VISUAL NEUROSCIENCE (3J03): COURSE OUTLINE

The course intends to explore and sample a few aspects of what we know about the eye and through the window of an eye the brain mechanisms of neural plasticity and consciousness. Keeping in view, that the students taking the course have a basic understanding of visual processes from their 2nd year, the mode of delivery of this course will be based on high impact journal articles published during the past 2 years.

PLEASE NOTE: As there is no "Textbook" recommended for the course, students are expected to read the journal articles that have been listed, refer to the lecture slides posted every week and attend the lectures regularly.

EXAMINATIONS

1. All the examinations will be based on multiple choice questions (MCQ)
2. There will be
   a) **10 "Mini Quizzes"** each worth **10 marks** at 5% each quiz, comprising of 10 MCQs, for total duration of 15 min, starting on Day 3. Topics taught on the previous "Day" will be tested. "MINI QUIZ 1" will have 5 questions from Assumed knowledge on vision. The **lowest** of the 10 quizzes will be **dropped** to give you the highest mark on 9 quizzes (TOTAL MARKS ON MINI QUIZES= 9 X 5% = 45%).
   b) **One FINAL EXAMINATION** comprising of 110 questions, for a total duration of 2 hours (55% of final grade)
   Material covered in the whole course will be tested. 5% of the questions will be from Assumed knowledge.
3. There is no "TEXTBOOK" for the course. Approximately 30% of the material is based on published journal articles listed in the table. The remaining material will be based on slides that will be posted periodically before every lecture.
4. Office hours: There are no specific "Office hours". My TAs or I may be approached during the week after an appointment through our emails given below:
   a) Instructor: ullalg@mcmaster.ca
   b) Teaching assistants:
      1. Li Wang: liwang@mcmaster.ca
      2. Lisa Betts: bettsir@mcmaster.ca
Assumed knowledge:
1. Structure of eye
2. Refractory media of eye and errors of refraction
3. Accommodation of vision
4. Rod and cone functions
5. Visual pathway

Grades:
Finally, all the points will be consolidated, and Grades assigned according to the following conventional scheme:
90-100 A+
85-89 A
80-84 A-
77-79 B+
73-76 B
70-72 B-
67-69 C+
63-66 C
60-62 C-
57-59 D+
53-56 D
50-52 D-
0-49 F
Based on individual’s overall performance and special circumstances, the Instructor reserves the right to scale the final marks up or down.

Message from the Chair of Psychology
The instructor cannot be responsible for returning long distance calls from students. Any student wishing to reach an instructor is invited to e-mail the instructor.
Policy Reminder
Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office. Any student who infringes one of these resolutions will be treated according to the published policy.

(Timetable follows from page 4)
**TIMETABLE**

**NOTE:** There is no "TEXTBOOK" for the course. Approximately 30% of the material is based on published journal articles listed on the right side of the table. The remaining material will be based on slides that will be posted periodically before every lecture.

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Theme</th>
<th>Journal article for home-reading</th>
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</table>
| 1   | 5th Jan 05 | Session 1: Overview of Vision  
| 2   | 12th Jan 05 | Session 1: a) Review of home-reading of Day-1  
b) Circuitary of retina  
| 3   | 19th Jan 05 | Session 1: a) Review of home-reading of Day-2  
b) MINI-QUIZ-1 (15 min )  
c) Retinal plasticity  
| 4   | 26th Jan 05 | Session 1: a) Review of home-reading of Day-3  
b) MINI-QUIZ-2 (15 min )  
c) Neurotransmitters of retina  
| 5   | 2nd Feb 05 | Session 1: a) Review of journal article of Day-4  
b) MINI-QUIZ-3 (15 min )  
c) Ganglion cells of retina  
| 6   | 9th Feb 05 | Session 1: a) Review of journal article of Day-5  
b) MINI-QUIZ-4 (15 min )  
c) Visual relays in thalamus and Feedback systems  
| 7   | 16th Feb 05 | Session 1: a) Review of journal article of Day-6  
b) MINI-QUIZ-5 (15 min )  
c) Depth perception  
<table>
<thead>
<tr>
<th>Date</th>
<th>Session 1</th>
<th>Session 2</th>
<th>References</th>
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<tbody>
<tr>
<td>26th Feb 05</td>
<td><strong>READING WEEK</strong></td>
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<td>c) Perception of motion</td>
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<td>Session 2: Colour perception</td>
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<td>c) fMRI evidence of Object recognition pathway</td>
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<td>Session 2: Face recognition</td>
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<td>c) The myth of the visual word form area</td>
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<td>Session 2: Visual competition</td>
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<td>Session 2: Image parsing mechanisms of the visual cortex</td>
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<td>c) Intersubject synchronization of cortical activity during natural vision (Hasson U et al. Science, 303, 2004)</td>
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<td>Session 2: Catastrophic visual binding failures (Billock VA, Tsou BH, TINS, 27, 84-89, 2004)</td>
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