpret quantitative data results	Chapter 5. The Role of Probability (Continuous) SPSS 7. One-Sample t-Test	SPSS 6 BAP3: UNIVARIATE
WEEK 7 Oct 4		Chapter 5. The Role of Probability (con't) Midterm Exam Practice Questions from Textbook	SPSS 7 Practice Questions
WEEK 8 Oct 11		MIDTERM EXAM CHAPTERS: 2, 4, 5 and SPSS: 1-7	
WEEK 9 Oct 18	Analyze quantitative data	SPSS 8. Bivariate Descriptive Statistics and Plots BAP Guidelines and Hypotheses	
WEEK 10 Oct 25	Interpret quantitative data results	Chapter 7. Hypothesis Testing Procedures (One-Sample Tests) SPSS 9. Two-Sample t-Tests and Paired t-Test SPSS 12. Correlation	SPSS 8 BAP4: HYPOTHESES
WEEK 11 Nov 1		Chapter 7. Hypothesis Testing Procedures (Chi-Square Tests) SPSS 11. Chi-square Analysis and Odds Ratios	SPSS 9 SPSS 12
WEEK 12 Nov 8		Chapter 7. Hypothesis Testing Procedures (t-Tests and ANOVA) SPSS 10. One-Way ANOVA and Multiple Comparisons SPSS 13. Nonparametric tests	SPSS 11 BAP5: BIVARIATE - DRAFT

WEEK 13 Nov 15	Identifying and accessing public health data	Special Topics: Reports and Summary Tables BAP Work Session	SPSS 10 SPSS 13 BAP5: BIVARIATE
WEEK 14 Nov 22	Analyze quantitative data Interpret quantitative data results	BAP Presentations Draft Review	BAP PRESENTATION - DRAFT
WEEK 15 Nov 29	Communicate audience-appropriate public health content	BAP Presentations (10 minutes/student or team) Final Exam Practice Questions from Textbook	BAP PRESENTATION (430p) Practice Questions
WEEK 16 Dec 5-9		FINAL EXAM CHAPTER: 7 and SPSS: 8-13	