Course title and number: **Research Problems in Biology** BIOL-4399-01

Instructor: Md Saydur Rahman, Ph.D. - Assistant Professor
Office Location: LHSC 2.812
Office Phone: 956-882-5041

Contract with Instructor: If you have any questions (e.g., research, assignment, grades, etc.) to the content of this course, please contact me via email (please use your UTRVG email), phone or come to my office. I will be most happy to assist you anytime (time permitting); however, it may be easiest to contact me during office hours.

### COURSE INFORMATION

**Materials – Journals, Readings, Supplementary Readings:**

*Research materials:* No textbook is required, internet resources and research materials (research protocol, research papers) will be provided by instructor.

*Readings:* Supplemental reading materials or references will be provided.

**Course Description:**

The main purpose of the *Research Problems in Biology* course is to introduce students to quantitative and qualitative research methods to conduct meaningful inquiry and research in the laboratory or field studies of living organism. Students will gain an overview of research intent and design, methodology and technique, research presentation, and data analysis using statistical methods.

**Learning Objective/Outcomes:**

Upon completion, students should be able to demonstrate understanding of research problems and rescue mechanisms at the molecular, cellular and biochemical levels in living organisms. Students will be able to:

1. Understand the problem with the correct research methodology,
2. Develop a research hypothesis, research problem and related questions,
3. Collect data that accurately addresses the research problem,
4. Understand the structure and function of biological life,
5. Use research finding to make scientific decision,
6. Understand the regulation of gene and protein, and their functions in living organisms, and
7. Present data to scientific meeting/conference.

### COURSE OUTLINE/SCHEDULE

Students should meet regularly with instructor to discuss research topics and design relevant research questions about biological phenomenon. Student will be trained different research methods/techniques available to address scientific questions. Students are encouraged to prepare and study the assignments and PowerPoint presentation.

Instructor will be responsible for addressing students concerns and research-related questions and topics will be discussed for clarifications. During the semester, student will learn biological/molecular techniques, concepts and terminology that will be instrumental in understanding the biology and physiology of organisms. These key terms will be also evaluated according to course objectives and the student will be expected to take class/research notes and to study these terms in supporting materials (printed copies, online materials). Instructor would be glad to open discussions on cellular and molecular biology, and stress physiology related topics during semester to develop and assess student learning and improvement of research performance. Students are expected to attend
laboratory research classes and to study the research materials including handouts, research papers, outlines, and PowerPoint presentations.

Research assignments will be instructed and evaluated throughout the semester and are due in the corresponding deadlines assigned by the instructor. Missing or incomplete assignments may result in negative evaluation. These extra activities aim to develop specific scientific skills of students and to explore the course content. Critical thinking will be promoted in research-related activities. Students are encouraged to actively participate in group discussion and also ask questions. These attitudes will help the student performance and make the research findings more interesting for student. All research-related questions are very important and will be addressed accordingly by the instructor.

---

### COURSE REQUIREMENTS

#### Instructional/Research Methods:
Lecture, research in laboratory, field work, discussion on published research paper, and PowerPoint presentations.

#### Activities:

*Laboratory/Field Research, and Homework Assignments:* Students are required to attend hand-on laboratory research work in every week (at least 8-9 hours depend upon research work). Homework may be assigned with specific research topics as well as a due date and time. Late homework will not be accepted. The value (percentage of your final grade) of each homework assignment will be set at the time of the assignment. I reserve the right to modify the schedule and assignments.

#### Expectations:
- Be punctual and attend every lectures.
- Be attentive and participate in lab/research discussions.
- Be respectful to lab mates.
- Complete assignments on time.
- Achieve an average grade of ≥60% according to the grading basis (please see below)

#### Grade Basis:

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Performance:</td>
<td>50</td>
</tr>
<tr>
<td>Attendance:</td>
<td>10</td>
</tr>
<tr>
<td>Assignments:</td>
<td>30</td>
</tr>
<tr>
<td>Presentation:</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total 100 points</strong></td>
<td></td>
</tr>
</tbody>
</table>

*A missing assignment will be counted as zeroes in the overall grade computation. I reserve the right to adjust your grade for violation of the minimum expectations.

#### Absenteeism:
1. Each student will be placed on subject to a penalty of point off of their final grade for each unexcused absence in the laboratory/field research work. A tardy will count as 0.5 point per class of an unexcused absence.
2. Upon exceeding 4 unexcused absences, I reserve the right to administratively drop you from the course.

#### Grading Policies:
The following scale is adhered to strictly.

- 90.0 – 100% = A
- 80.0 - 89.9% = B
- 70.0 - 79.9% = C
- 60.0 – 69.9% = D
- <60.0% = F
Calendar of Activities:
The UTRGV academic calendar can be found at http://my.utrgv.edu at the bottom of the screen, prior to login. Important dates for Spring 2017 include:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 15</td>
<td>Martin Luther King, Jr. Day</td>
</tr>
<tr>
<td>January 16</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>January 31</td>
<td>Census day</td>
</tr>
<tr>
<td>March 12-17</td>
<td>Spring Break</td>
</tr>
<tr>
<td>April 12</td>
<td>Drop/Withdrawal Deadline; last day for students to drop the course and receive a DR grade. After this date, students will be assigned a letter grade for the course that will count on the GPA.</td>
</tr>
<tr>
<td>May 3</td>
<td>Study Day; no classes</td>
</tr>
<tr>
<td>May 14</td>
<td>Grade due</td>
</tr>
</tbody>
</table>

COURSE SPECIFIC PROCEDURES AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures:
*Responsible Use of Technology Resources:* It is expected that all students will only use laptop computer, iPAD, and other technology in class. Answering a cell phone, listening to music, texting, or using a laptop computer for unrelated matters to the course may be grounds for dismissal from class and/or other penalties. Students are not allowed to use video, nor audio recording devices of any kind during class time without prior consent of the instructor.

Students with Disabilities:
If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus:** Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@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. Online evaluations will be available Nov. 18 – Dec. 9, 2015. Students who complete their evaluations will have priority access to their grades.

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 Integrity:
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, 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 the Dean of Students.
Sexual Harassment, Discrimination, and Violence:
In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or 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 in an environment free from sexual misconduct and discrimination.

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.

I have read and understand the information and UTRVG policies in this syllabus and will abide by those policies. YES____, NO____.
If your answer is NO, please explain why or ask any questions:

Your name: ________________________________, Student ID: __________________
Your signature: ________________________________, Date: __________________
