

**PSYC06: Psychophysiology Laboratory**

Winter Semester 2013

**Course Information***Lecture & Lab:*

Mondays, 12 noon - 3 pm

Lectures will also be WebOptioned online (<http://lecturecast.utoronto.ca/?id=f5d762d157>)*Location:* Science Wing (SW) 316*Textbook:* Stern, R. M., Ray, W. J., & Quigley, K. S. (2001). *Psychophysiological Recording* (2nd Ed.). New York, NY, US: Oxford University Press. (*Library Call Number: QP360 .S79 2001*)*Professor:* Dr. Elizabeth Page-Gould ("Liz")*Email:* [elizabeth.page-gould@utsc.utoronto.ca](mailto:elizabeth.page-gould@utsc.utoronto.ca)*Office Hours:* Mondays, 3:00 pm - 4:00 pm, in SW316, beginning Jan. 7*Teaching Assistants:*

Chad Danyluck	Amanda Sharples
<a href="mailto:chad.danyluck@utoronto.ca">chad.danyluck@utoronto.ca</a>	<a href="mailto:amanda.sharples@mail.utoronto.ca">amanda.sharples@mail.utoronto.ca</a>

**Course Description**

Psychophysiology is the study of embodiment: How mental states are reflected in the body, and how bodily states in turn affect the mind. This lab course focuses on how psychological processes are embodied in the peripheral nervous system. You will learn about how activity of the heart, lungs, skin, hormones, muscles, and sexual system reflect psychological processes. Moreover, you will learn how to be a psychophysiological researcher with hands-on lab experience. From data collection to post-processing (or "scoring") to statistical analysis to reporting results, you will gain extensive experience with all stages of the psychophysiological research process. Each class will begin with approximately 45 – 90 minutes of lecture, followed by 1.5 - 2.25 hours of lab work. You will emerge from this class with advanced and highly-marketable skills that most psychologists do not gain until at least graduate school, but more typically after they have become post-docs or professors.

**Course Resources**

*Course Blackboard Website and Online Lectures.* The course Blackboard website will be your one-stop resource for all course documents, lecture videos, announcements, and assignment submissions. Lecture slides and Lab Exercises will be posted on Blackboard at least 24 hours prior to class under "Course Materials." To view the course lectures, select "Lecturecasts" from the course menu once you have logged into Blackboard. Please note that you will need your UTORid or UTSCid to login to the WebOption lecture website. All assignments will be submitted through the "Submissions" section of the Blackboard site. You are highly advised to regularly check the "Announcements" section of the Blackboard site, because **you are solely responsible for staying on top of course announcements.**

*Assigned Readings.* The reading assignments are listed on the last page of this syllabus next to the class by which you should have completed the reading. The 2nd Edition of the Stern, Ray, & Quigley text, *Psychophysiological Recording*, is an accessible and information-packed resource for the beginning psychophysiologicalist. You can purchase the textbook directly from the UTSC Bookstore – which has both new and used copies – for a relatively cheap price. One copy of the text book is on course reserve at the UTSC Library under call number QP360 .S79 2001. If you cannot purchase the textbook, then you will need to use the Library Course Reserves to complete the assigned reading. **If you use the older version, then you are solely responsible for any mistakes or poor marks that you incur.** For some classes, you will be assigned chapters from the Handbook of Psychophysiology or empirical research papers. These readings are available under the "Assigned Readings" section of the course Blackboard site. These readings are not optional and are considered as important as the textbook readings.

*Office Hours.* Office hours will be held in the hour after class (3 – 4 pm on Mondays) in the lab, SW316. This will give you a chance both to get extra help and to use the lab equipment.

*Extra Access to Lab Software.* Sometimes you will want access to lab software outside of class time and office

hours. The UTSC Information and Instructional Technology Services (IITS) have kindly installed some of our lab software in other UTSC computer clusters. AcqKnowledge is installed in the Bladen Wing (BV) 490, which is a 24-hour computer cluster. SPSS is installed in BV471. If you have any trouble with those computers, please contact the IITS Student Help Desk in person (BV487), by email ([student-helpdesk@utsc.utoronto.ca](mailto:student-helpdesk@utsc.utoronto.ca)), or by phone 416-287-7391.

**Accessibility.** Everyone with a love of learning is a welcome member of this class, and we strive to provide an equal playing field for students with diverse learning styles and needs. Please contact the AccessAbility office if you need any form of accommodation. The AccessAbility office is located in SW302 and can be emailed at: [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca)

### Marking/Course Requirements

Your final course mark will be calculated from a diverse array of lab exercises, “scoring” of physiological data, two exams, and a final project. Each component of your mark is described in detail in the subsections that follow. The table below outlines how these components will be used to calculate your final course mark and the associated due dates. The percentage of your course mark that each assignment is worth depends on whether you are an undergraduate student (see the “*Undergrads*” column) or a graduate student (“*Grads*”).

Assessment	% of Course Mark		Due Date
	<i>Undergrads</i>	<i>Grads</i>	
<i>5 Lab Exercises</i>			
Lab Exercise 1	2%	1%	March 4, 3:00 pm
Lab Exercise 2	2%	1%	March 11, 3:00 pm
Lab Exercise 3	2%	1%	March 18, 3:00 pm
Lab Exercise 4	2%	1%	March 25, 3:00 pm
Lab Exercise 5	2%	1%	April 1, 3:00 pm
<i>Vascular Impedance Data Scoring</i>	10%	10%	February 25, 11:59 pm
<i>Exams</i>			
Exam 1	15%	10%	TBA, between 02/11 – 03/01
Exam 2	15%	10%	April 1, 12:00 – 2:00 pm
<i>Final Project</i>			
Data Collection	10%	10%	February 15, 5:00 pm
Scoring	15%	15%	March 10, 11:59 pm
APA-style Paper	25%	40%	April 8, 11:59 pm

**Lab Exercises (5).** There will be five Lab Exercise assignments that correspond with five of the lab classes (#2, 7, 8, 9, & 10). These Lab Exercises will hone your skills for physiological data acquisition, scoring, statistics, and interpretation. You may complete these labs by yourself or working with another person. However, if you work with another person, your work must obviously be your own. Lab Exercises will be distributed, completed, and submitted entirely electronically. They will be posted on Blackboard under “Lab Materials” as a PDF that can be edited and saved using Adobe Reader or Apple Preview. You can submit your Lab Exercises through the “Submissions” section of Blackboard. Each Lab Exercise will be due at 3:00 pm two weeks after the date of the class in which they are distributed. Late labs will be docked by 10% for each 24-hour period they are late.

**Vascular Impedance Data Scoring.** One of the most advanced forms of psychophysiological data scoring is vascular impedance. Beginning in Lab #3, you will be shown how to “score” vascular impedance data to determine stroke volume, cardiac output, pre-ejection period, and left ventricular ejection time. You will then be required to score 3 datafiles collected in my lab during a classic Trier Social Stress Test. Your scoring will be evaluated for plausibility, reliability, and validity. Plausibility will be evaluated by comparing the values your scoring derives to plausible values for humans. Reliability will be evaluated by conducting a reliability analysis on the entire class. Validity will be evaluated by overlaying your scoring on Dr. Page-Gould’s scoring of the same data. When you have finished scoring all three physio files, you will upload the output text files through the “Submissions” section of Blackboard.

**Exams (2).** There will be 2 non-cumulative exams. The exams will be about 30% multiple choice, 15% matching, 25% short answer, and 30% essay. Exams will test material covered during the lectures, labs, and readings since the previous exam. Exam 1 will cover Labs 1 - 5 and Exam 2 will cover Labs 6 - 10. A topic-based review sheet and example test questions will be posted on the “Exams” section of Blackboard no less than 1-week prior to each exam.

**Final Project.** The bulk of your course mark will come from your final project. This consists of collecting cardiovascular data by carefully enacting an experimental protocol, scoring the data that you and other people collected, developing your own research question for the data, testing this question with statistical analysis, and reporting the results in an APA-style final paper. You are solely responsible for staying on top of the work required to complete your final project. The “Final Project” section of the Blackboard site provides details about the project and resources to help you complete it. In what follows, I provide more detail about each component of the final project.

**Final Project Data Collection.** In order to be enrolled in PSYC06, you must be able and willing to sign up for one 2-hour data collection session outside of normal class time between January 28th and February 15th. In Lab #1, you will be paired with a same-sex partner and will schedule this data collection session online. During Labs 2 and 3, you will be shown how to collect the psychophysiological measures that are necessary for your project. You will be expected to have fully reviewed those instructions (through the WebOption Lecturecasts) and to know the experimental protocol well enough to enact it (assigned reading for Lab #3). Your partner and you will alternate playing the roles of “Participant” and “Experimenter.” Upload the \*.acq datafile you collected from your partner to Blackboard by the due date. The data collected during this time (from 37 people) will be used anonymously by all students for the final project. The reliability with which other people can score the data you collected from your partner will comprise a portion of this mark (5%), along with evaluations made by the TAs during collection (5%).

**Final Project Scoring.** For your final project, you will be required to score physiological data from 10 students that were collected as a part of the Final Project Data Collection. Specifically, you will score ECG, vascular impedance, respiratory sinus arrhythmia, and finger pulse amplitude for a randomly-assigned subset of 10 files (out of the 35 people from the class). You will receive these files no later than 11:59 pm on February 17th. After scoring all your files, you will amalgamate the relevant values into a single spreadsheet, save it as a \*.csv, and submit it through Blackboard.

**Final Project APA-style Paper.** On March , you will conduct basic statistical analyses, using the skills you developed in Lab Exercise 4, and report your results through a complete APA style paper. Essentially, you will pose a research question that can be answered with the data you collected, conduct a literature review with at least 5 empirical sources that support your hypothesis, statistically analyze the data to test your hypothesis, and report your research project in strict APA Style 6 format. You will submit the paper through Blackboard in PDF format.

**Missed Assignments or Exams.** Late assignments will be docked 10% for every 24-hour period they are late past the due date/time. According to University policy, you may be accommodated for **one** missed assessment per class. You may take advantage of this bylaw by requesting **one** of the following accommodations: (1) you may write a make-up exam for one of the exams; (2) you may have a 3-day extension on the Final Paper portion of your Final Project; or, (3) for all other assignments, you may receive an extension of one week on one assignment. If you take any of these options, you must notify Chad or Amanda of your choice through email and copy (CC) Prof. Page-Gould. Once you have received accommodation using one of these options, then you are not eligible for any of the others.

## Academic Integrity

This classroom is built on mutual respect, so I assume that you take great pride in your integrity. Thus, I expect you to rigorously uphold the University of Toronto’s Code of Behaviour on Academic Matters (Section B). This is especially important in the context of the Final Papers, which must be written entirely on your own. If you paraphrase

or copy any part of your final project paper from another student's paper or from a research article, then I will either dock you a large portion of your final project paper mark or enact the procedures outlined in Section C of the Code of Behaviour on Academic Matters, depending on the severity of the offence.

### Lab Schedule and Assigned Readings

If the reading just says "Chapter XX," then the reading comes from the textbook, Stern, Ray, & Quigley (2001). The non-textbook readings can be found on Blackboard under "Assigned Readings." Graduate Students are also required to read the papers that are italicized, in blue, and assigned inside parentheses (e.g., "*(Porges, 1995)*"); undergraduates are not required to read those papers.

Lab	Lecture Topic	Lab Topic	Reading
1: Jan. 7	<i>Introduction to Psychophysiology</i>	Scheduling Project Data Collection Sessions	Chapters 1 <b>and</b> 2; ( <i>Berntson, Cacioppo, &amp; Quigley, 1991</i> )
NO LAB on Jan. 14		<i>No Lab and no Office Hours</i>	<b>Do not come to class</b>
2: Jan. 21	<i>Basic Methods of Psychophysiology</i>	Introduction to Collecting and Scoring Data	Chapters 4 <b>and</b> 5; ( <i>Mendes, 2008</i> )
3: Jan. 28	<i>Cardiovascular System Part I</i>	Collecting and Scoring Cardiovascular Data	Chapter 12; Final Project Experimental Protocol; ( <i>Blascovich, Mendes, Tomaka, Salomon, &amp; Seery, 2003</i> )
4: Feb. 4	<i>Cardiovascular System Part II</i>	Collecting and Scoring Cardiovascular Data	Blascovich, Seery, Mugridge, Norris, & Weisbuch (2004)
5: Feb. 11 Lab Exercise 1	<i>Principles of Psychophysiological Theory &amp; Inference</i>	Psychophysiological Inference and Reporting	Cacioppo & Tassinari (1990); ( <i>Cacioppo, Tassinari, &amp; Berntson, 1993</i> )
NO LAB on Feb. 18	<i>Family Day</i>	<i>No Lab and No Office Hours</i>	<b>Do not come to class! Frolic with your family (and/or friends)! 😊</b>
6: Feb. 25 Lab Exercise 2	<i>Respiration</i>	Scoring Respiratory Data	Chapter 10; Porges (2007); ( <i>Porges, 1995</i> )
7: Mar. 4 Lab Exercise 3	<i>Electrodermal Responses</i>	Collecting and Scoring Electrodermal Data	Chapter 13; Becahra, Damasio, Tranel, & Damasio (1997)
8: Mar. 11 Lab Exercise 4	<i>Hormonal System</i>	Cleaning, Analyzing and Reporting Hormonal Data	Kaltsas & Chrousos (2007); ( <i>Dienstbier, 1989</i> ); ( <i>Epel, McEwen, &amp; Ickovics, 1998</i> )
9: Mar. 18 Lab Exercise 5	<i>Electromyography</i>	Interpreting and Reporting Muscle Activity	Chapter 8 For Lab: Downey, Mougios, Ayduk, London, & Shoda (2004)
10: Mar. 25	<i>The Sexual Response</i>	Final Project Work	Jannsen, Prause, & Geer (2007); ( <i>Chivers, Rieger, Latty, &amp; Bailey, 2004</i> )
11: Apr. 1	<i>Final Exam</i>	Final Project Work	