PSYC3210 – Perceptual Systems

Unit of Study Code: PSYC3210

Coordinator: Dr John Predebon
Office: Room 508 Griffith Taylor Building
Phone: 9351 3321
E-mail: johnp@psych.usyd.edu.au

Other Teaching Staff: Dr Colin Clifford
Office: Room 506 Griffith Taylor Building
Phone: 9351 6810
Email: colin@psych.usyd.edu.au

Ms Tatjana Seizova-Cajic
Office: Room 505 Griffith Taylor Building
Phone: 9036 9223
Email: tanjas@psych.usyd.edu.au

Format of Unit: 2 x 1 hour lectures/week x 13 weeks
1 x 1 hour tutorial/week x 12 weeks
Tutorial sizes: maximum of 20 students per group

Credit Point Value: 4 Credit Points

Qualifying: 8 credit points of Second Year Psychology including PSYC 2111 and PSYC 2112

Assessment: Class work:
Class Report (5%)
Week 8, Monday 15 September

Practical Class Participation (5%)
Week 10

Tutorial Quiz Test (20%)
Week 13, 27 October to 31 October

Examination:
70%: Multiple choice questions and short answers

Unit of study general description:
The unit covers at an advanced level selected topics in perception from the psychophysical, physiological and neuropsychological perspectives, and from both the applied and theoretical levels of analyses. Students are expected to gain an understanding of some of the major theoretical issues motivating current perceptual research, to appreciate the significance of basic perceptual research for understanding normal perceptual functioning, and to be able to evaluate the empirical and conceptual worth of research contributions.

University of Sydney - Administrative Guidelines & Syllabus Senior Psychology, 2003 page 19
Teaching outcomes:

- Awareness and understanding of the conceptual issues and problems associated with inferring the mechanisms underlying perceptual abilities on the basis of links between neurophysiological and psychophysical data.
- Ability to describe and critically evaluate the neuropsychological and behavioural studies relevant to our understanding of the relationship between visually guided actions and perception.
- Critical understanding of the major theoretical approaches to perception.
- Ability to describe and evaluate the relationship between perception and the physical stimulus.
- Knowledge of the structural and functional properties of perceptual modalities with emphasis on vision.
- Understanding of the processes by which combined input from various senses (vision, touch, proprioception, vestibular sense) contribute to normal perceptual experience and action.
- Understanding of the basic processing principles common to various perceptual modalities (relative plasticity of the neural substrate; optimization in processing of information; attunement of the perceptual apparatus to the ecological niche of a particular organism).

Evidence of learning:

Assessment of work completed in tutorials will take the form of a Class Report (Week 8) and Practical Class Participation (Week 10), and a Quiz Test (Week 13). At the end of semester, an examination (short answer and multiple choice) will assess knowledge of the entire course including tutorial work, lecture material, recommended reading and all the stated teaching outcomes.

Lecture Program:

The course will cover the following topics:

John Preciehon
- Perception and action: The functions of visual perception; behavioural and neuropsychological studies; the concept of dissociations; critique of current evidence and theory
- Binocular vision: Stereopsis
- Stereoscopic depth constancy, the inverse square-law; experimental evidence;
- Direct vs indirect theories of space perception; ecological versus information-processing approaches
- Constancies (eg., brightness, size); psychophysics and physiology
- Perceptual covariations; examples from motion and distance domains
- Attentional effects on visual processing; psychophysical and neurophysiological studies
- Visual attention and eye movements; object- versus spaced-based approach
- Time perception: theories and evidence

Colin Clifford
- Visual neurophysiology
- Motion processing
- Visual processing and awareness

Tatjana Seizova-Cujic
- Touch
- Proprioception
- Vestibular system
- Intersensory interactions
- Perceptual development and plasticity
- Perceptual disorders
Tutorial Program:

The program consists of a mixture of laboratory-based tutorials in which students participate in class demonstrations and experiments, discussion tutorials on the results of class experiments and on selected lecture topics, and self-directed (interactive) computer-based tutorials. NOTE: the sequencing of tutorial topics is subject to change.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>No tutorials</td>
</tr>
<tr>
<td>2</td>
<td>Introduction to program plus discussion of lecture concepts</td>
</tr>
<tr>
<td>3</td>
<td>Binocular vision 1</td>
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<tr>
<td>4</td>
<td>Binocular vision 2</td>
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<td>5</td>
<td>Visual search</td>
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<td>6</td>
<td>Tactile Perception</td>
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<td>7</td>
<td>Proprioception</td>
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<td>8</td>
<td>Demonstrations</td>
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<td>10</td>
<td>Perceptual disorders</td>
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<tr>
<td>11</td>
<td>Signal detection theory – introduction and demonstration</td>
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<tr>
<td>12</td>
<td>Signal detection theory – data analysis and discussion</td>
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<tr>
<td>13</td>
<td>Assessment</td>
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TEXT
There is no set text. Readings are based on journal articles and chapters from selected books.