



School of Pharmacy

Required Course Syllabus

Fall – P3

Course# PHAR 6236/Track: Global Health Colloquium

Applied Biostatistics

Course Dates: August 26 – December, 15 2018

Campbell Building – Room 214

Course Coordinator

Jongwha Chang, PhD

Office Room Number: 703

Office Phone: (915) 747-8241

E-mail: jchang@utep.edu

Office hours: Thursday 9:30 am – 10:30 am or by appointment

Biographical Sketch: Dr. Jongwha Chang is an Assistant Professor at the University of Texas at El Paso's School of Pharmacy. He is a pharmaceutical health services researcher. He obtained his master's degree in Statistics from Columbia University in the City of New York and PhD in Social & Administrative Pharmacy from the University of Michigan at Ann Arbor. He has training in health outcomes, Pharmacy administration, as well as statistics.

Course Faculty

Gabriel A. Fietze, PhD

Office Room Number: 502

E-mail: gafietze@utep.edu

Biographical Sketch: Dr. Gabriel Fietze is a Clinical Instructor at the University of Texas at El Paso's School of Pharmacy. He earned his master's degree in Experimental Psychology, a PhD in General Psychology with an emphasis in health, and obtained a certificate in quantitative psychology from the University of Texas at El Paso. He has training in health psychology, quantitative statistics, as well as assessment and program evaluation.

Course Description

This course will provide a more in-depth discussion on the analysis, interpretation, and presentation of literature and public health data and how it relates to pharmacy practice. An advanced and applied review of biostatistical principles will include: overview of RCT, T-test, ANOVA, bivariate regression, multiple regression, logistic regression, survival analysis, nonparametric tests, and repeated measure / non-inferiority.

Pharmacists' Patient Care Process: This course will assist students in analyzing / interpreting literature and critiquing statistical methods from healthcare data to formulate a more evidenced-based and cost-effective treatment plan.

Office Hours

Course coordinator office hours are Thursday from 9:30am-10:30 am or by appointment. Students may request an appointment with the course coordinator in person or via e-mail. Course instructors/lecturers will provide office hours based on appointments, which can be requested via e-mail and made at least 72 hours in advance. Questions related to the course in general should be directed to the course coordinator, whereas content/topic-specific questions should be directed to the instructor.

Course Learning Objectives

At the conclusion of this course, students shall be expected to:

- To develop an appreciation of the importance of biostatistics in public health and medical research
- To appropriately interpret statistical results, tables and figures from the public health and medical literature
- To evaluate the methodological strength of published public health research on the basis of the appropriateness of statistical methods and the extent to which the results can be generalized
- To communicate the results and limitations of statistical analyses of public health data in both technical and non-technical terms.
- To evaluate professional, lay, and scientific literature in a logical, systematic fashion.
- To apply principles of evidence-based medicine to make informed health-care decisions and recommendations.

Level of Assessment: 1 – Introduce 2 – Reinforce 3 – Apply

	CAPE Outcomes	Level of Assessment
1.1	Learner (Learner): Develop, integrate, and apply knowledge from the foundational sciences (i.e., pharmaceutical, social/behavioral/administrative, and clinical sciences) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient centered care	2
2.1	Patient-centered care (Caregiver): Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities).	2
2.4	Population-based care (Provider): Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.	2,3
3.1	Problem Solving (Problem Solver): Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution	2,3
PCOA		
3.6.1	Research study design used in medical research	2
3.6.2	Application and interpretation of statistical tests and data collection instruments	2
NAPLEX		
1.1.2	Patient medical records	2,3
1.1.4	Laboratory and diagnostic findings	2,3
1.1.7	Risk factors relevant to the prevention of a disease or medical condition and the maintenance of wellness	2,3
1.4.1	Patients and /or patients' agents	2,3
1.4.2	Interdisciplinary health care providers	1,2,3
1.5.1	Best practices, scientific literature evaluation, and health-related resources	2,3

Detailed Course Meetings & Location

Class meeting times: Friday from 10:00am-11:50am

Class meeting location: 214

In a major disruption (e.g., H1N1 epidemic, subzero weather), be prepared to maintain course progress via other means (e.g., Internet, our Blackboard course shell, etc.) and check your email (especially your UTEP miners account) regularly.

Online Platform/Blackboard:

Accessing Course Content on Blackboard: All lectures, handouts, and course material will be located in Blackboard. Log into My UTEP.edu and click on the Blackboard link to access the online course for PHAR 6220. The course is individualized and students may access lectures/handouts as they are made available by course instructors. Except in cases of a UTEP network being “down” or “offline” you are ultimately responsible to ensure that your computer is connected to the internet and that any issues are addressed prior to class and/or assessments.

Online Assessment Requirements:

This course requires the use of ExamSoft® (or CORE ELMS®). Students are responsible for creating their online login within the first week of class. If students cannot access your online account, please contact **Adrian Enriquez** (aealonso@utep.edu), to resolve this issue **within five (5) business days of the first day of class**. Students are responsible for ensuring they have access to the online assessment system. Mr. Enriquez is **NOT available** for questions or laptop failures/requests **after business hours or on weekends**. Assessments (e.g., assignments, quizzes, and exams) may be disseminated before the due date. This requires students to download the assessment using an internet connection. It is the student’s responsibility to maintain access to a reliable internet connection (with the rare exception of when UTEP’s systems are down).

Expectations of Students during Course

Activities in this course may align with work in another course(s), and students may be expected to bring in materials from these other courses for assistance in completing tasks. Students will receive notification in advance for when other materials are necessary.

Unique Dress Policy for Course: Lab coats and professional attire should be worn for all class activities.

Professional attire includes the following

- Clean white lab jacket with nametag
- Men: full length slacks, dress shirt with tie or polo shirt (shirts must have collars)
- Women: pants or skirts with blouses or dress shirts or dresses
- No scrubs, shorts, jeans, sneakers, athletic shoes, flip-flops, caps or hats, or visible undergarments will be permitted.

Students are required to wear their white lab coats upon entering the classroom. Failure to wear a white coat and professional attire, as well as other violations of professional classroom decorum, will result in a 5% grade deduction on the next graded exam. A second violation will result in a second 5% deduction on the next exam and referral to the Professionalism Committee. Subsequent violations (i.e. 3, 4, 5, etc.) will result in a 5% total course grade deduction per incident and continued referral to the Professionalism Committee.

Methods of Instruction/Learning

The learning outcomes in this course may be achieved via:

1. **Outside Preparation** – develop understanding of course content by reading and/or reviewing lectures, responding to colleagues' postings via blackboard, preparing assignments for formal presentation and/or grading
 2. **In-class Lectures** –reinforce materials provided via blackboard and/or in the textbook, allows opportunities to answer questions and provide feedback on progress/goals of assigned tasks and/or examination
 3. **Team Assignment/Activity** – offers opportunities to discuss, design, and critique assignments and/or course material
 4. **Case Discussions / SOAP Notes/Documentation** – provides practice opportunities for application of course outcomes and allows students to practice evaluating and assessing patient cases, making therapeutic recommendations, and documenting patient interactions.
 5. **Live Patient Interview** -- provides practice in communication and counseling skills as well as practice in integrating clinical information.
 6. **Written Assignments:** --provides an application for the process of delivering basic research and drug information materials in written form.
 7. **Exams/Quizzes** – allows students to demonstrate the course ability outcomes and for instructors to provide necessary feedback.
-

Required Course Technology/Tools/Needs

Recommended Textbooks (If any, optional):

- Aparasu RR and Bentley JP. Principles of Research Design and Drug Literature Evaluation, Jones & Bartlett Learning: Burlington, MA. 2015

Laptop Computer

- Students are expected to bring laptop computers to the class each day for participation in on-line exercises or assessments. It is the responsibility of the students to make sure that the laptops are in working condition and meets the University and School of Pharmacy IT requirements. (See SOP Student Handbook). Students will need to access data analysis software available at my.apps.utep.edu. Students will also be expected to have a flash drive (minimum storages of 2G) for data analyses.

Calculator

- Students are expected to bring a non-programmable calculator to class and to all assessment activities.
-

Evaluation and Grading Policy

Course point distribution will be as follows;

Type of Assessment	Total points	% Course Grade
Exam 1	30	30%
Exam 2	30	30%
Exercise X4	20 (5 for each exercise)	20%
Journal Club X5	20 (4 for each Journal Club)	20%
Total	100	100%

Assignment of Grades (Final grade will be round up – i.e., Final grade 89.6 = 90 or 89.4 = 89)

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = < 60%

All Exams will be administered via ExamSoft®, unless noted otherwise.

It is the responsibility of the **student** to monitor his/her progress during the course and see that he/she is maintaining the required competency level. Students should seek advice and assistance from the course facilitator as soon as he/she encounters any difficulty in the course.

Exams: A total of two exams will be administered in the course (exam 1 & exam 2 – but **final exam is optional**). Each exam is worth 30% of the course grade, as indicated in the grading policy above.

Exercises: There will be 4 exercises that cover topics from class. Exercise will include all individual exercise, in-class activities, and pop quizzes. Please note that in-class activities are not announced ahead of time and students will be unable to make these up in the event of an unexcused absence.

Journal Clubs: There will be 5 journal clubs that cover all aspects of evidence-based literature assessment (i.e. initial literature assessment, study design, methods, statistics, etc.). Each journal club will be an individually composed formal **written and typed response** for questions lists. A template will be provided for formatting and assessment guidance.

Participation/Professionalism/Attendance: All students are expected to **attend class, arrive on time**, and be **actively engaged in the discussion**. Student participation/professionalism/attendance will be monitored daily.

Students are expected to demonstrate professional behavior at all times. This includes in-class lectures and discussions as well as out-of-class experiences such as IPE, IPPE and online law activities.

Lack of professionalism/participation, unexcused absences, and repeated instances of tardiness may result in a grade deduction (up to 2% deduction from total grade) for *each* offense. The course coordinator reserves the right to increase percentage deduction or take alternative approach in accordance with severity of the offense and in consultation with the UTEP School of Pharmacy policies and procedures.

Missed Quizzes / Exams / Assignments Policy

Only students who miss an exam, quiz, or an assignment due date as a result of an **excused absence** will be allowed to make-up the missed assignment or assessment; in some cases, the same quiz/exam/assignment may not be feasible, and an alternative assignment designated by the course coordinator will be made available. In-class assignments and assessments will not be permitted for make-up for students who miss class time due to tardiness. Students should consult the UTEP School of Pharmacy Student Handbook for definitions and examples of excused absences.

Students with unexcused absences may not be permitted to make up any exam, quiz, or assignment(s) and may receive a grade of zero. Any unexcused absence may also result in a 2.5% deduction of the overall course grade.

Excessive tardiness (> 2 instances) will be reported to the Office of Student Affairs. Any missed work due to tardiness will not be permitted for make-up. Grade deductions proportionate to the time tardy for class will be applied to assignments (i.e. 10% class time missed due to tardiness = 10% grade deduction on the assignment), and the minimum grade penalty for tardiness is a 5% deduction. Late assignments may not be accepted for grading.

Remediation Policies:

Please refer to the Student Handbook for end-of-course remediation policies and timelines (*see Table of Contents for End of Course Remediation*). There is no in-class remediation for this course.

Technical Assistance

Checking computer requirements and ensuring that all software up to date is essential for students to access course content. **Supported browsers include** – 1) For a PC: FireFox, Internet Explorer (Do NOT use IE7), and Chrome, 2) For a Mac: Safari, Firefox, and Chrome. To enhance browser performance, students should clear the browser cache and allow pop-ups. In addition to testing the web browser, check to ensure that the computer has an updated version of Java (go to <http://java.com>, click on “Do I have Java”, click on “Verify Java Version,” update Java if needed). Additional browser plug-ins may also be needed to view some content that your instructor may share on the learning management system. Common plug-ins include: Adobe Reader, Flash Player, Windows Media Player, QuickTime. When creating documents, slide presentations, spreadsheets, etc., be sure to use Microsoft Office or a compatible program (see 10 Free MS Word Alternatives). The UTEP Technology Support Services (3rd floor, UTEP Library) can also provide students with any applications, compatibility packs, patches, and updates that may be needed.

Students working off campus may need to set up a Virtual Private Network (VPN) on their computer to access UTEP resources for this class (i.e. Library). The link below provides information in setting up a VPN connection depending on the operating system. Students may contact the Help Desk for assistance (See Technical Assistance information). <http://admin.utep.edu/Default.aspx?tabid=58534>

If technical problems are experienced with the course, students should contact the UTEP Helpdesk during: Monday– Friday: 8AM – 5PM. If calling within UTEP: 915.747.4357. If calling from outside UTEP: 915.747.5257. For more information, please visit <http://helpdesk.utep.edu>. For help with Blackboard: <http://admin.utep.edu/Default.aspx?tabid=74094>

In order for UTEP to provide a stable learning environment, Thursdays from 12:00-6:00am MST are reserved for minor preventive maintenance. This maintenance window is scheduled during the lowest usage time for the system. Blackboard may or may not be available during this time, depending on whether maintenance is necessary. Whenever possible, this time will be utilized to perform all minor maintenance. Unscheduled outages occur rarely, but they do happen. In the event of an unscheduled outage, Technology Support Services will confer with appropriate student and faculty networks to provide appropriate notifications to those affected.

Students can also visit an on-campus lab such as the ATLAS lab located within the Undergraduate Learning Center (UGLC building) for additional technical assistance. In addition to the various campus computer labs (ATLAS in UGLC or LACIT in Liberal Arts for example), Technology Support Services provides workstations for student use. To learn more, please visit <http://admin.utep.edu/Default.aspx?tabid=74174>.

Attendance and Classroom Behavior

The attendance policy for the School of Pharmacy is outlined in the Student Handbook. It is expected that students should demonstrate their commitment to the profession and respect for faculty, guest speakers, and colleagues by attending all classes and arriving to class on time prepared for the day’s lesson(s). Entry into the classroom after

session has started may result in a grade deduction or an unexcused absence; please see missed quizzes/exams/assignments policy in this syllabus for more detailed information.

Attendance will be taken at the beginning of each class by either traditional roll call, instructor notation, via a polling quiz, or distribution of a class roster. See missed quizzes/exams/assignments policy in this syllabus for grade deductions related to tardiness, excused, and unexcused absences. Falsifying attendance (i.e. by signing for another student, etc.) is considered scholastic dishonesty and will be dealt with accordingly; please see the academic integrity section of this syllabus for further information. Students are expected to contact the course instructor upon entering a classroom late and prior to starting any class activities. Not checking in with the course instructor upon entering the classroom may result in an increased grade deduction or documentation of an unexcused absence. Students are responsible for all material covered in class regardless of attendance.

If a student has an excused absence, they should immediately notify the course coordinator(s) and Office of Student Affairs. To secure approval for an absence related to travel for professional meetings or for events that fall outside of the criteria outlined please refer to the Handbook for more information regarding required documentation for submission to the Office of Student Affairs.

Unique Dress Policy for Course

Students must abide by the School of Pharmacy Dress Code Policy. A pharmacy student/intern white coat, name badge, and professional attire ***must be worn at all times*** during both IPPE and IPE, unless otherwise indicated. Please speak with course coordinator if you have questions regarding dress policy.

Exam Day Policy

No allowances will be made for an exam being missed other than documented illness or emergency. The student must contact the course coordinator for confirmation prior to the exam. If permission is granted to delay the exam; it is the student's responsibility to contact the course coordinator to arrange for an alternative exam time. In this event, the nature of the make-up will be at the discretion of the course coordinator (oral, written, increased weighting on the final, etc.). An unexcused absence from an exam may result in a grade of "zero" for that exam and will result in an extra 5% deduction of the total overall course.

Student expectations prior and during examination

1. **Seating**
 - a. Randomized assigned seating will be utilized for each examination.
2. **Room**
 - a. Students must arrive to room 15 minutes ahead of examination. Students are not permitted to be in the examination room prior to assigned seating. If the student arrives late to the examination a grade penalty can occur as stipulated by the syllabus. No additional time will be provided for the examination. **If another student has already completed his/her exam and left the exam room when an unexcused late student arrival occurs, the late arrival will not be permitted to sit for the exam and will receive a grade of zero.**
3. **Exams**
 - a. Electronic exams need to be downloaded at a minimum 2 hours prior to the examination to avoid a grade penalty as dictated in the syllabus. Repeated instances (> 1 time) of not downloading electronic exams will result in a referral to the professionalism committee on the SOP Progression Committee.
 - b. Students are responsible for having a computer for electronic exams. Computers are available to check-out as a loan for exams from the ILC, and students should make early arrangements for securing computers. Students who show up without a computer to take an electronic exam will (1)

be provided a paper exam, (2) may receive a grade deduction as stipulated in the course syllabus, and (3) will receive a professionalism referral to the SOP Progression Committee.

4. Availability of items during exam

- a. By default, faculty will provide scratch paper for examinations, unless faculty determines scratch paper is not necessary in which case students will receive advance notice that scratch paper will not be provided. Only faculty will provide scratch paper, and only scratch paper provided by the School of Pharmacy can be used during the examination. Any scratch paper utilized during an examination must have the student's name on every page and all pages must be turned in at the completion of the examination. Any exemption will be noted accordingly in the syllabus.
 - b. No backpacks, purses, hats, large coats, and/or other bulky clothing permitted; these items need to be left outside the examination room or in an area in the exam room designated by the faculty/proctor.
 - c. No food or drink allowed
 - d. No electronic devices (for example: watches, phones, calculators, etc.) are permitted on the student during an examination unless approved by the instructor prior to the examination or inspected upon entry into the exam room for approval. A specific model for calculators may be specified in the course syllabus or provided in advance of the examination to students.
 - e. Disruption of examination time due to an electronic device can result in a grade penalty as stipulated in the syllabus.
 - f. Bathroom break: No bathroom breaks permitted during examinations unless a prior accommodation is made. Faculty maintain discretion over the permissibility of bathroom breaks; students should expect that a proctor will accompany them to the restroom and will wait outside the restroom if permission for restroom use is granted. No additional time will be provided for examinations when restroom breaks occur.
-

UTEP and SOP Policy for Academic Integrity

Any student who commits an act of academic dishonesty is subject to discipline. The instructor is required to report all suspected academic dishonesty to the UTEP Office of Student Conduct and Conflict Resolution. Please refer to the Student Handbook for SOP guidance on academic integrity (*see Table of Contents for Curriculum and Classroom Policies: Academic Integrity*).

Academic 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, and any act designed to give unfair advantage to a student or the attempt to commit such acts.

Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures (HOP), and available in the Office of the Dean of Students and on the homepage of the Dean of Students at www.utep.edu/dos, may result in sanctions ranging from disciplinary probation, to a failing grade on the work in question, to a failing grade in the course, to suspension or dismissal, among others. (For more information, see: <http://sa.utep.edu/osccr/academic-integrity/>)

Professionalism and Professional Conduct

While enrolled at the University, a student neither loses the rights nor escapes the responsibilities of citizenship. Thus, UTEP and the SOP value professionalism and expect all students to not only acquire but also maintain the highest standards of professional attitudes and behaviors in their interactions with their fellow classmates, staff,

faculty, colleagues and their patients, as described in the Student Handbook and as per UTEP's student conduct policies (see <http://sa.utep.edu/osccr/student-conduct/> & <http://admin.utep.edu/Default.aspx?tabid=73922> for further information). Any student who engages in conduct that is prohibited by the Board of Regents' Rules and Regulations, University or SOP rules or by federal, state, or local law is subject to discipline whether such conduct takes place on or off campus or whether civil or criminal penalties are also imposed for such conduct. Please refer to the Student Handbook for specific expectations regarding professional conduct in the SOP (*see Table of Contents for Academic Progression: Good Standing: Professional*).

UTEP and SOP Policy for Special Accommodations (ADA)

"If you have or suspect a disability and need classroom accommodations, you should contact the Center for Accommodations and Support Services (CASS) at 747-5148." You can also e-mail the office at cass@utep.edu or go by their office in Union Building East (Room 106). For additional information, visit the CASS website at <http://sa.utep.edu/cass/>

General Statement About Course Syllabus

The course coordinator may adapt the syllabus/course calendar to support student and course success. The syllabus is subject to change to meet course needs, especially if there are unexpected disruptions or changes in class size, resources, etc. The most updated syllabus can be found on the course Blackboard shell. It is your responsibility to review the syllabus periodically for updates.

Additional Information:

Campus Concealed Carry

Effective August 1, 2016.

<http://sa.utep.edu/campuscarry/>

Civility Statement

You are expected to follow basic standards of courtesy (<http://admin.utep.edu/Default.aspx?tabid=73922>) and may be dismissed from class for blatant or sustained disruptive behavior

Cell Phone Policy

Students should carry cell phones but keep the phone on the vibrate mode in the event students need to be notified by the emergency alert system. **Cell phone use for the purpose of texting, email, or social media is not permitted.** This is disruptive to fellow classmates, faculty, and the learning environment. The use of a cell phone or the ringing of the phone in class is considered unprofessional behavior. No cellphones, calculators, laptops or other items may be used during an assessment (e.g., exam or a quiz) unless specifically as part of that assessment and approved by the faculty member/instructor.

Student Support

UTEP provides a variety of resources for those in need (e.g., if you feel overwhelmed, stressed or dealing with a crisis):

- UTEP's Counseling Center (free counseling to all students): 747-5302, which after-hours goes to a crisis line
- Mental Health Crisis Line: 779-1800
- National Suicide Prevention Hotline: 1-800-273-8255
- Veterans Crisis Line: 1-800-273-8255
- NAMI (National Alliance Against Mental Illness) of El Paso: 534-5478

- <http://carineducators.tumblr.com/survival>

Title IX

Title IX of the Education Amendments of 1972 (Title IX), prohibit discrimination on the basis of sex in education programs or activities operated by recipients of Federal financial assistance. Sexual harassment of students, which includes acts of sexual violence, is a form of sex discrimination prohibited by Title IX. Sexual violence refers to physical sexual acts perpetrated against a person's will or where a person is incapable of giving consent due to the victim's use of drugs or alcohol. An individual also may be unable to give consent due to an intellectual or other disability. A number of different acts fall into the category of sexual violence, including rape, sexual assault, sexual battery, sexual coercion, stalking, and relationship violence. All such acts of sexual violence are forms of sexual harassment covered under Title IX.

In accordance with Title IX of the Education Amendments of 1972, UTEP does not discriminate on the basis of sex in the operation of its educational programs and activities. This commitment to non-discrimination applies to both employment in and admission to such programs and activities. [Link to full text at <http://admin.utep.edu/Default.aspx?tabid=68750>]

PHAR 6236: Course Calendar and Topic Outline
Applied Biostatistics (P3 Fall)
Inclusive Dates of Course

Week	Dates	Topics	Assignments	Faculty
1	8/30/19	Course Intro / Review Biostatistics / Review of Journal Club Templates		Dr. Chang Dr. Fietze
2	9/6/19	RCT overview T-test / ANOVA		Dr. Fietze
3	9/13/19	Paired t-test / Chi Square	Exercise #1	Dr. Fietze
4	9/20/19	OLS Regression	Journal Club #1 (RCT)	Dr. Fietze
5	9/27/19	Meta-Analysis / Systematic Review	Exercise #2	Dr. Fietze
6	10/4/19	Exam 1		Dr. Fietze
7	10/11/19	Review of Exam 1 Review of Epidemiology (RR / OR / IR)		Dr. Chang
8	10/18/19	Logistic Regression	Journal Club #2 (Meta-Analysis / Systematic Review)	Dr. Chang
9	10.25/19	Survival Analysis	Journal Club #3 (Logistic regression)	Dr. Chang
10	11/1/19	Nonparametric Tests (Mann-Whitney U test / Wilcoxon Signed Rank Test)	Exercise #3	Dr. Chang
11	11/8/19	Repeated Measure / Superiority / Non- inferiority	Exercise #4 Journal Club #4 (Case-Control study)	Dr. Chang
12	11/22/19	Exam 2		Dr. Chang
13	11/29/19	Thanksgiving Break		Dr. Chang
14	12/6/19	Wrap-up (Course)	Journal Club #5 (RCT with non- inferiority)	Dr. Chang
15	12/12/19	Final exam		Dr. Chang