Biology 221L  
Laboratory Schedule and Syllabus  
Spring 2017

**Professor:** Dr. Nicole Danos

**Office location:** Shiley Science & Technology Center 367

**Office hours:** Tue 9:30-11:00pm in SCST 367, Wed 10am-12pm and Th 12-1:30pm in SCST 227 or by appointment

**Email**
- Please use the Blackboard discussion forum for all class-related questions. I encourage everyone to submit questions and to answer questions by others. See separate instructions for how to sign up to the discussion forum.
- All other email messages to ndanos@sandiego.edu will be answered within 2 days.

**Required Text and Materials:**
- *Biology 221 Lab Manual* (available for $15 from USD BioClub)
- # 2 pencil

**Recommended Materials** (available at Bookstore):
- *Van De Graaff's Photographic Atlas for the Biology Laboratory, 7th Edition*
- Dissecting Kit

**Graded Materials**
- Four Laboratory practicals (40 pts. each) 160
- Two Reports (Labs 1 & 2, 40 pts. each) 80
- Lab notebook (drawing, labeling*, question sets**) 50
- Literature Project & Presentations (schedule TBA) 20
- Online participation 20
- Final Practical 70

**Total possible points** 400

*Reviewed at the end of each lab period and graded a few times throughout the semester.
**Posted on Blackboard, complete as an assignment (Labs 3-12). You may see some of these questions in lab practicals so it is a good idea to complete them.
**Strategies for success in this class**

**Why?**

- Read the corresponding chapter in Campbell before lab.  
  Repetition helps in the retention of information.

- Read your lab manual **before** the lab.  
  Time in lab is reserved for active learning\(^1\).

- Post on blackboard interesting things about organisms.  
  Putting information in context especially with things that interest you will help you remember it\(^2\).

- Participate in answering questions.  
  The reiteration and critical thinking of material will help you understand it better. Teachers know best!\(^3\)

- Come to office hours.  
  The number of visits you make to office hours correlates with your overall grade\(^4\).

- Put your laptop and cellphone away.  
  Electronic devices are distracting for you and your classmates.\(^5,6\)

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**Also good advice:**

- Take extensive notes during the prelab lectures, discussions, and instructions
- Look at more than one specimen or slide to get a more comprehensive understanding of the features under study—some slides are definitely better than others
- Make careful observations and drawings; label your drawings!
- Review your drawings and lab manual throughout the week, and well before the lab practical
- Supplement your study with atlas images as well as online images
Schedule

Week of:

Sept 11-15  Lab 1:  Introduction, Microscope, Systematics Exercise

Sept 8-22  Lab 2:  Field Lab in Tecolote Canyon *(Lab 1 report due, prelab 2)*

Sept 25-29  Lab 3:  Prokaryotes and Protists *(Lab 2 report due)*

Oct 2-6  Lab 4:  Algae and Plant Diversity I, Practical 1

Oct 9-13  Lab 5:  Seed Plants (Plant Diversity II)

Oct 16-20  Lab 6:  Plant Tissues

Oct 23-27  Lab 7:  Pseudopods and Fungi, Practical 2

Oct 30-Nov 3  Lab 8:  Porifera, Cnidaria, Platyhelminthes, Nematoda, Rotifera, Annelida

Nov 6-10  Lab 9:  Arthropoda, Practical 3

Nov 13-17  Lab 10:  Mollusca and Echinodermata

Nov 20-24  **No lab this week--Thanksgiving Holiday (Nov. 23-25)**

Nov 27-Dec 1  Lab 11:  Chordata, Practical 4

Dec 4-Dec 8  Lab 12:  Vertebrate Tissues, Rat Dissection

Dec 11-15  Lab 13:  **Final Practical** (last meeting of semester)
Note: Attendance and punctuality are mandatory. There are no opportunities to make up missed laboratories or practicals.

Tutoring and review of lab materials will be available; tutoring times are posted, and they are usually M, T, W, 7-10 pm in SCST 225.

Learning Outcomes
At the end of the 221 lab, you should be able to:
1. Employ careful observations, descriptions, and drawings to convey information about organisms.
2. Apply knowledge of fundamental concepts of systematics, including constructing and interpreting phylogenetic trees.
3. Recognize the hierarchies of life in terms of structure and diversity, and articulate the significance of emergent properties.
4. Identify the major events in the history of life.
5. Demonstrate skill with the compound microscope, and with the basic techniques of dissection.
6. Explain how structural and functional adaptations converge and diverge among groups of plants and animals.
7. Compare the basic developmental pathways and life histories of the major groups of plants, fungi, and animals.