PSYC3013 – Perceptual Systems

**Unit of Study Code:** PSYC3013

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**Tutors**
Professor David Alais (contact details above)

Mr James Brown  
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**Format of Unit:**
2x1 hour lectures/week x 13 weeks  
1 x 2 hour tutorial/week x 10 weeks

**Credit Point Value:** 6 Credit Points

**Prerequisite:** Intermediate Year Psychology units including PSYC (2011 or 2111) and at least one other Intermediate Psychology Unit from PSYC (2012 or 2112), PSYC (2013 or 2113), PSYC (2014 or 2114).
### PSYC3013 Assessment Information

<table>
<thead>
<tr>
<th>What?</th>
<th>When due?</th>
<th>When Returned?</th>
<th>% Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Report (max 2000 words)</td>
<td>Online before 4pm on Monday, September 21 (Week 9)</td>
<td>On-time submissions returned by 4pm Mon October 19* online (Week 12)</td>
<td>25%</td>
</tr>
<tr>
<td>Group presentation on perceptual disorders</td>
<td>Conducted in your tutorial in Week 11</td>
<td>Marks available the following week</td>
<td>10%</td>
</tr>
<tr>
<td>Quiz on tutorial material</td>
<td>Conducted in your tutorial in Week 13</td>
<td>Marks available the following week</td>
<td>12%</td>
</tr>
<tr>
<td>Tutorial attendance and participation</td>
<td>8/10 classes must be attended</td>
<td>Marks available in the stuvac week</td>
<td>3%</td>
</tr>
<tr>
<td>Exam</td>
<td>Semester 2 exam period ***</td>
<td>University Final Results Release Date</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
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</table>

- * Last possible date and time for submission of this assignment with or without extensions.
- ** "Compulsory" here means no more than 2 unexplained absences from tutorials. You will need a medical certificate etc to explain any further absences. It is YOUR RESPONSIBILITY to attend the tutorial you are enrolled in and be marked as present. Tutors cannot be expected to notify other tutors to confirm your attendance if you do not attend your enrolled prac.
- *** Multiple choice and short-answer questions based on lectures, set readings and material from tutorial classes

Completion of compulsory components is necessary to pass this unit. Students who fail to do so will receive an Absent Fail regardless of their final overall mark.

It is very important that you read the general administrative guidelines for submission of written work, penalties for late work, assessment criteria, procedures for applying for extensions and special consideration in the Undergraduate Student Guide. It is
your responsibility to be familiar with and adhere to the Student Guide. The Guide is available on the e-learning site as well as here:

Note that students who apply for and are granted either special arrangements or special consideration for examinations in units offered by the Faculty of Science will be expected to sit any replacement assessments in the two weeks immediately following the end of the formal examination period. Later dates for replacement assessments may be considered where the application is supported by appropriate documentation and provided that adequate resources are available to accommodate any later date.

More details on assessment tasks:

Class work (50%):

1) Group Report: “Blind spot experiment”, max 2000 words (25% of total mark)

In this report, your group of 3 will design an experiment related to the retinal blind-spot and write it up, including: background literature, a motive and hypothesis in the Introduction, a clear description of materials and methods, Results, Discussion.

Tutorial 6 (i.e., week 7: 7-10 September) is dedicated to discussing your plans and experimental design with your tutor who will provide helpful guidance and feedback.

Full report due 21st September (Monday of week 9)

2) Group presentation: Your group of 3 will give a presentation on a perceptual disorder chosen from a list of disorders that you will be given several weeks in advance (10% of total mark). Presentation done as a group during Tutorial 9 (week 11, 12-15 October).

3) Tutorial quiz: Tutorial 10 is a quiz assessing the tutorial material, to be done during tutorials of week 13, 26-29 October (12% of total mark).

4) Tutorial attendance & participation: 3% of total mark.

Tutorial attendance requirement: It is a requirement to pass the course that you attend a minimum of 80% of the tutorials (i.e., no more than 2 absentees from the 10 tutorial classes). It is your responsibility to attend the class you are enrolled in and to be marked as present. Note that if you miss your allocated class and attend another one to ‘catch up’, it is your responsibility to ensure your original tutor is aware that you attended another class.

Half of the attendance & participation mark is gained by satisfying the 80% attendance requirement (or by satisfactorily explaining absences if less than 80% are attended). The other half of the mark comes from active participation in the tutorial classes: e.g., initiating or contributing to discussion.
Examination (50%):
The exam contains multiple-choice questions and short-answer questions. The multiple-choice section and short-answer section are equally weighted (each section is worth 50% each of the exam mark). There are 50 multiple-choice questions (2 per lecture) and 5 short-answer questions requiring approximately a 1-2 page response.

Unit of study general description:
Perception poses many challenges: how do we see colour and movement? How do we perceive surfaces and materials? How does combining information from multiple senses improve our perception? This unit draws on behavioural and neurophysiological perspectives to deepen understanding of current research topics in perception.

The emphasis is on how visual information is processed to accomplish functions such as perceiving a single edge, extracting the contours that form a face, or the spatial relations needed to call offsides on the sports field. Students also gain conceptual tools for evaluating the empirical and theoretical worth of recent research in perception. Perception is one of the School of Psychology’s strongest research areas, and students will be taught by research-oriented academics with active laboratories.

During the tutorial component of the course students will develop a practical experiment in which they formulate and test a hypothesis. In this way students gain important research experience that gives them valuable insight into the scientific process as it exists both in professional work and in the empirical research project required for the Honours degree.

Evidence of learning:
Assessment of work completed in tutorials will take the form a quiz. Group class presentation and the report will assess understanding of the topics of selected readings and the ability to design and critically evaluate research. 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 (Mon. 3pm, Wed. 3pm; Carslaw LT 275)
Bart Anderson (Lectures 1-5):
• surfaces, materials, and perceptual organization
• surfaces, materials, and perceptual organization
• surfaces, materials, and perceptual organization
• surfaces, materials, and perceptual organization
• surfaces, materials, and perceptual organization
• surfaces, materials, and perceptual organization

Patrick Goodbourn (Lectures 6-8):
• Individual differences in perception
• Colour blindness and genetics of colour vision
• Perceptual traits as biomarkers of psychological disorders

Hamish MacDougall (Lectures 9-11)
• Vestibular system and gaze direction
• Point of regard: where are you looking?
• Spatial orientation and microgravity

David Alais (Lectures 12-14):
• Combining audition and vision: neural structures & functions
• Audiovisual interactions in attention and perception
• Fusing audiovisual information and dealing with discrepancy

Frans Verstraten (Lectures 15-17):
• Depth, Stereopsis and rivalry
• Perceptual disorders
• Applied vision

David Alais (Lectures 18-21):
• Early vs. late multisensory integration; time perception
• Temporal processes in multisensory perception
• ‘Virtual’ auditory space and auditory localisation
• Synesthesia: cross-wired senses

Erik van der Burg (Lectures 22-25):
• Multisensory attention 1
• Multisensory attention 2
• Genetic algorithms in vision 1
• Genetic algorithms in vision 1

Tutors:
Professor David Alais (david.alais@sydney.edu.au): Mon 4pm, Wed 10am, Thurs 10am
Mr James Brown (jbro5585@uni.sydney.edu.au): Wed 4pm

University of Sydney – Syllabus for Senior Psychology PSYC3013, 2015
## Timetable

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture dates</th>
<th>Tutorials</th>
<th>Lecturers</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>27, 29 July</td>
<td>No tute</td>
<td>Anderson</td>
</tr>
<tr>
<td>2</td>
<td>3, 5 Aug</td>
<td>Tutorial 1: Blind spot and filling in; project info</td>
<td>Anderson</td>
</tr>
<tr>
<td>3</td>
<td>10, 12 Aug</td>
<td>Tutorial 2: Touch, tactile acuity, receptive fields intro; form groups</td>
<td>Anderson; Goodbourn</td>
</tr>
<tr>
<td>4</td>
<td>17, 19 Aug</td>
<td>Tutorial 3: Receptive fields; work on project</td>
<td>Goodbourn</td>
</tr>
<tr>
<td>5</td>
<td>24, 26 Aug</td>
<td>Tutorial 4: Signal Detection Theory</td>
<td>MacDougall</td>
</tr>
<tr>
<td>6</td>
<td>31 Aug, 02 Sep</td>
<td>Tutorial 5: Work in class on blind spot project; Tutor feedback</td>
<td>MacDougall; Alais</td>
</tr>
<tr>
<td>7</td>
<td>7, 9 Sep</td>
<td>Tutorial 6: Motion perception</td>
<td>Alais</td>
</tr>
<tr>
<td>8</td>
<td>14, 16 Sep</td>
<td>No tute: work on your project.</td>
<td>Verstraten</td>
</tr>
<tr>
<td>9</td>
<td>21, 23 Sep</td>
<td>Tutorial 7: Applied Vision Science PROJECT DUE MONDAY 21st SEPT</td>
<td>Verstraten; Alais</td>
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</tbody>
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**AVCC COMMON VACATION WEEK: NO CLASSES/TUTORIALS (28 SEP – 02 OCT)**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture dates</th>
<th>Tutorials</th>
<th>Lecturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>05, 07 Oct (5th is public hol)</td>
<td>No tutorials (prepare presentations)</td>
<td>Alais</td>
</tr>
<tr>
<td>11</td>
<td>12, 14 Oct</td>
<td>Tutorial 8: Perceptual disorders PRESENTATIONS</td>
<td>Alais</td>
</tr>
<tr>
<td>12</td>
<td>19, 21 Oct</td>
<td>Tutorial 9: Audition</td>
<td>Van der Burg</td>
</tr>
<tr>
<td>13</td>
<td>26, 28 Oct</td>
<td>Tutorial 10: TUTORIAL QUIZ</td>
<td>Van der Burg</td>
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READINGS


2. Journal articles and chapters from selected books (to be announced in lectures, often on library electronic reserve).

Graduate Attributes and Learning Outcomes for Perceptual Systems (PSYC3013)

This course is structured around the graduate attributes associated with the scientist-practitioner model, the basis for the training of psychologists in Australia and internationally. Graduate Attributes are the generic skills, abilities and qualities that students should acquire during their university experience and the School of Psychology is committed to providing an environment to promote these skills. In addition, this unit of study will provide students with generalised and transferable skills that will also be useful in careers outside psychology.

The following graduate attributes and student learning outcomes will be developed through lectures, tutorial and assessment activities. They will be assessed in the laboratory report, group presentation, tutorial quiz, and final examination.

1: Knowledge and Understanding of Perceptual Systems

Display basic knowledge and understanding of the major concepts, basic facts, and developing understanding of biological perceptual systems. Human visual processing will be the most emphasised aspects, but other senses will also be included.

Student learning outcomes:

. (i) Knowledge of several of the perceptual problems the brain must solve (such as combining information from distinct senses)
. (ii) Appreciation of common processing principles for how the brain solves perceptual problems (such as adaptation)
. (iii) Conceptual understanding of the limits on human perception and how they relate to the underlying mechanisms (such as acuity)
. (iv) Understanding of specific perceptual phenomena and how they arise as a consequence of processing architecture, especially in vision and audition
. (v) Basic knowledge of methods and measures commonly used in perception research
. (vi) Ability to understand and evaluate empirical studies in perception

2: Research Methods in Perceptual Systems

Understand, apply and evaluate basic research methods in Perceptual Systems, including research design, data analysis & interpretation.

Student learning outcomes:
To develop an understanding of the major methods of perceptual research
Critically assess research findings and related theories in these areas
Design and conduct basic studies to address perceptual questions: frame research questions; undertake literature searches; critically analyse theoretical and empirical studies; formulate testable hypotheses; operationalise variables; choose an appropriate methodology; make valid and reliable measurements; analyse data and interpret results; and write research reports.

3: Critical Thinking Skills in Perceptual Systems
Respect and use critical and creative thinking, skeptical inquiry, and the scientific approach to solve problems related to perception.

Student learning outcomes:
(i) Demonstrate an attitude of critical thinking that includes persistence, open-mindedness, and intellectual engagement.
(ii) Evaluate evidence & information; differentiate empirical evidence from speculation.
(iii) Think about how perception might be achieved mechanistically
(iv) Evaluate issues using different theoretical and methodological approaches.
(v) Use reasoning and evidence to recognise, develop, defend, and criticise arguments.

4: Ethics in research
Respect and observe principles of ethics in research. Students research projects conducted in class involve informed, consenting subjects and all data are anonymous and cannot be linked directly to any individual. Data are stored securely in anonymised format for the statutory period.

5: Communication Skills in Perceptual Systems
Communicate effectively in a variety of formats and in a variety of contexts

Student learning outcomes:
(i) Write a standard research report using American Psychological Association (APA) structure and formatting conventions.
(ii) Write effectively.
(iii) Demonstrate effective oral communication skills.
(iv) Collaborate effectively, demonstrating an ability to: work with groups to complete projects within reasonable timeframes; manage conflicts appropriately and ethically.

6: Learning and the Application of Perceptual Systems
Understand and apply psychological principles to personal and social issues.

Student learning outcomes:
(i) Develop an awareness of the applications of the theories and findings in the area.
(ii) Apply psychological concepts, theories, and research findings to problems in everyday life and in society.
(iii) Understand major areas of applied Perceptual Psychology.
Academic Dishonesty and Plagiarism

1. It is your responsibility to know what academic dishonesty and plagiarism are. Here is the link to the University’s policy:


Make sure that you understand what counts as academic dishonesty and the various types of plagiarism. The Library’s http://www.library.usyd.edu.au/skills/ ‘Plagiarism and Academic Honesty’ program will help.

2. Note that:

   i) the School of Psychology will penalise all submitted work that is plagiarised.

   ii) Students should note that all assignments (including group projects) will be run through similarity detecting software. This software detects similarities between (a) your assignment and both print and online sources, and (b) assignments submitted by other students, from both current and previous years. If similarities are found, they will be investigated so as to determine the nature of the plagiarism. See Part 5 of the University’s policy.

Avoiding plagiarism – key points

• Plagiarism is a serious offence and may result in failure in the course. Even where students are completing an exercise together, each student must submit separate written work. Incorporation of any material from another student’s assignment is regarded as plagiarism.

• In writing essays or reports to meet coursework requirements, you should use your own words. In some contexts (e.g., theoretical research) it is appropriate to use an occasional quotation. This should be indicated in the conventional way by enclosing the passage within quotation marks and by providing a precise (page number) reference for the source of the quote. In many contexts, especially reports of empirical work, quotations are best avoided.

• “Using your own words” means that you should not borrow from the writing of others – whether from fellow students or published authors. For example, it is not acceptable to base an essay on text from various sources that you have then edited to some degree – even if you cite these sources. First of all, there is the ethical issue arising from the dishonesty of presenting as your own work something which is essentially the work of others. In addition, there are good educational reasons for avoiding this, even where you feel that someone else has expressed some idea far more clearly than you could. One reason is that you must learn to express yourself clearly in writing; like most other skills, this only comes with practice. Another, is the failure to understand information or ideas at all thoroughly if all you have done is reproduce (with some editing) what
someone else has written about the topic.

- When you express in your own words what you have learned from various sources, you should cite each source. The standard convention for most written work in psychology is to list references at the end of your essay or report, rather than, for example, to use footnotes. To express some idea without giving a citation implies

- University of Sydney – Syllabus of Senior Psychology 3, 2012page 6that it is your own idea. Therefore, if it is in fact an idea obtained from someone else, this needs to be acknowledged. Listing a set of sources implies that you have read them all. Therefore, you should list as references only those you have actually read. If you are depending on a secondary source, then make this clear, e.g., ... salivary conditioning (Pavlov, 1927; cited in Mazur, 1998).

- The points made here also apply to non-textual material. For example, graphs or tables of data included in a report should be your own work and not copied from others. Very occasionally you may need to ‘quote’ a figure from some other source; if you do so, you should make its origin quite clear.

- In general, avoid letting other students use your work for any kind of assessment. On the rare occasion where this may be appropriate, make sure that the other student acknowledges your contribution as the original author.

- In some cultures, students show their respect for a teacher by copying what the teacher has said or written. In Australian University education, copying a teacher (even if paraphrasing) is plagiarism if the source is not cited.
Research and resource support for Psychology students

The University of Sydney Library has 12 libraries in different locations, on different subjects with different facilities. Fisher Library is where you will find the physical collection of most relevance to your Psychology studies. Fisher Library is located on Eastern Ave, Camperdown campus. We also have loads available online – find us at sydney.edu.au/library/

Matthew Davis is the Faculty Liaison Librarian for Psychology. Matthew is available to help you find and use library resources for your assignments or research. You can email him at library.psychology@sydney.edu.au or phone on 9351 3629. The Psychology Librarian is located at Badham Library, level 1, Badham Building, Science Rd, Camperdown Campus.

Psychology books in high demand

The 2 hour collection is located on Level 3 of Fisher Library. Most of your required and recommended items from the reading lists will be here. You can find a list of your required readings in the catalogue by searching under your Unit of Study code. Some material in the list is also available to read online.

http://opac.library.usyd.edu.au/search/r

Psychology subject guide

There is a comprehensive subject guide that includes links to psychology databases, internet resources, information on tests and measurements and more. Take a look at http://libguides.library.usyd.edu.au/psychology You can also enrol in free research, database and EndNote training classes on this site.

Need a refresher after vacation?

Watch and listen to these online learning objects and get back up to speed with information literacy skills on topics such as research, essay writing and referencing. http://www.library.usyd.edu.au/skills/