

## Schedule and Syllabus

Course Coordinator:	Dr. B. Trimmer	(Dana 304, ext. 7-3924)
Participating faculty:	Dr. B. Trimmer	(Dana 304, ext. 7-3924)
	Dr. D. Cochrane	(Barnum 117B, ext. 7-3197)
Teaching Assistants:	Robertus deBruijn,	(Barnum 216A, 7-5345)
	Shoshoni Caine	(Dana 020, 7-2757)

Laboratory periods are Monday and Tuesday from 1:30 – 4:30 P.M. in Barnum 001 and there is a discussion/preparation period each 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. Trimmer)**

September 14 and 15	The Diving Reflex [Planned experimental protocol handed in by 9 am on lab day]
September 21 and 22	Visual Perception [Planned experimental protocol handed in by 9 am on lab day]
September 28 and 29	Inside an herbivorous insect - dissection and epithelial transport

A draft partial report (methods and results) on Unit I is due at 10:00 am on October 14. The final report is due at 10:00 am on October 27 and 28.

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

October 5 and 6	Neural activity in the control of the prolegs
October 12 and 13	Columbus Day, no lab this week but the recitation WILL meet
October 15 both sections	Recitation: <i>Writing a lab report, keeping notebooks, giving presentations, reading the literature</i>
October 19 and 20	Neurophysiology (A): Recording activity of a central pattern generator
October 26 and 27	Neurophysiology (B). Control of a central pattern generator, <b>or</b>

A draft partial report (results and discussion) on Unit II (parts A and B) is due at 10:00 am on November 10, the final report is due at 10:00 am on November 25.

## Unit III CELLS

### **Cellular physiology: Signal transduction in mast cell secretion (Dr. Cochrane)**

November 2 and 3	Measurement of histamine, an exocytotic secretory product of the mast cell, by fluorometric assay
November 9 and 10	No class (Veterans Day)
November 16 and 17	Stimulation of isolated mast cells by calcium ionophore and by mastoparan—the dose response curve. Assay
November 23 and 24	Effect of inhibitors of “upstream” signaling intermediates ( e.g. PLC,, PKC PI3K) on ionophore and mastoparan stimulation of histamine secretion. Assay of experiment.

*Note that there is no recitation on November 26<sup>th</sup> because of Thanksgiving Day Tufts Holiday*

Nov. 30 and December 1	Effect of inhibition of “downstream” signaling intermediates (e.g. MEK, ERK, JNK) on ionophore and mastoparan stimulation of histamine secretion. Assay of experiment.
December 7 and 8	Effect of inhibition of “downstream” signaling intermediates (e.g. MEK, ERK, JNK) on ionophore and mastoparan stimulation of histamine secretion. Assay of experiment.

A final full report on Unit III is due at 10:00 am on December 18

### **Course requirements and Grading**

2 Partial research reports.....	50% (25% Unit I, 25% Unit II)
1 Final research report.....	30%
Notebooks and participation.....	15%
Planned protocols and quizzes.....	5%

This syllabus and other information relevant to the Bio. 49 course is available on the Tufts Course Info (Blackboard) site at:

**<http://blackboard.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.

Required Text: A Short Guide to Writing About Biology, J.A. Pechenik; Harper Collins, NY, 2001, 4th edition.