PSYCO 403/505 - Matlab for Vision Research

Tuesdays 9:00 a.m. - 11:50 a.m.
BS P Room 116

Contact Information

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Overview:

The goal of this seminar is to provide graduate students with the technical skills necessary to program experiments using the Matlab Psychophysics Toolbox, as well as to do basic data analysis. This is a lab course in which students will learn by doing. Students will have to turn in weekly assignments and complete a semester project, which will include designing and programming an experiment and summarizing the results from data collected on their experiment. No prior programming experience is required.

Course Organization:

The weekly meetings will consist of interactive lectures mixing the presentation of new material with active programming by the students. The first section of the course will be an introduction to programming in general (using the Matlab language). The second section will concentrate on learning how to use the Psychophysics Toolbox for programming behavioral experiments in Matlab. Each student will have to design and program one experiment or complex data analysis program by the end of the semester.

Course Website:

An eClass site will accompany this class
I will post general course information, handouts and **sample code** there. It is imperative that you have access to this website.

Textbook:

There will be no "official" textbook in this course. I will distribute a "reference guide to Matlab" and handouts. The Matlab reference guide is very thorough (if you know the name of the command you want to use!!), if only too technical at times.

Ione Fine and Geoffrey Boynton just published a book: "Matlab for the Behavioral Sciences". You can find the electronic version of the book on Amazon, for the incredibly low price of $9.99! It does not cover content related to the Psychophysics Toolbox, but it is a great thing to have handy for the first part of the semester.
http://www.amazon.com/Matlab-Behavioral-Sciences-ebook/dp/B00CPT86NC

I do recommend the book: "Matlab for Behavioral Scientists", **second edition**, by David Rosenbaum, Jonathan Vaughan & Brad Wyble. It is pricey: $55 new on Amazon, but you may be able to find used for cheaper:
https://www.amazon.com/MATLAB-Behavioral-Scientists-Second-Rosenbaum/dp/0415535948/ref=dp_ob_title_bk

Grading:

Students will be responsible for turning in weekly assignments (a total of 10) via email by the following **Monday at noon**. You should submit the assignment **on eClass**.

There will be a grace period of 8 days for turning in late assignments, ending before class starts at 9:00 a.m. on Tuesday of the week following the Monday deadline.

- Each completed (and correct) assignment will be worth **4 points**.
- Incomplete or incorrect assignments will be worth anywhere between 1 and 3 points, depending on the level of understanding demonstrated in the assignment.
- Assignments turned in late, but within the grace period, will be worth **0 points**.
- Assignments turned in after the grace period (or not turned in at all) will be worth **– 4 points**. Yes, that's NEGATIVE 4 points.

There will be two in-class two hour-long, open-book examinations, each worth a maximum of 20 points.

The students will also be graded on one semester project, worth 20 points.

The final graded will be obtained by adding the total number of points obtained on assignments (maximum of 40 points), in class exams (maximum of 40 points) and the final project (maximum of 20 points), for a total maximum of 100 points.

Grading Distribution:

Excellent			Good			Satisfactory			Poor	Pass	Fail
≥ 95	90-95	85-90	80-85	75-80	70-75	66-70	62-66	58-62	54-58	50-54	<50
A+	A	A-	B+	B	B-	C+	C	C-	D+	D	F

Grades are unofficial until approved by the Department and/or Faculty offering the course.

Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the *Code of Student Behaviour*. A deferral of a midterm may be granted in rare instances, at which time the weight of the missed exam will be added onto the final exam.

For an excused absence where the cause is religious belief, a student must contact the instructor(s) within two weeks of the start of Fall or Winter classes to request accommodation for the term (including the final exam, where relevant). Instructors may request adequate documentation to substantiate the student request.

Student Responsibilities:
ACADEMIC INTEGRITY: "The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University."

All forms of dishonesty are unacceptable at the University. Any offence will be reported to the Associate Dean of Science who will determine the disciplinary action to be taken. Cheating, plagiarism and misrepresentation of facts are serious offences. Anyone who engages in these practices will receive at minimum a grade of zero for the exam or paper in question and no opportunity will be given to replace the grade or redistribute the weights. As well, in the Faculty of Science the sanction for **cheating** on any examination will include **a disciplinary failing grade** (NO EXCEPTIONS) and senior students should expect a period of suspension or expulsion from the University of Alberta.

Academic integrity: Academic integrity is, for the most part, DISCOURAGED!! I'm kidding, but when working on assignments, feel free to ask others for help, see how they completed their assignment and adapt their solutions to your own programs. I'm not saying that you should blindly copy others' work, but, if at first you don't succeed, don't get stuck. In the course website, there is a chat room and a discussion board for that very purpose. At the very least, if you are a beginning programmer, I highly recommend planning to do your homeworks with at least one other classmate. Programming with friends around is an excellent strategy to deal with frustration but also, to avoid "proofreading blindness": how you cannot see the errors in your own writing that are obvious to others.

One of the objectives of the course is to develop a community of Matlab users, sharing problems and solutions. And make sure you use all of the tools at your disposal (reference books, Matlab's website, Matlab's "help" and "lookfor" commands, each others' brains) to reach your goal.

STUDENTS ELIGIBLE FOR ACCESSIBILITY-RELATED ACCOMMODATIONS (students registered with Specialized Support & Disability Services - SSDS): Eligible students have both rights and responsibilities with regard to accessibility-related accommodations. Consequently, scheduling exam accommodations in accordance with SSDS deadlines and procedures is essential. Please note adherance to procedures and deadlines is required for U of A to provide accommodations. Contact SSDS (www.ssds.ualberta.ca) for further information.

STUDENT SUCCESS CENTRE: Students who require additional help in developing strategies for better time management, study skills or examination skills should contact the Student Success Centre (2-300 Students' Union Building).

Policy about course outlines can be found in §23.4(2) of the University Calendar.

RECORDING AND/OR DISTRIBUTION OF COURSE MATERIALS: Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Disclaimer: Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.

Note: Recording is permitted only with the prior written consent of the professor or if recording is part of an approved accommodation plan.