UTRGV
The University of Texas
Rio Grande Valley

Independent Research III 3223-03
Fall 2016

Class meeting time: Fridays 2-3:40 PM
Class meeting location: 1.208LHSB Building

Instructor: Maria Teresa Castaneda M.D.P.h. D
E mai: maria.castaneda@utrgv.edu (Best way for contacting me)

Office hours :
Mondays 2-4 PM (Academic)
Tuesday 3-4 PM (Tea/Talk) .Send an e mail.

Course Description and Learning Objectives
This course is an introduction to the theory and practice of biomedical research.

By the end of this course, students will meet the following learning objectives:

1. Articulate a personal statement of research philosophy and ethical belief;
2. Be familiar with the major methods used to accumulate evidence in the sciences;
3. Understand the basic logic and practice of data analysis;
4. Be able to perform a basic critique of existing science research;
5. Develop basic competency in formal scientific writing; and,
6. Develop basic experience in both oral and written presentation of original research work.
7. Work in roup discussions, in-class exercises, examinations, individual and team

Learning assessments

Students will gain experience in designing, implementing, and communicating a biomedical research project, and practical training in modern approaches for biomedical research. Your research project will be designed, implemented, and analyzed in collaboration with the faculty mentor you have or instructor, the activities will be presented as a team.

1) The student prepares a short proposal of the research project within the first 2 weeks of the semester, graded by the faculty mentor.
2) The student works throughout the semester on their project instructor with help from others in the class group when needed, but the project should be run by the elements of the team..
3) The student or the team prepares a draft manuscript in the second half of the semester to be graded by the faculty mentor.
4) The student writes a final manuscript on the research in the style of a relevant scientific journal, graded by the faculty mentor and the instructor

Evaluation/Assessment:

Description	% of final grade
Class participation	20%
In-class quizzes	20%
Rough draft of research proposal	20%
Written proposal	20 %
Presentation	20%

CLASS PARTICIPATION: 20% OF FINAL GRADE

You are expected to attend class regularly and participate actively. This class will be conducted in a Socratic format with emphasis on instructor/student interaction and understanding through questions and comments. The instructor will highlight key concepts detailed in the assigned readings; the Socratic model is employed to encourage analysis, critical thinking, preparation, and long term learning on the part of the student. All students should come to class prepared to discuss the topic scheduled on the calendar. NOTE that some class activities will require that students submit deliverables in class. For example, in advance of beginning work on their research proposal, students will need to form groups and request approval of a research topic from the instructors. When the proposed topic is due, it will be considered as part of the student's participation grade for that class meeting.

IN-CLASS QUIZZES: 20% OF FINAL GRADE

On occasion* the instructors will administer short in-class quizzes designed to check students' comprehension of major concepts. Quizzes, which could be true/false, multiple-choice or short answer, will comprise questions taken directly from the readings assigned that class meeting. Quizzes cannot be made up; missing a quiz results in a grade of F. However, at the end of the semester, the lowest quiz grade will be dropped.

ROUGH DRAFT OF RESEARCH PROPOSAL: 20% OF FINAL GRADE

Research proposals lay out the plan a researcher will follow to conduct a research study. Among other uses, proposals are vital to gain clearance to proceed with research and/or to win funding from grant agencies.

Your proposal should be 6 to 8 pages in length and include the following elements:

1. Statement of the subject of the proposal, including why it is important;
2. Overview of what is known about the subject, including a literature review;
3. Hypotheses (both null and working) which would facilitate the investigation of this topic;
4. List and definition of key concepts, constructs and variables;
5. Proposed data to be collected and why;
6. Probable population, sample size and description;
7. Probable methods of data collection;
8. Possible ethical considerations (if any); and,

9. Desired or anticipated results.

WRITTEN PROPOSAL: 20% OF FINAL GRADE

The final, full written proposal will comprise the material in the rough draft as well as any suggestions for strengthening the proposal that students receive from the instructors.

Research plan will include:
– A title
– An overview of background behind your research topic
– A hypothesis or research question
– A brief timeline of proposed study
– at least 3 in text citations

Final research report:
Due dates: December 2,

Written in the style of a journal article from the research field of study the research report must include:

A title, authors, affiliations
Abstract
Background
Hypothesis
Methods
Results (using appropriate graphs and statistics for that field of study)
Conclusions/Discussion/Future Directions
In-text citations (at least 8).

PROPOSAL PRESENTATION: 20% OF FINAL GRADE

During the final two class sessions of the semester, research groups will present their proposals to the rest of their class in accordance with generally accepted standards for scholarly conferences. More detailed information will follow under separate cover but among the expectations for this assignment are (1) groups will present within a specified time limit and (2) all group members will contribute to the presentation.

Course Calendar:

Date	**Topic**	
Week #1 **Sep,2**	**Work with these question: In your daily life how do you do research, Student will write an essay ,and return Sep.9**	
Week#2 Sep,9	Course overview: Introduction. Why Research.	

Week# Sep,16	Philosophy of science and ethical research.	
Week#3 Sep.23	The scientific method. Establishing your framework, research Methods and hypothesis. .	
Week#4 Sep,30	Research design: Controls	
Week#5 Oct,7	Experimental Process :Biosafety	
Week#6 Oct,14	Reading a scientific paper.	
Week#7 Oct,21	Writing a research Paper.	
Week#8 Oct,28	Journal Club.	.
Week#9 Nov,4	Writing a research proposal PPT	
Week # 10 Nov,11	Start working Draft proposal	
Week#11 Nov,18	Draft proposal.	
Week #12 Nov,25	Thanksgiving Hollyday	
Week #13 Dec,2	Presentation.	
Week#14 Dec,9	Presentation	

<u>Some topics recommended</u>

Cigarrete smoking.

High blood pressure.

BMI

Sleep

Time in non academic activities.

kCal in every student.

Element to use for research

jobs and their effects: Many researchers have studied the negative relationship between student work — both on and off campus

Student debt

Exam habits.

Use of resources for study and prepare exams

Update the Literature

Ask students to update a literature review done about five years ago on a topic in the discipline. They will have to utilize printed and electronic resources to identify pertinent information.