Laboratory periods are Monday and Tuesday from 1:30 – 4:30 P.M. in Barnum 001 and there is a discussion/preparation period every Thursday from 4:30 P.M. – 5:25 P.M. in Barnum 114.

September 10: INTRODUCTORY MEETING in Barnum 114 at 4:30. Introduction to the course, its requirements, grading system, and preparation for Unit 1.

Unit I ORGANISMS: General physiology; how the body works (Dr. Tytell)

September 14 and 15 Visual-motor learning

September 17 both sections Special Recitation: Writing a lab report, keeping notebooks, giving presentations, reading the literature. Dr. Tytell

September 21 and 22 Electrocardiograms – Variations in heartbeat pattern

September 28 and 29 Diving response [Planned experimental protocol handed in by 8 pm prior to lab day]

A draft mini report (#1) on one of the first three labs is due at 10:00 am on October 5. The final mini report is due at 10:00 am on October 19.

October 5 and 6 Muscle dissection

October 12 and 13 Electromyograms – I. Muscle activity and movement

October 19 and 20 Electromyograms – II. Planned experiments [Planned experimental protocol handed in by 8 pm prior to lab day]

A draft mini report (#2) on Electromyograms is due at 10:00 am on October 26. The final mini report is due at 10:00 am on Nov. 9.

Unit II TISSUES: Neurophysiology; Sensory, motor and central neuron activity in an insect. (Dr. Trimmer)

Oct. 26 and Oct 27 Manduca behavior: recording and measuring kinematics

November 2 and 3 Inside an herbivorous insect - dissection and epithelial transport

November 9 and 10 No lab this week (because of Veterans Day holiday) but the recitation will be held on November 12th at the usual time.
A draft mini report (#3) on the kinematic experiments is due at 10:00 am on November 9. The final mini report is due at 10:00 am on November 23.

November 16 and 17 Reflexes and Central Pattern Generators (EMGs and CPGs)

November 23 and 24 Neurophysiology – recording nerve activity

Note that there is no recitation on November 26th because of Thanksgiving Day Tufts Holiday

Neuroscience Projects: For the final two weeks you will be able to formulate your own experiments to look at the neural basis of Manduca behavior using the techniques you learned in previous labs. We will help you formulate a feasible project but you will have to figure out your hypothesis, experiments and controls (and how to make it all work!).

November 30 and Dec. 1 Project part 1. Getting things working. Neural codes underlying behavior

December 7 and 8 Project part 2. Experiment, data collection and analysis

A draft mini report (#4) on the second electrophysiology lab is due at 10:00 am on December 7. The final mini report is due at 10:00 am on December 17.

December 10 Final Recitation and Discussion

Course requirements and Grading

- 4 Mini research reports………………. 20% each
- Notebooks and participation………………. 15%
- Planned protocols and quizzes……………… 5%

As part of this course, we will use TurnItIn in the Trunk learning management system to help determine the originality of your work. TurnItIn is an automated system which instructors can use to quickly and easily compare each student's assignment with billions of websites, as well as an enormous database of student papers that grows with each submission. When papers are submitted to TurnItIn, the service will retain a copy of the submitted work in the TurnItIn database for the sole purpose of detecting plagiarism in future submitted works. Students retain copyright on their original course work. For more information, see Turnitin.com or review Tufts’ Academic Integrity handbook at

http://uss.tufts.edu/studentaffairs/publicationsandwebsites/AcademicIntegrity.pdf

This syllabus and other information relevant to the Bio. 49 course is available on the Tufts Trunk site at:

https://trunk.tufts.edu/

Please check this site regularly for manuals, course information and other resources

We will add useful information and links to these web pages at appropriate times in the course.