THE UNIVERSITY OF TEXAS AT EL PASO  
COLLEGE OF SCIENCE  
DEPARTMENT OF BIOLOGICAL SCIENCES

Biol 4223 (CC 26352)  
TRANSMISSION ELECTRON MICROSCOPY  
Two hours credit  
Spring, 2014  
Friday 1:30-5:20 p.m. Biol. 108  
Co-requisite Biol 4322 or Biol 5323  
Prerequisite: Biol 1107, Biol 1305  
Instructor: Joanne T. Ellzey, Ph.D.  
Office Location: Biol 105  
Contact Information: (915)-747-6880  
jellzey@utep.edu  
Office Hours: MWF 9:30-10:15 a.m.; TR 10:30-11:20 a.m. BIOL 105 or by appointment (747-6880); Lab phone: 747-5125 (Jose Cano).  

Activities/ Assignments: BEEM capsules will be provided. Each final report should have a format of an Introduction which will include your goals for the semester and a review of the histology of the tissues chosen with illustrations (drawings or Xerox copies from references). The Materials and Methods will include the safety lecture, fixation, glass knife preparation, sectioning procedures, post staining techniques, EM-10 instructions, Gatan camera instructions and Axioskop instructions. The Results will include your original light and electron micrographs with captions and the interpretation of these photographs in relationship to the histology and ultrastructure of the tissues. The Discussion and Conclusions will summarize the significance of your results and suggestions for improvements and/or future research. Include a Literature Cited for references mentioned in the report as author(s), date. A minimum of ten references is recommended. (I prefer that you do not use Wikipedia.) Grades will be dependent on attendance, meeting the progress deadlines, the quality of the sectioning, photography, printing, and the accuracy and effectiveness of the final report(s). In conference with Dr. Ellzey, select the light micrographs and a minimum of the five best electron micrographs of each specimen for your report(s). Reports that are late will have a letter grade deducted for each late day.

Assessment: Intended learning outcomes will be determined by the quality of the final report.
Objectives: The course objectives are to master the techniques of transmission electron microscopy by the dates recommended below and to complete the final reports which will include your light and electron micrographs and their interpretation. In order to master the electron microscopy techniques as recommended, you will need to make appointments with Jose Cano during the week to practice and to obtain results.

APRIL 5 LAST DAY THAT A STUDENT MAY DROP A CLASS OR OFFICIALLY WITHDRAW WITH AN AUTOMATIC "W".

DATE ASSIGNMENT

Jan. 31 Microtome lessons when you have fresh, sharp knives and trapezoids.
Feb. 7 (Prepare thick sections of tissues to view under the light microscope before thin-sectioning. Photographs can be taken on the EM-10 as soon as you have smooth, metallic silver and gold sections without post staining artifacts.)
   Acceptable trapezoids and glass knives for thin-sectioning.
Feb. 21 Microtome. EM-10. Light micrographs of thick-sections.
Feb. 28 Microtome. EM-10 Metallic silver sections to photograph on EM-10.
March 7 Microtome. EM-10. Obtain photographs of first tissue.
March 10-14 SPRING BREAK –NO CLASSES Lab will be open except, Mar 14.
March 21 Microtome. EM-10. Obtain photographs of second tissue.
March 28 Microtome. EM-10. Finish photographs of first tissue.
April 4 Microtome. EM-10. Finish photographs of second tissue. Discuss your LM and TEM images with Dr. Ellzey to select images for your reports.
April 11 Work on final reports.
April 18 STUDENT STUDY DAY-NO CLASSES
April 25 Turn in first draft of reports for editing by Dr. Ellzey.
May 2 Turn in final lab reports by 5:00 p.m. to Dr. Ellzey.

Grading Policy: Grades will be dependent on attendance, meeting the progress deadlines, the quality of the sectioning, photography, printing, and the accuracy and effectiveness of the final report(s). In conference with Dr. Ellzey, select the light micrographs and a minimum of the five best electron micrographs of each specimen for your report(s). Reports that are late will have a letter grade deducted for each late day. Failure to turn in a final report will result in an F. Incompletes are given only in exceptional circumstances.

Grade Disputes: If you feel that you have been graded improperly make an appointment with me. If this does not resolve your concern, you may make an
appointment with the departmental chair. If this does not resolve the grade dispute, you may file a written complaint with the Faculty Senate Student Welfare and Grievance Committee: [http://sa.utep.edu/studentlife/files/2010/11/complaint_form_3_09.pdf](http://sa.utep.edu/studentlife/files/2010/11/complaint_form_3_09.pdf)

**Attendance Policy:** Regular attendance and participation in the laboratory are expected. Progress will be monitored according to the dates given for mastering the electron microscopy techniques. It will be necessary to work in the lab between Fridays in order to practice the techniques.

**Academic Integrity Policy:** “Cheating is unethical and not acceptable. Plagiarism is defined as using information or original wording from a paper or website without giving credit to the source of that information; it is also not acceptable. Do not submit work with your name that you did not do yourself. If you are directly quoting the work of someone else, you should use quotation marks or italics. Do not submit work for this class that you have prepared for another class. If you are cheating or plagiarizing, you will be subject to disciplinary action, according to UTEP policy.”

**Civility Statement:** Remove earphones and turn off cell phones in the lab. Do not play music during the lab. You may take cell phone breaks outside of the lab, except during lectures. You may use your computers for lab-related activities.

**Disability Statement:** I will make reasonable accommodations for students with limitations due to disabilities. Please see me personally after class in the first two weeks or make an appointment with me to discuss any special needs you might have. If you have a documented disability and require specific accommodations, you will need to contact the Center for Accommodations and Support Services (CASS) within the first 2 weeks. The Center for Accommodations and Support Services can be reached at [http://sa.utep.edu/cass/](http://sa.utep.edu/cass/) (915) 747-5148 or [cass@utep.edu](mailto:cass@utep.edu) and it is located at the Union Building East Room 106.

**HAVE A VERY SUCCESSFUL SEMESTER!**