**School of Pharmacy**
**Research Techniques Course Syllabus**
**Course# PHAR 6211**
**Course Dates (06/20/2022 – 07/01/2022)**
**9:00am-12:00pm, Monday-Friday, Location: Campbell 213**

**Course Coordinator: Ian Mendez, PhD**
**E-mail and MS Teams: iamendez2@utep.edu**
**Office Hours: Wednesdays, 12:00pm – 1:00pm, Campbell 715**

**Additional Course Faculty:**

| Name | Position | Email |
|---|---|---|
| Taslim Al-Hilal PhD | Assistant Professor | taalhilal@utep.edu |
| Md Nurunnabi PhD | Assistant Professor | mnurunnabi@utep.edu |
| Yong Qin PhD | Assistant Professor | yqin@utep.edu |
| Rina Koyani PhD | Research Coordinator | rdkoyani@utep.edu |
| Marc Cox PhD | Professor | mbcox@utep.edu |

## Course Description

According to the Center of Evidence-Based Medicine, a better understanding of qualitative and quantitative research design and theory can offer a more comprehensive and deeper understanding of key issues in health care. Research Techniques is an elective course that provides students with a comprehensive and interdisciplinary understanding of common experimental methods and research approaches used in the Pharmaceutical Sciences. Students will first be introduced to research theory and experimental design by learning about the Scientific Method and hypothesis formation, experimental approaches and designs, experimental validity and reliability, appropriate experimental control, reporting of findings, and research ethics. The course will then introduce students to a wide range of research techniques, including computer based drug discovery, bioprinting for research, drug formulation, separation methods, immunology, and animal models, among others. Course activities will include didactic online lectures, individual article reviews, live group discussions of articles, and exams. Ultimately, this course will develop students' critical thinking and problem solving skills, provide them with a foundation in experimental design and familiarize them with common research techniques utilized in the Pharmaceutical Sciences, all with the goal of strengthening their evidence-based learning and improving their decision-making for patient care plans.

**What part of PPCP (Pharmacists' Patient Care Process) is addressed.**

This course assists students in collection and assessment of concepts and methods utilized in the pharmaceutical sciences.


**Office Hours**

Dr. Mendez will host office hours (Wednesdays 12pm-1pm in Campbell 715) and will accommodate students as time permits. Students may submit questions or request an appointment with course instructors via e-mail or MS Teams at least 48 business hours in advance. Guest lecturers should not be contacted unless the course coordinator has given permission to do so.

**Course Learning Objectives**

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

1. Understand and criticize basic concepts in research theory and experimental design.
2. Understand how technology, such 3D printing, can aid research.
3. Understand the concept of Recombinant DNA technology and its applications
4. Understand tissue/cell culture and how buffers are prepared in the laboratory.
5. Understand immunological methods (ELISA, Western blot), and their applications in research.
6. Understand liquid chromatography and electrophoresis separation methods, and their applications.
7. Understand the concept of transgenic animals and their applications in research.
8. Understand different types of microscopy and their applications in research.
9. Understand techniques used for drug formulation and discovery.
10. Understand the use of animal behavioral studies and application in research.
11. Understand how electrophysiology and optogenetics are used in neuropharmacology research.

**Detailed Course Meetings & Location**

**Location Campbell 213, 9:00am-12:00pm, Monday-Friday**

All lectures Monday through Thursday will be streamed live with recordings made available to all students. **Most live lectures will also have an in-person attendance option, with bonus point being awarded for attendance.** Some lectures may also be prerecorded. Lectures with no in-person option (online only) are denoted in the course calendar with a 🖳 symbol. Recordings will be made available in the course Blackboard shell no later than 3pm on the day they are recorded. On the two Fridays associated with the course (06/24/2022 and 07/01/2021) there will be live article discussions (9:00am – 10:15am), followed by a live exam (10:30am-12:00pm). **Students are expected to take the exam and participate in journal club sessions in-person on Fridays**, unless

alternate arrangements are approved by the course coordinator. Check your UTEP email regularly for announcements.

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 6211. The course is individualized and students may access course material as it is 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 ExamMonitor®. Students are responsible for creating their online login within the first 3 days of class. 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). If students cannot access your online account, please contact Adrian Enriquez (aealonso@utep.edu), to resolve this issue within first 3 days 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. Electronic exams need to be downloaded at a minimum of 2 hours prior to the examination to avoid a 10% grade penalty deduction. Repeated instances (> 1 time) of not downloading electronic exams will result in a referral to the professionalism committee on the SOP Progression Committee and additional 10% grade penalty deduction from the student's earned exam score.

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## CAPE Educational Outcomes

The Center for the Advancement of Pharmacy Education (CAPE) has defined educational outcomes to guide the PharmD curriculum (see AACP CAPE Outcomes weblink). The content of this course will cover the following CAPE educational outcomes. **Level of Assessment**: 1 – Introduce, 2 – Reinforce, 3 – Apply

| | CAPE Outcomes | Assessment Level |
|---|---|---|
| **1.1** | **Learner (Learner)**<br>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. | **1, 2, 3** |
| **3.1** | **Problem Solving (Problem Solver)**<br>Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution. | **1,2** |
| **3.2** | **Educator (Educator)**<br>Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding. | **1,2** |
| **3.6** | **Communication (Communicator)**<br>Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization. | **1,2** |
| | **PCOA/NAPLEX Outcomes** | |
| **1.5.1** | Best practices, scientific literature evaluation, and health-related resources | **2** |
| **3.6.1** | Research study designs used in medical research | **2** |
| **3.7.3** | Research ethics | **2** |
| **3.8.3** | Assertiveness and problem-solving techniques in relation to difficult social and professional conflicts and situations | **2** |

| Course Objectives | CAPE Outcomes | PCOA / NAPLEX | Learning Activities | Outcome Measures |
|---|---|---|---|---|
| **Objective 1**<br>Understand and criticize basic concepts in research theory, experimental design, peer reviewed publication | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.7.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 2**<br>Understand computer designed drug discovery, drug on-chip, and bioprinting technology applications for research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 3**<br>Apply drug formulation, calculation, light scattering techniques to research theory and design. | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 4**<br>Understand tissue/cell culture, how buffers are prepared in the laboratory, and their use in research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 5**<br>Understand immunological methods and their applications in research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 6**<br>Describe the chromatography, separation methods, and PCR applications in research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 7**<br>Describe the concept of Recombinant DNA technology and its research applications | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 8**<br>Understand fluorescence, confocal and electron microscopy and their applications in research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 9**<br>Understand animal models, development of transgenic animals, and application of behavioral studies in research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |
| **Objective 10**<br>Understand how electrophysiology, and optogenetics are used in neuropharmacology research | 1.1, 3.1, 3.2,3.6 | 1.5.1<br>3.6.1<br>3.8.3 | Readings, lectures, discussions, and class activities | **Exam, Assignment** |

**Expectations of Students During Course**

Students are expected to be professionals and will be treated as such unless circumstances deem otherwise. Any behavior that impairs students' ability to learn will not be tolerated. Cell phones should NEVER be heard in during live lectures! Please keep your microphones muted during live lectures and discussions. If you would like to comment, please use raise hand or text chat options. Using your laptop for other activities than taking notes may cause a disruption to the live lecture. Attendance at live lectures is not mandatory, but attendance for live journal clubs will be taken and participation points will be given for attending (see Evaluation and Grading Policy). Attendance and punctuality for live lectures are strongly recommended. Missing journal clubs or exams for work is NOT a valid reason for your absence. It is the responsibility of the **student** to monitor his/her progress during the course. Students should seek advice and assistance from the course coordinator as soon as he/she encounters any difficulty in the course.

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**Methods of Instruction/Learning**

*The learning outcomes in this course will be achieved via:*

1. **Outside Preparation:** Student will be expected to complete assignments and review slides and/or handouts before class in order to participate actively during class discussions
2. **Online Lectures:** Reinforces essential, complex information and models the processes of problem solving.
3. **Interactive Activities:** Group discussion, manuscript reviews, and other activities will be employed throughout the course as needed to promote critical thinking, strengthen understanding of techniques, and allow student to work cooperatively.
4. **Demonstrations:** Exhibitions of materials and procedures utilized in some discussed research techniques.
5. **Exams/Quizzes**: Allows students to demonstrate the course ability outcomes and instructors to provide necessary feedback.

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**Required Course Technology/Tools/Needs**

**Required Textbooks:** Materials will be provided by presenting instructors and guest lecturers.
**Laptop Computer:** Students are expected to maintain functioning laptop computers each day to view online lectures and participate in on-line discussions, exercises, and assessments. It is the responsibility of the students to make sure that the laptops are in working condition, reliable internet access is available, and laptop meets the University and School of Pharmacy IT requirements. (See SOP Student Handbook).
**Calculator:** Students are expected to have a non-programmable calculator available at all times.

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**Netiquette**

Your instructors and classmates want to generate a safe online learning environment. Please use appropriate online classroom behavior by reading the UTEP Netiquette Guide for Online Courses available at https://www.utep.edu/extendeduniversity/cid/_Files/docs/faculty-resources/student-orientation/NetiquetteGuideforOnlineCourses.

**Evaluation and Grading Policy**

Course point distribution will be as follows:

| Type of Assessment | Total Points | % Course Grade |
|---|---|---|
| Article Review I | 40 | 16% |
| Exam I | 60 | 24% |
| Article Review II | 40 | 16% |
| Exam II | 60 | 24% |
| Participation Points | 50 | 20% |
| **Total** | **200** | **100%** |

**Assignment of grades:**

**A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, F < 70%**

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 coordinator as soon as he/she encounters any difficulty in the course.

**Exams**: **Two live, synchronous examinations are scheduled at 60 points per exam**. Exams will occur on **Fridays from 10:30am-12:00pm** and include approximately 5 questions for every research technique covered during that week. Refer to the course calendar for dates, times, and topics. All Exams will be administered via ExamSoft ExamMonitor®, unless noted otherwise. **Students are expected to participate in the exams in-person during the scheduled dates and times.** *Make sure latest version of exemplify is installed on your computer.

**Article Review Assignments**: **Two article reviews worth 40 points each are due prior to Journal Club sessions.** Journal club sessions will occur on **Fridays from 9:00am-10:15am.** The article for review and a Scientific Article Worksheet will be provided in Blackboard. **Students are expected to participate in the Journal Clubs in-person during the scheduled dates and times.**

**Participation**: A total of **50 participation points** will be assigned. Points will be based on participation in discussions and completion of course assignments **during or outside of live course lectures and journal club.**

**Bonus Points**: While in-person attendance is not required **5 bonus points will be assigned for each topic that is attended in-person**, when in-person lectures are available during the week. With two topics covered each day, in-person attendees can earn up to 10 bonus points on certain days.

Course Evaluation:

During this course, you will be provided with an opportunity to evaluate this course and your instructors. The Associate Dean for Assessment, Accreditation, and Strategic Planning will send an email reminder toward the end of this course for you to complete the course evaluation. UTEP uses an online course evaluation system. Course Evaluations can be taken at **my.utep.edu** by clicking on the CLASSES TAB on the left. The Course Evaluation module will appear and your classes will be listed. Click on the Course Name, or CRN, to complete

the evaluation for the course. Your participation is an integral part of this course and the accreditation process, and your feedback is vital to improving education at the School of Pharmacy.

**Missed Exams / In-Class Activity Policy**

Only students who cannot attend live article review sessions or exams as a result of an ***excused absence or verified IPPEs*** may be allowed to makeup in-class activities and exam**. If you have an IPPE, you must have preceptor email coordinator confirming that you will be working during day and hours of exam, prior to the start of the week.** Deadlines extensions for article reviews and asynchronous assignments may be granted with an excused absence or IPPE, at the discretion of the course coordinator. The date and nature of make up exams and in-class activities will be determined by the course coordinator. Students should consult the UTEP School of Pharmacy Student Handbook for definitions and examples of excused absences. No exams, assignments, or participation points can be made up for unexcused absences. Note: See Student Handbook for further information **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 will be no in-course remediation of any assessment.

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**Technical Assistance**

ExamSoft and ExamMonitor

Students will need to contact ExamSoft support for any technical issues during an exam. This would be the only scenario where students will be allowed to use their cell phones. Although this will be flagged by ExamMonitor, faculty will know that a student contacted ExamSoft. **Students must make sure to request a case/ticket number from ExamSoft,** as this will serve as proof for the course coordinator. The case/ticket number must be submitted to the course coordinator.

During an exam, if a student has any questions/concerns regarding exam questions, please type the question(s) on the Notes section within Examplify. Please do not bring scratch paper or calculators to exams, as these will be enabled in Examplify. The contact information for ExamSoft Support. This information must be saved to your phones: **ExamSoft Technical Support 866.429.8889 or 954.429.8889**

Laptops and Computers

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 plugins 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.

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**Attendance and Classroom Behavior**

The attendance policy for the School of Pharmacy is outlined in the Student Handbook. It is expected that students will demonstrate their commitment to the profession and respect for faculty, guest speakers, and colleagues by reviewing all content on the assigned date, attending all live sessions, and being on time and prepared for the day's lesson(s). If a student is unable to review the online material scheduled for a given date, they should immediately notify the course coordinator(s) and instructor(s) as well as the *preceptor and Director of Experiential Education for the IPPE component of this course*. To secure approval for an absence related to travel for professional meetings or for events that fall outside of the criteria outlined in the Student Handbook, please refer to the Handbook for more information regarding required documentation for submission to the Office of Student Affairs.

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**Exam Day Policy**

**Students are expected to start the two course exams in-person, on time, and during the scheduled dates and times**. Students beginning after any student(s) has/have completed the exam may not be allowed to take the exam and may receive a score of zero. No allowances will be made for an exam being missed, other than excused absence or verified IPPE. The student must contact the course coordinator for confirmation of excused absence 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 and instructors (oral, written, increased weighting, etc.). An unexcused absence from an exam may result in a grade of "zero" for that exam.

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**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/)

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**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 per UTEP's student conduct policies (see http://sa.utep.edu/osccr/student-conduct/ and http://admin.utep.edu/Default.aspx?tabid=73922). 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. Refer to the Student Handbook for expectations regarding professional conduct in the SOP (***see Table of Contents for Academic Progression: Good Standing: Professional***).

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**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/

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**General Statement About Course Policy**

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 (Optional for Faculty to adapt or not):** 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 previously approved by the faculty 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://caringeducators.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 (full text at http://admin.utep.edu/Default.aspx?tabid=68750)

**Other:** The course coordinator may adapt the syllabus/course calendar to support student and course success.

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**UTEP offers the following tips for taking courses with online components**

Check Your Plan

- For starters, check your internet plan. What speed of service do you subscribe to? Is it enough to meet any new demands? FCC consumer guides on household broadband use and broadband speeds may be helpful for you to determine your home Internet usage needs.

Test Your Speed

- If your speeds are slower than expected, you should contact your internet service provider for troubleshooting tips, or if there is an outage or service disruption in your area that is affecting your speeds.
- Sometimes a simple router reboot—by powering it off and then back on again—can resolve a problem.
- If these tips do not work, you may have an equipment issue, such as an outdated router.

- Search the model number on your router to see if it's capable of providing your subscribed speeds. It might need to be updated to take advantage of higher speeds.
- If updates are not available, you may need to purchase or rent a new router from your service provider.

Create an Internet Schedule

- Even the latest Wi-Fi routers with fast service speeds can get bogged down by a family of users.
- Set guidelines with your family for daily schedules to avoid performance issues and prioritize.
- If your job offers flexible hours, you may be able to work around high-traffic times on your home network.

Microsoft OneDrive

- UTEP faculty, staff and students have the option to use Microsoft OneDrive for Business.
- The University-supported cloud storage system is accessible anywhere, anytime, from any device.
- Current students can utilize Microsoft OneDrive for Business to store, sync and share files across all devices.
- Learn more:www.utep.edu/technologysupport/ServiceCatalog/DATA_OneDrive.html

Explore Your Options

- If you get a good cellular signal in your home, another way to alleviate home Wi-Fi network congestion is to disconnect your cellular devices from your Wi-Fi network.
- You may also be able to use your cellular device as a mobile hotspot.
- Before switching any of your devices to cellular-only service, check your data plan to make sure you won't go over any data caps and incur overage charges. You can also explore options for fixed wireless service or other cellular alternatives in your area.
- If you're not seeing congestion on your in-home Wi-Fi network, turning on Wi-Fi and Wi-Fi calling from your smartphone can conserve data and reduce potential congestion on mobile networks.
- Many service providers have committed to providing free Wi-Fi hotspots during the national coronavirus emergency. Some are offering discounts or upgrades at low or no cost or eliminating caps on data plans.

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**How to Succeed in courses with online components**

If you want to be a successful student

- Treat this course like a "real" in-person course.
- Be self-motivated and self-accountable.
- Be willing to "speak up" if any problems occur.
- Be able to communicate through writing/messaging/chats.
- Practice time management and stay on schedule.
- Create a consistent quiet study space.
- Make sure you have the technical computer requirements.

If you want to be an unsuccessful student

- Wait until the last day to read or complete assignments.
- Do not review material until the night before an exam.
- Forget about deadlines.
- Do not have interactions with the course coordinator, instructors or classmates.
- Ignore emails from the course coordinator, instructors and/or your peers regarding course activities.
- Do not know about any grade requirements and the course syllabus.

**Course Number PHAR 6211: Research Techniques Course Calendar and Topic Outline**
**Location Campbell 213, 9:00am-10:15am and 10:30-1145am, Monday-Friday, 06/20/2022 to 07/01/2022**
**➡ Online only, no in-person lecture option**

| Week | | Day | Date | Topics | Faculty |
|---|---|---|---|---|---|
| 1 | | 1 | Monday 06/20 | Course Overview<br><br>Research Theory and Experimental Design | Dr. Mendez<br><br>Dr. Mendez |
| 1 | | 2 | Tuesday 06/21 | 3D Bioprinting for Research<br><br>Buffers and Cell cultures | Dr. Al-Hilal<br><br>Dr. Mendez |
| 1 | | 3 | Wednesday 06/22 | Immunology (ELISA, Western Blot, Immunohistochem)<br><br>Separation Methods: Sediment, HPLC, MS, Chromatography, Electrophoresis, Centrifugation | Dr. Mendez<br><br>Dr. Qin |
| 1 | | 4 | Thursday 06/23 | Polymerase Chain Reaction (including genotyping)<br><br>Transgenic Animals | Dr. Qin<br><br>Dr. Qin |
| 1 | | 5 | Friday 06/24 | Journal Club I: Article Review I Due<br>(Live discussion in class: 9am-9:50am)<br><br>Exam I (Live exam in class: 10am-12pm. Covers 06/20-06/23) | Dr. Mendez<br><br>Dr. Mendez |
| 2 | | 6 | Monday 06/27 | Recombinant DNA technology (Crisper)<br><br>Functional Drug Screening | Dr. Koyani<br><br>Dr. Cox |
| 2 | | 7 | Tuesday 06/28 | Organ-on-Chip Model<br><br>Microscopy (Electron, Confocal, Fluorescence) | Dr. Al-Hilal<br><br>Dr. Al-Hilal |
| 2 | | 8 | Wednesday 06/29 | Drug Formulation (calculations, light scattering, franz diffusion)<br><br>Animals Models in Research | Dr. Nurunnabi<br><br>Dr. Mendez |
| 2 | | 9 | Thursday 06/30 | Optogenetics<br><br>Electrophysiology | Dr. Peña<br><br>Dr. Simon |
| 2 | | 10 | Friday 07/01 | Journal Club II: Article Review II Due<br>(Live discussion in class: 9am-9:50am)<br><br>Exam II (Live exam in class: 10am-12pm. Covers 06/27-06/30) | Dr. Mendez<br><br>Dr. Mendez |