Independent Research III - 31842 - BMED 3223 - 11B  |  Instructor: Alejandro López-Juárez, Ph.D.

Term: Fall 2019  |  Contact: 956 882 7667, alejandro.lopezjuarez1@utrgv.edu

Class Meetings: 12 h (TBD)/week. BBRHB 1.141  |  Office location & hours: BBRHB 1.123 Mondays 8:30-10:30 am; by appointment.

Textbook and/or Resource Material
Published protocols and peer reviewed scientific papers will be available through the instructor

Course Description and Prerequisites
- The students will be introduced to formal scientific research, protocols and peer reviewed publications.
- Satisfactory standing in the BS in Biomedical Sciences program

Teaching Philosophy
- Students will be introduced to scientific research and publications. Certain degree of mastering in research in molecular biology and neurosciences will be developed. Furthermore, understanding the “why” of every experiment performed in the lab is essential to understand the general importance of the paper and to build critical thinking.

Learning Objectives/Outcomes for the Course
Understanding the elements of designing and executing a scientific research project:
- Background of the research
- Identifying a gap in knowledge
- Hypothesis and research question
- Get involved in specific experimental phases of the project.

Learning Objectives for Core Curriculum Requirements

Grading Policies
- **Oral assessment of experimental protocol background**: 50%. Understanding the science behind every experimental protocol will be verbally demonstrated.
- **Participation, questions and answers on the experimental phase of the project**: 50%.
## Calendar of Activities

<table>
<thead>
<tr>
<th>Date (ymmdd)</th>
<th>Topic</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>190826</td>
<td>Introduction</td>
<td>Read syllabus. Sign up for time in the lab</td>
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<tr>
<td>190902</td>
<td>Labor Day</td>
<td>Holiday</td>
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<tr>
<td>190909</td>
<td>DNA isolation principles</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>190916</td>
<td>DNA isolation protocol</td>
<td>Scientific Paper Discussion</td>
</tr>
<tr>
<td>190923</td>
<td>PCR principles</td>
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<tr>
<td>190930</td>
<td>PCR protocol</td>
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<tr>
<td>191007</td>
<td>Electrophoresis principles</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191014</td>
<td>Electrophoresis protocol</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191021</td>
<td>Immunofluorescence principles</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191028</td>
<td>Immunofluorescence protocol</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191104</td>
<td>Confocal microscopy principles</td>
<td>Scientific Paper Discussion</td>
</tr>
<tr>
<td>191111</td>
<td>Confocal microscopy analysis</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191118</td>
<td>Animal Husbandry principles</td>
<td>Scientific Paper Discussion</td>
</tr>
<tr>
<td>191125</td>
<td>Animal Husbandry protocol</td>
<td>Scientific Paper Discussion</td>
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<tr>
<td>191202</td>
<td>Integration of knowledge</td>
<td>Scientific Paper Discussion</td>
</tr>
</tbody>
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August 26     First day of classes
August 29     Last day to add a course or register for Fall 2019
September 2   Labor Day Holiday – NO classes
November 13   Last day to drop a course; will count toward the 6-drop rule
November 28 - 29 Thanksgiving Holiday – NO classes
December 5     Study Day – NO classes
December 6 - 12 Final Exams
December 13 - 14 Commencement Exercises

**Absence and Makeup Policy**

If an absence is unavoidable, at the professor’s sole discretion (and a documentable valid excuse), students may complete an alternate assignment which may include completing an individual version of the Team-based Learning activity or reading and summarizing a scientific article chosen by the professor or take a makeup exam.

**Other policies in class**

Cell phones need to be on vibrate/turned off during sessions. Any disruption of the session by phone ringing will be penalized with minus 5 participation points to the individual and/or team involved. Instructor reserves the right to dismiss disruptive (chatting, texting, video/screen sharing, sharing jokes among students, etc.) students from the classroom. Disrespectful behaviors are not tolerated, and are grounds for dismissal from class.

**UTRGV Policy Statements**

**STUDENTS WITH DISABILITIES:**

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who experience a broken bone, severe injury, or undergo surgery during the semester are eligible for temporary services.

**Pregnancy, Pregnancy-related, and Parenting Accommodations**

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy,
pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to contact Student Accessibility Services for additional information and to request accommodations.

**Student Accessibility Services:**
**Brownsville Campus:** Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at ability@utrgv.edu.

**Edinburg Campus:** Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at ability@utrgv.edu.
**Mandatory Course Evaluation Period:**
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available on or about:

- **Module 1**: October 2\(^{\text{nd}} - 8\(^{\text{th}}\)
- **Module 2**: November 27\(^{\text{th}} - 3\(^{\text{rd}}\) Semester
- **Full Fall Semester**: November 14\(^{\text{th}} - 4\(^{\text{th}}\)

**Attendance:**
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**Scholastic Dishonesty:**
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; 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. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to Student Rights and Responsibilities.

**Sexual Misconduct and Mandatory Reporting:**
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (oie@utrgv.edu) any instance, occurring during a student’s time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and sexual harassment, about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at 665-8287, 882-8282, or OVAVP@utrgv.edu.

**Course Drops:**
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**Student Services:**
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.
Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Advising Center, Career Center, Counseling Center, Learning Center, and Writing Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:

<table>
<thead>
<tr>
<th>Center Name</th>
<th>Brownsville Campus</th>
<th>Edinburg Campus</th>
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<tbody>
<tr>
<td>Advising Center</td>
<td>BMAIN 1.400 (956) 665-7120</td>
<td>ESWKH 101 (956) 665-7120</td>
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<tr>
<td>Career Center</td>
<td>BCRTZ 129 (956) 882-5627</td>
<td>ESSBL 2.101 (956) 665-2243</td>
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<tr>
<td>Counseling Center</td>
<td>EUCTR 109 (956) 665-2574</td>
<td>BSTUN 2.10 (956) 882-3897</td>
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<tr>
<td>Learning Center</td>
<td>BMSLC 2.118 (956) 882-8208</td>
<td>ELCTR 100 (956) 665-2585</td>
</tr>
<tr>
<td>Writing Center</td>
<td>BUBLB 3.206 (956) 882-7065</td>
<td>ESTAC 3.119 (956) 665-2538</td>
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