**Psychology 2E03E**  
**Sensory Processes**  
Tuesdays and Thursdays: 19:00 – 22:00  
**Instructor:** Dr Gautam Ullal  
(Room 129; Extn.: 23304; email: ullalg@mcmaster.ca)

In this course we will try to understand the various probable processes of sensation and perception adopted by the nervous system to explore the world around us. This may help us in having a glimpse at some of the mechanisms of the brain.

The book recommended for this basic course is *Sensation and Perception* by E. Bruce Goldstein-6th Edition.

**Assessment:**  
Class performance and grasp of the material will be assessed using a variety of measures that will provide ample scope for interactions and an active learning process:

1. One Seminar: 15 points  
2. Two Home Assignments (5 points each) 10  
3. Five 1 page essays in class (10 points each) 50  
4. One Oral Test 10  
5. One Poster Presentation 15  

_________  
**TOTAL** 100 points
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>
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<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>
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<tr>
<td>70-72</td>
<td>B-</td>
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<tr>
<td>67-69</td>
<td>C+</td>
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<td>63-66</td>
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<td>60-62</td>
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<td>57-59</td>
<td>D+</td>
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<td>53-56</td>
<td>D</td>
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<tr>
<td>50-52</td>
<td>D-</td>
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<tr>
<td>0-49</td>
<td>F</td>
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</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.
COURSE PLAN

SESSION 1: GENERAL INTRODUCTION – I (7th May 2002)
1) Importance of sensation & Classification
2) Levels of sensory processing
3) The common schema of sensory pathways
4) Influence of arousal system on sensations
   Overview of the course & student assessment system

SESSION 2: GENERAL INTRODUCTION-II (9th May 2002)
1) Neuron – Receptor – Synapse
2) Membrane potentials
3) Signal transduction in different types of receptors
   Allotment of Seminar topics

SESSION 3: VISION-1 (Image and retina) (14th May 2002)
1) Introduction to vision
2) Capturing the image-accommodation
3) Structure of Retina

SESSION 4: VISION-2 (Retinal processing) (16th May 2002)
Tasks of the retina with emphasis on:
1) Transduction- including rhodopsin cycle
2) Gain adjustment (including Dark & Light adaptation; night blindness)
   Lecture followed by seminars (series 1)

SESSION 5: VISION-3 (Lateral geniculate body) (21st May 2002)
1) Retinotopic and functional organization into layers; M and P cells
2) Probable role of feed-back circuits
   Lecture followed by seminars (series 2)

SESSION 6: VISION-4 (Visual Cortex) (23rd May 2002)
1) “Modules-Columns-Hypercolumns” and Primary visual processing
2) Perception of Colours, Colour blindness; Depth and Movement and,
   Recognition of Faces and Objects Visual Agnosia and Prosopagnosia
   Test on Vision (Test 1)
SESSION 7: AUDITION-1 (28\textsuperscript{th} May 2002)
1) Introduction- The attributes of Sound as opposed to Light
2) Functional anatomy of External, Middle and Internal ear

Feedback on Test-1 performance
Seminar (series 3)

SESSION 8: AUDITION-2 (30\textsuperscript{th} May 2002)
1) Mechanism of Hearing
2) Frequency detection, auditory localization, determining sound quality
3) Speech perception

Seminars (series 4)

SESSION 9: CUTANEOUS SENSATIONS (4\textsuperscript{th} June 2002)
1) Types of cutaneous sensations, receptors associated, nerve tracts conveying them
2) Neural processing for touch; Active & Passive touch; Haptic explorations and perception

Seminar (series 5)

SESSION 10: CHEMICAL SENSATIONS (6\textsuperscript{th} June 2002)
1) Olfaction
2) Taste

Seminar (series 6)

SESSION 11: SUMMING UP & CLINICAL ASPECTS OF SENSATIONS (11\textsuperscript{th} June 2002)
Test on Audition, Cutaneous and Chemical sensations (Test 2)

Seminar (series 7)

SESSION 12: (13\textsuperscript{th} June 2002)
Feedback on Test-2 performance
Seminar (series 8)

Oral test Batch -1

SESSION: 13 (18\textsuperscript{th} June 2002)

Seminar (series 9)

Oral test Batch-2

SESSION: 14 POSTER DAY (20\textsuperscript{th} June 2002)