

**Biology 1108 - Topics in the Study of Life**  
**PERSIST/FYRIS Section - Drug Development and Bioassay II**  
**CRN 25811**  
**Spring, 2021**

Dr. Marc Cox 747-5429; [mbcox@utep.edu](mailto:mbcox@utep.edu)  
Office Hours: Biosciences 3.128, please email to schedule an appointment.

**Day/Time:** M/W 9:00 AM - 10:20 AM

**Location:** Remote

**Assistant Instructor:** Isela Rodriguez; [iarodriguez8@miners.utep.edu](mailto:iarodriguez8@miners.utep.edu)

**Course Objectives:** In the first semester (BIOL 1107) the students will have learned the concepts of basic drug development and the application of a yeast-based bioassay for drug screening. In this course the students will use their newly acquired knowledge and adapt their bioassay for use in screening environmental samples for the presence of hormone mimicking contaminants. In doing so, the students will gain a broad understanding of model systems and how they can be applied across many different settings and disciplines. As part of this course students will also gain a broad understanding of the basic principles of toxicology and environmental health.

**Textbook:** There is no required textbook. All reading material will be provided.

**Quizzes:** Several quizzes will be administered during the semester. The quizzes will be about the topics covered in the videos and presentations uploaded to Blackboard, as well as the research papers provided as assignments.

**Project Proposal:** Students will prepare a brief project proposal that includes, background, problem to be addressed and hypothesis at the beginning of the semester. Guidelines and rubric will be uploaded to Blackboard.

**Assignments:** Activities will be given and graded during the learning modules. Students will have 1 week to finish any assignment. The grades will be based on assignment guidelines.

**Interim Lab Report:** Midway through the semester, students will submit an interim draft report including the experimental approach and rationale for the selected methodology. This interim report will serve as an initial draft of the final report. Guidelines and rubric will be uploaded to Blackboard.

**Group Presentations:** Several group presentations are scheduled throughout the semester (see schedule for presentation details).

**Final Report:** Students will build on their interim lab report throughout the semester to develop a larger final report that includes the expected outcomes and potential problems of the proposed project, as well as provides conclusions and potential future directions. Guidelines and rubric will be uploaded to Blackboard.

**Grading:** Attendance is worth 10% of your final grade. All quizzes combined are worth 10% of your final grade. The assignments are worth 5% of your final grade. The project

proposal, interim lab report and data presentations are each worth 15% of your final grade. The final report is worth 30% of your final grade. Grading scale: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F is <60%.

**Make-up Policy:** There are no make-up quizzes except in extraordinary circumstances. If a student has a serious illness, notify the instructor before the quiz is given and provide documentation of your excuse. If there is a legitimate excuse for being absent, make arrangements with the instructor to take the quiz before.

**Attendance** It is the student's responsibility to attend class regularly. Attendance will be monitored and graded through access to the videos and presentations uploaded to Blackboard each Monday and Wednesday. Students will be given a 24-hr. period to access and review the class content. If a student has a serious illness or a legitimate excuse (includes military personnel called to active duty or training) for being absent, make arrangements with the instructor beforehand.

**Drop Policy:** April 1<sup>st</sup> is the last day students may drop with an automatic "W". Census day is February 3<sup>rd</sup>.



**Academic Integrity Policy:** UTEP's policies regarding academic integrity apply in this course. Cheating will be reported to the appropriate administrative officer. Failure to take the final exam may result in receiving an F in this course. Incompletes are only given in exceptional circumstances.

**Civility Statement:** Please be respectful of all students' right to learn without disruptions. In line with this statement please make an active effort to keep the talking to a minimum during lectures and presentations. Also make an active effort to either turn cell phones off or turn them to vibrate mode prior to the start of class.

**Disability Statement:** If a student has a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email to [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass).

**Schedule:**

Date		Topic	Assignment
1/25	M	Welcoming introduction to Biol 1108	Assignment: research paper summary <b>Due: 2/1/2021</b>
1/27	W	Introduction to Basic Principles of Toxicology	
2/1	M	Introduction to Environmental Monitoring	

2/3	W	Introduction to the endocrine system and endocrine disruptors	Quiz #1
2/8	M	Introduction to natural supplements and extraction methodologies	Assignment: research paper summary <b>Due: 2/15/2021</b>
2/10	W	Group presentations: Project Proposals	Quiz #2 Turn in project proposal
2/15	M	Drug discovery and target identification	Assignment: research paper summary <b>Due: 2/22/2021</b>
2/17	W	Hit to lead optimization process	
2/22	M	Drug solubility	Quiz #3 Assignment: research paper summary <b>Due: 3/1/2021</b>
2/24	W	Drug delivery strategies	
3/1	M	Relationship between the chemical structure of a molecule and its biological activity	
3/3	W	Dose response for potency and efficacy	Quiz #4 Assignment: research paper summary <b>Due: 3/10/2021</b>
3/8	M	Colorimetric assays and chemiluminescent detection	
3/10	W	Yeast-based bioassays	
3/15	M	<b>SPRING BREAK – NO CLASS</b>	
3/17	W	<b>SPRING BREAK – NO CLASS</b>	

3/22	M	Experimental controls	Quiz #5
3/24	W	Group Presentations: experimental approach and rationale for the selected methodology	Turn in interim lab report
3/29	M	Analysis of natural supplements	
3/31	W	Analysis of natural supplements	
4/5	M	Analysis of natural supplements	
4/7	W	Analysis of natural supplements	
4/12	M	Analysis of natural supplements	
4/14	W	Analysis of natural supplements	
4/19	M	Analysis of natural supplements	
4/21	W	Analysis of natural supplements	
4/26	M	Analysis of natural supplements	
4/28	W	Analysis of natural supplements	
5/3	M	Final Group Presentations	Final Reports Due
5/5	W	Last Day/No Class	