

**Brain Imaging Laboratory (PSYC04H3 S LEC01)**

**COURSE SYLLABUS – Winter 2015**

**INSTRUCTORS:**

**Dr. Andy Lee**

**Office Hours and Location:** Weeks 1-3, Fridays @ 1:30-3:30pm, Science Wing, Room 413A

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**Dr. Matthias Niemeier**

**Office Hours and Location:** Weeks 4-6 and 10-12, Fridays 3:30-4:30pm, Science Wing, Room 569

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**Teaching Assistant:** Ada Le

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**Dr. Anthony C. Ruocco**

**Office Hours and Location:** Weeks 7-9, Tuesdays @ 11:00am-1:00pm in Science Wing, Room 513

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**Teaching Assistant:** Achala Rodrigo, M.A. Email: [achala.rodrigo@mail.utoronto.ca](mailto:achala.rodrigo@mail.utoronto.ca)

**Class Time and Location:** Thursdays @ 1:00-3:00pm in Science Wing, Room 316

**Tutorials:** This course is composed of four separate modules (one for each brain imaging technique) and each module is comprised of three classes. Module-specific syllabi will be distributed at the beginning of each module and will describe the times and locations of required tutorials and readings and how to submit assignments for each module.

**Brain Imaging Laboratory** is a course designed to familiarize you with cutting-edge techniques used by psychologists to study the neural basis of cognition, perception and motor control. Specifically, you will obtain hands-on experience with data collection, signal processing and statistical analysis for functional magnetic resonance imaging (fMRI), functional near-infrared spectroscopy (fNIRS), electroencephalography (EEG), and transcranial magnetic stimulation (TMS). You will also learn the core principles of experimental designs for brain imaging research and learn how to interpret findings using each of these brain imaging techniques.

**Weekly Topics, Readings and Important Dates**

<b>WEEK</b>	<b>DATE</b>	<b>TOPIC</b>
<b>1</b>	January 8	fMRI (Dr. Lee)
<b>2</b>	January 14 (Wed)	fMRI (Dr. Lee) Data collection at the Centre for Addiction and Mental Health, 250 College Street. NO CLASS THURSDAY JANUARY 15.
<b>3</b>	January 22	fMRI (Dr. Lee) <b>Quiz #1</b>
<b>4</b>	January 29	EEG (Dr. Niemeier)
<b>5</b>	February 5	EEG (Dr. Niemeier) <b>Due: fMRI Assignment</b>
<b>6</b>	February 12	EEG (Dr. Niemeier) <b>Quiz #2</b>
	February 19	<i>READING WEEK (NO CLASS)</i>
<b>7</b>	February 26	fNIRS (Dr. Ruocco) <b>Due: EEG Assignment</b>
<b>8</b>	March 5	fNIRS Laboratory Sessions – NO CLASS (Dr. Ruocco)
<b>9</b>	March 12	fNIRS (Dr. Ruocco) <b>Quiz #3</b>
<b>10</b>	March 19	TMS (Dr. Niemeier)
<b>11</b>	March 26	TMS (Dr. Niemeier) <b>Due: fNIRS Assignment</b>
<b>12</b>	April 2	TMS (Dr. Niemeier) <b>Quiz #4</b> <b>Due Date of TMS Assignment TBD</b>
	April 6	Last day of classes and last day for submission of term assignments in S courses.
	April 9	Last day to drop UTSC S courses and have them remain on the transcript with a grade of LWD indicating withdrawal without academic penalty. After this date grades are recorded on transcripts whether course work is completed or not (with a '0' assigned for Incomplete work) and they are calculated into GPAs.

**Course Evaluation:**

- 20% Quizzes
- 20% Participation and Attendance
- 60% Assignments (four posters, one for each course module)

## **Poster Grading**

A marking rubric will be used to assess the posters. Each poster will be marked out of 15 points:

1. Formatting & Organization (max 3 points)

Are all expected components of the poster present? Is the poster laid out in a clear and logical manner? Has there been good and appropriate use of the different sections of the poster?

2. Accuracy (max 3 points)

Is the content of the poster accurate? Are there any errors in the description of the experimental details? Is the text free of spelling or typographical errors?

3. Clarity (max 4 points)

How clearly written is the text of the poster? Is the text concise? Is it evident that the aims and findings of the experimental study have been understood fully? Are figures/tables appropriate and clear?

4. Originality (max 5 points)

Are the conclusions justified on the basis of the presented data? Is there evidence of critical thinking and original ideas? Has an attempt been made to fit the present work to the wider literature? Has thought been given to possible future experiments?

**Questions about Grading:** Any questions about grading on quizzes or assignments should be made in writing to your Teaching Assistant within one week of receiving the graded material and should detail the point of contention.

**Missed Quizzes and Late Assignments:** Given the time constraints of this course, there will be NO make-up quizzes without legitimate documentation for a missed quiz. If you miss a quiz and do not provide legitimate documentation, you will receive a mark of zero for that quiz. If you have provided legitimate documentation for your missed quiz (for example, UTSC Student Medical Certificate completed in full by a physician), you must arrange with the Teaching Assistant for that specific course module to write an alternate version of the quiz during the next available office hours. Late assignments will have 10% deducted for each day beyond the deadline for that assignment unless you have provided legitimate documentation for your late assignment (for example, UTSC Student Medical Certificate).

Any medical documentation that you provide must indicate the dates that you needed to be excused from course work, which must include the date of the quiz that you missed, or for a late assignment, the due date for that assignment. You are advised to see your physician within one day of the missed examination or late assignment. You must contact the course instructor within one week of a missed examination or late assignment. The form for medical documentation can be found at the following link:

[http://www.utsc.utoronto.ca/~registrar/resources/pdf\\_general/UTSCmedicalcertificate.pdf](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf)

**Please Note: The UTSC Medical Certificate must be signed by a registered member in good standing with the College of Physicians and Surgeons of Ontario.**

### **Accessibility:**

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).

### **Video and Auditory Recording**

For reasons of privacy as well as protection of copyright, unauthorized video or audio recording in classrooms is prohibited. This is outlined in the Provost's guidelines on *Appropriate Use of Information and Communication Technology*. Note, however, that these guidelines include the provision that students may obtain consent to record lectures and, "in the case of private use by students with disabilities, the instructor's consent must not be unreasonably withheld."

### **Academic Integrity:**

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's *Code of Behaviour on Academic Matters* (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

### **In papers and assignments:**

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.

- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

### **On tests and exams:**

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

### **In academic work:**

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>).

### **Grade Scales**

NUMERICAL MARKS	LETTER GRADE	GRADE POINT VALUE
90 - 100%	A+	4.0
85 - 89%	A	4.0
80 - 84%	A-	3.7
77 - 79%	B+	3.3
73 - 76%	B	3.0
70 - 72%	B-	2.7
67 - 69%	C+	2.3
63 - 66%	C	2.0
60 - 62%	C-	1.7
57 - 59%	D+	1.3
53 - 56%	D	1.0
50 - 52%	D-	0.7
0 - 49%	F	0.0