Fundamental neurosciences

2F03

(Dr. Gautam R Ullal)
(email: ullalg@mcmaster.ca)

This course is primarily aimed at offering a glimpse at complex neural systems in normal and diseased states. We will address the neural structures and mechanisms underlying this.

The text book for the course will be *Physiology of Behavior by Neil R. Carlson, 8th Edition (Allyn & Bacon)*. The chapters pertaining to each lecture are indicated in the Course Outline below.

Please note:

1. A scheme of every forthcoming lecture will be provided on the course web page periodically, prior to the lecture, as the course advances.
2. The lectures and test does not strictly adhere to the contents of the text book. Therefore, students are advised to make notes during the lecture.
3. There will be tutorials every Friday afternoon, to review the concepts discussed during the week.
4. Copies of the relevant overhead transparencies that are used during the lecture will be posted in the HSc Library every week.

Assessment:

There will be 2 tests and 1 final examination in the form of Multiple Choice Questions (MCQ). The portions for the tests/examinations are indicated in the Course Outline. 1 Mid-Term and 1 Final Examination. Tests I and II carry 50 marks each and the Final examination is for 150 marks.

Grades:

Finally, all the points will be consolidated, and Grades assigned according to the following conventional scheme:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A+</td>
</tr>
<tr>
<td>85-89</td>
<td>A</td>
</tr>
<tr>
<td>80-84</td>
<td>A-</td>
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<tr>
<td>77-79</td>
<td>B+</td>
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<tr>
<td>73-76</td>
<td>B</td>
</tr>
<tr>
<td>70-72</td>
<td>B-</td>
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<tr>
<td>67-69</td>
<td>C+</td>
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<tr>
<td>63-66</td>
<td>C</td>
</tr>
<tr>
<td>60-62</td>
<td>C-</td>
</tr>
</tbody>
</table>
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.

Contacts
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  3. Wang Li. liwang@mcmaster.ca
COURSE OUTLINE: 2FO3

PHASE: I (FOUNDATION)

1. Introduction ........................................ (1 hr) ........................ 4/Sept/03
2. Investigating the nervous system Cpt 5 ................................ (2 hrs) 8 & 10/Sept/03
3. Organization of the nervous system Cpt 3 ................................ (2 hrs) 11 & 15/Sept/03
4. Neuron structure .................................. Cpt 2 ................................ (1 hr) 17/Sept/03
5. Electrical properties of a neuron Cpt 2 ................................ (1 hr) 18/Sept/03
6. Nerve conduction .................................. Cpt 2 ................................ (1 hr) 22/Sept/03
7. Synapse .............................................. Cpt 2 ................................ (2 hrs) 24 & 25/Sept/03

MULTIPLE CHOICE QUESTIONS (MCQ) - TEST: I (Topics 1-7) (1 hr) 29/Sept/03

PHASE: II (SENSORY MECHANISMS)

8. Organization: Receptors-tracts-thalamus-cortex Cpt 7 (1 hr) ........................ 1/Oct/03
9. General (cutaneous) sensations ................... Cpt 7 (1 hr) ........................ 2/Oct/03
10. Vision-1: Eye-ball, image capturing ................. Cpt 6 (1 hr) ........................ 6/Oct/03
12. Vision-3: Pathway-conduction ...................... Cpt 6 (1 hr) ........................ 15/Oct/03
13. Vision-4: Cortical processing of images ............... Cpt 6 (1 hr) ........................ 16/Oct/03
14. Audition-1: Ear, sound capturing and impedance matching (1 hr) Cpt 7 .............. 20/Oct/03
16. Audition-3: Cortical processing of sounds .......... Cpt 7 (1 hr) ........................ 27/Oct/03

PHASE: III (MOTOR MECHANISMS)

17. Organization of motor system ...................... Cpt 8 (1 hr) ........................ 29/Oct/03
18. Tone, posture & equilibrium ....................... Cpt 7-8 (1 hr) ...................... 30/Oct/03
19. Pyramidal system .................................. Cpt 8 (1 hr) ........................ 3/Nov/03
20. Basal ganglia-1: Structure & connections ........ Cpt 8 (1 hr) ........................ 5/Nov/03
21. Basal ganglia-2: Functions & disorders ............ Cpt 8 (1 hr) ........................ 6/Nov/03

MCQ-TEST: II: 5.30-6.30 pm; 10/Nov/03; Room No.CNH 104

22. Learning & memory: Basic mechanism .......... Cpt 13 (1 hr) ...................... 12/Nov/03
23. Cerebellum-1: Structure & connections .......... Cpt 8 (1 hr) ........................ 17/Nov/03
24. Cerebellum-2: Functions & disorders .............. Cpt 8 (1 hr) ........................ 19/Nov/03
25. Practiced movements & apraxia .................... Cpt 8 (1 hr) ........................ 20/Nov/03

PHASE: IV (BEHAVIOUR)

26. Organization of limbic system & hypothalamus Cpt 3 (1 hr) ........................ 24/Nov/03
27. Emotions ......................................... Cpt 11 (1 hr) ........................ 26/Nov/03
28. Arousal & sleep .................................. Cpt 9 (1 hr) ........................ 27/Nov/03
29. Overview of all lectures ......................... 1/Dec/03

FINAL EXAMINATION: MCQ; all topics (1-28); 3hrs; 16/Dec/03

PLEASE NOTE: On every Friday (except 1st & 14th November 2003) between 3-4 PM, the students can meet with the Instructor and the TAs to discuss the topics covered during the week, in room number 316 (Psychology building).