

VISUAL NEUROSCIENCE (3J03): COURSE OUTLINES

Fall term 1: Sept-Dec 2011

Tue, Wed and Fri 9:30 to 10:20 am in ITB/AB102

The primary goal of this course is to explore brain processes through the field of vision. We will explore biological, psychological and clinical dimensions using research findings from the leading past and current scientific literature. The course will focus on developing analytical, critical thinking and communication skills.

Course Instructor: Dr. G. Ullal

Contact: Department of Psychology, Neuroscience and Behaviour.

Tel. 21331; email: ullalg@mcmaster.ca Room # 108 Psych. Bldg.

Office Hours: By appointment with Dr. Ullal or with the TAs. Please email or contact in person to set up any appointments. There will be additional hours with TAs and with Dr. Ullal before and after midterm exams. Information will be posted.

Teaching Assistants:

1. Maria Giammarco, giammaam@mcmaster.ca,
2. Jenna Traynor, jtraynor24@hotmail.com

Organization of Lecture Sessions:

Lectures are scheduled on Wednesdays and Fridays. The lectures will be followed by seminars on the same theme on the following Tuesday. There is no seminar on the Tuesday, 13th September. There is a lecture instead. Thereafter, on every Tuesday there will be a seminar. Please refer to the course calendar below.

Textbook: There is no textbook for the course. All the lectures will be based on specific research papers that will be posted on the *Avenue* periodically.

Evaluation: Based on group seminars (15%), two mid-term examinations (20% each), one final examination (35%) and one individual assignment (10%).

1. Group Seminars: Each group will have 6-8 students. The seminar will be worth **15%** of the total mark. Fifteen-minute PowerPoint presentation will be followed by a 5-7 minute discussion. There will be a group mark for the seminar. You will be provided with the rubric for marking the seminars, seminar topics etc. during the first week of the course. 5% of the seminar material based on the seminar sheets provided by the participants will be tested on the final examination. The seminar sheets will be posted on the *Avenue* prior to every seminar. There will be a bonus mark for attending the seminar. Exact details of the bonus mark will be worked out shortly. You may pick your own team members. If you are not able to pick your own team members, you will have to work with the members picked by us. Instructor with the TAs will be evaluating all the seminars. In addition to this, there will be a team evaluation that will be used in the event of a grossly disproportionate participation by any of the team members.

2. Examinations: You will have two mid-term exams and one final exam worth **20%, 20% and 35%** of the total respectively. Final is cumulative. The mid-term as well as the final exams will have short answer questions only.

Midterm: Forty minutes duration; 90% of lecture material and 10% of the assigned reading from a research paper for each lecture. The second

midterm examination will cover 90% of the lecture material and 10% of the corresponding assigned readings after the 1st midterm examination.

Final examination: 90 minutes duration; Cumulative, 90% of the entire lecture material and the corresponding assigned readings from research papers+ 5% based on seminar sheets provided on the *Avenue* by students.

3. Assignment: One paper worth **10%** of the total to be submitted before the **23rd of November**. Students may choose any of the themes covered in the course **except their seminar topic** and critically evaluate any three scientific papers in the area. Details of the assignment will be provided later. They may be submitted in class. A penalty of 10% /day will be applied for delayed submission. After the 3rd day, the assignment will get a zero. In the event of an illness or any legitimate reasons, an official permission should be routed through the Administration/ MSAF excusing the delayed submission.

MISSED EXAMINATIONS: There will **NOT** be a re-examination for missing any of the midterm examinations. If a student misses any examination owing to an illness or any other legitimate reason, the final examination will be rated proportionately higher provided an official permission is routed through the University Administration or by filling in the McMaster Student Absent Form (MSAF) as the case may be.

PLEASE NOTE: Students that miss both the midterm examinations for whatever reasons will have to make up for the 2nd examination in the form of an assessment that may be in the form of an examination that may be of a different format or a oral/viva voce with the instructor. The instructor will determine the format of the examination, date, location and time for such an assessment. Further, such students should get in touch with the

instructor within 48-hours after the missed 2nd examination either in the form of email or meeting personally. In absence of such an arrangement, the mark on the second missed examination will be a “ZERO”.

No examination will be re-scheduled unless there is cancellation of the class by the University.

Students considering filling the MSAF forms please note:

If you are absent from the university for a minor medical reason, lasting fewer than 5 days, you may report your absence, once per term, without documentation, using the McMaster Student Absence Form. Absences for a longer duration or for other reasons must be reported to your Faculty/Program office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to psych@mcmaster.ca indicating the course code. You must then contact the instructor/TA immediately (within 2 working days) by email or in person. Please note that the MSAF may not be used for term work worth 30% or more, nor can it be used for the final examination.

CONFLICT OF EXAMINATIONS: Since the midterm examinations are conducted during the regular class-hour, if any other examination conflicts with this examination, please contact the authorities conducting the other examination. The registrar of examinations conducts final examinations.

IMPORTANT ANNOUNCEMENTS: Important announcements regarding the course will be periodically posted in the **Announcement Box** of the course. Please remain updated.

MCMASTER UNIVERSITY GRADING SCALE:

Grade	Equivalent Grade Point	Equivalent Percentages
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69
C	5	63-66
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	0-49

Continued

COURSE-CALENDER

Please Note:

1. Lecture topics are subject to modifications.
2. The assigned readings from the journals for each of the themes will be posted prior to each week.
3. All the lectures are on Wednesdays and Thursdays. The seminars are on the following Mondays. (Excepting Lecture 2 on 12th September).
4. Both the mid-term examinations are in class. The final exam is conducted by the University.

<u>Date</u>	<u>Theme/Activity</u>
September 9	(Day 1) Lecture 1: Introduction to the course
13	(Day 2) No seminar. Lecture 2: “Science of vision-The milestones”
14	(Day 3) Lecture 3: Transparency of the ocular tissue
16	(Day 4) Lecture 4 Transparency of the ocular tissue (contd)
20	(Day 5) SEMINARS-1a and 1b
21 and 23	(Day 6 & 7) Lecture 5 and 6: Phototransduction
27	(Day 8) SEMINARS-2a and 2b
28 and 30	(Day 9 & 10) Lecture 7 and 8: Microarchitecture and neurotransmitters of retina.
October 4	(Day 11) SEMINARS-3a and 3b.
5	(Day 12) FIRST MID-TERM EXAMINATION (In class; material from Lecture 2 to Lecture 8; Material from seminars will not be tested on the 1st test)
7	(Day 13) Lecture 9: Visual pathways and axon

	path finding.
11	(Day 14) SEMINARS-4a and 4b
12 and 14	(Day 15 & 16) Lecture 10 and 11: Visual pathways and axon path finding cont'd.
18	(Day 17) SEMINARS-5a and 5b
19 and 21	(Day 18 & 19) Lecture 12 and 13: Cortical and sub-cortical vision
25	(Day 20) SEMINARS-6a and 6b
26 and 28	(Day 21 & 22) Lecture 14 and 15: Organization of visual cortex
November 1	(Day 23) SEMINARS-7a and 7b
2 and 4	(Day 24) Lecture 16 “Sculpting the columns”.
	(Day 25) Lecture 17 Form, and motion perception
8	(Day 26) SEMINARS-8a and 8b
9 and 11	(Day 27 & 28) Lecture 18 and 19: Form and motion perception cont'd.
15	(Day 29) SEMINARS- 9a and 9b
16	(Day 30) SECOND MID-TERM EXAMINATION (In class; material from Lecture 9 to Lecture 19; Material from seminars will not be tested on the 2nd test)
18	(Day 31) Lecture 20: Face perception
22	(Day 32) SEMINARS-10a and 10b
23* and 25	(Day 33 & 34) Lecture 21 and 22

“Back to the Future 1 and 2”

23rd :Due date for submitting assignment*

29 (Day 35) SEMINARS/Neuroanatomy practicum
(Neuroanatomy is not tested)

30 (Day 36) Lecture 23 “Back to the Future 3”

December 2 (Day 37) Lecture 24: Cross modal integration.

NOTE: The **final examination** will be scheduled by office of the registrar. It is cumulative, 90% of the entire lecture material and the corresponding assigned readings from research papers+ 5% based on seminar sheets provided on the *Avenue* by students will be tested.

DISCLAIMER

The instructor and University reserve the right to modify elements of the course during the term. The University may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

NOTE ABOUT ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on

an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
2. Improper collaboration in group-work.
3. Copying or using unauthorized aids in tests and examinations.

Message from the Chair of Psychology

The Instructor cannot be responsible for returning telephone calls from students. Any student wishing to reach an Instructor is invited to e-mail the instructor. Emails should be sent through the McMaster ID indicating the subject of the email.