PSYC3013 – Perceptual Systems

Unit of Study Code: PSYC3013

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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 (2011or 2111) and at least one other Intermediate Psychology Unit from PSYC (2012 or 2112), PSYC (2013 or 2113), PSYC (2014 or 2114).

Assessment:

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.
Submit a plan by your week 6 tutorial and your tutor will provide feedback (not assessed; feedback only).
Full report due 23 September (Monday of week 9)

2) Group presentation: Perceptual disorders (10% of total mark). Presentation done during tutorials of week 10 (8-11 October)
3) **Tutorial quiz**: During tutorials of week 13, 28-31 October (12% of total mark),

4) **Tutorial attendance**: 3% of total mark.

**Examination (50%)**:  
50% Multiple choice questions, 50% short answers of approximately 1 page each
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)

David Alais (Lecture 1)
• Introduction, course overview and themes

Alex Holcombe (Lectures 2-6):
• The retina, filling in blind spots
• Spatial resolution of vision and attention
• Temporal resolution of vision and attention
• Visual packaging and objects

Bart Anderson (Lectures 7-10):
• Surfaces (colour, lightness)
- Segmentation (completion, occlusion, transparency)
- Material perception (gloss, translucency.)
- Shape perception

Colin Clifford (Lectures 11-15):
- Visual cortex: structure & function
- Motion processing: plaids & the aperture problem
- Motion processing: optic flow & 3-D structure-from-motion
- Motion processing: adaptation & attentional modulation

Frans Verstraten (Lectures 16-19):
- Depth, Stereopsis and rivalry
- Perceptual disorders
- Applied vision

Alex Holcombe (Lecture 20):
- Vision in sport: Perception on the pitch

David Alais (Lectures 21-25):
- Combining audition and vision: neural structures & functions
- Audiovisual interactions in attention and perception
- Fusing audiovisual information and dealing with discrepancy
- Early vs. late multisensory integration; time perception
- ‘Virtual’ auditory space and auditory localisation

**NOTE: some changes in lecture program are likely, for notice see Blackboard**

**Tutors:**
David Alais ([david.alais@sydney.edu.au](mailto:david.alais@sydney.edu.au)): M16A and W16A
Erik van der Burg ([erik.vanderburg@sydney.edu.au](mailto:erik.vanderburg@sydney.edu.au)): W10A and R10A

Tutorials are a mix of class demonstrations, computer-based tutorials, and discussion.
## Timetable

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture dates</th>
<th>Tutorials</th>
<th>Lecturers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29 Jul, 31 Jul</td>
<td>No tute</td>
<td>Alais, Holcombe</td>
</tr>
<tr>
<td>2</td>
<td>5,7 Aug</td>
<td>Blind spot and filling in; project info</td>
<td>Holcombe</td>
</tr>
<tr>
<td>3</td>
<td>12, 14 Aug</td>
<td>Touch, tactile acuity, receptive fields intro; form groups</td>
<td>Holcombe</td>
</tr>
<tr>
<td>4</td>
<td>19, 21 Aug</td>
<td>Receptive fields; work on project</td>
<td>Anderson</td>
</tr>
<tr>
<td>5</td>
<td>26, 28 Aug</td>
<td>Signal Detection Theory</td>
<td>Anderson</td>
</tr>
<tr>
<td>6</td>
<td>02, 04 Sep</td>
<td>Work on blind spot project; PLAN DUE</td>
<td>Clifford</td>
</tr>
<tr>
<td>7</td>
<td>09, 11 Sep</td>
<td>Motion perception</td>
<td>Clifford</td>
</tr>
<tr>
<td>8</td>
<td>16, 18 Sep</td>
<td>No tute: work on your project. PROJECT DUE MONDAY 23 SEP</td>
<td>Clifford, Verstraten</td>
</tr>
<tr>
<td>9</td>
<td>23, 25 Sep</td>
<td>No tutorials (prepare presentations)</td>
<td>Verstraten</td>
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**AVCC COMMON VACATION WEEK: NO CLASSES OR TUTORIALS (30 SEP – 07 OCT)**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture dates</th>
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<th>Lecturers</th>
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<tbody>
<tr>
<td>11</td>
<td>14, 16 Oct</td>
<td>Perceptual disorders PRESENTATIONS</td>
<td>Holcombe, Alais</td>
</tr>
<tr>
<td>12</td>
<td>21, 23 Oct</td>
<td>Audition</td>
<td>Alais</td>
</tr>
<tr>
<td>13</td>
<td>28, 30 Oct</td>
<td>TUTORIAL QUIZ</td>
<td>Alais</td>
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READINGS


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

Submitting your assignment:

• You will submit your assignment online. It will be marked online, and returned to you with comments online.

• This means it is critical that you submit online correctly. It is your responsibility to ensure you submit online on time and correctly. The due time is 4PM on Monday September 23rd. The submission time is recorded electronically, and even one second past the due time is recorded as being late.
  
  o If you do not have access to a reliable computer and internet connection, have a backup plan, come into University to a Computer lab to submit, submit from the tutorial room with your tutor’s help, or have a friend whose computer you will use (do not give them access to your assignment though).
  
  o ALLOW EXTRA TIME even if you have a normally perfect computer and internet connection. We strongly suggest you begin attempting to submit the night before the due date at the latest. If you have any issues you can always come into university and use a computer here.
  
  o If you are being sensible and allowing extra time (at least a day) to submit then even if there are any congestion or network issues you should be fine.
  
  o Ensure that you put your tutor’s name in the submission title field when submitting your assignment. This will allow your tutor to find the assignment.

• The online assignment submission link will be available a full week before the due date and you can practice submitting as much as you want until the due time. Note that each submission will overwrite and replace the previous one, so ensure that you have checked that your final correct submission is online the evening before the cut-off.

• Follow all instructions (which will be posted on Blackboard) relating to the submission of your assignment.

• Part of this assessment is the requirement that you submit your report online. Do not email your assignment to anyone else (especially your tutor) and ask them to submit it online for you.

• Ensure you submit the correct file. The submission process shows you a complete preview of you entire submission, and the digital receipt shows the entire first page of the submission.

• Note that once the official due date/time has passed (4PM, 23rd Sep), a late link will appear for the next week.

<table>
<thead>
<tr>
<th>Penalties applying to the submission of assignments</th>
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<tr>
<td>Assignment submitted late, to 7 days late (i.e. 1 second after 4pm on 23 Sep to 4pm on 30 Sep)</td>
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<tr>
<td>Assignment submitted 7 to 14 days late (i.e. 1 second after 4pm on 30 Sep to 4pm on 7 Oct)</td>
</tr>
<tr>
<td>Assignment submitted 14 to 21 days late (i.e. 1 second after 4pm on 7 Oct to 4pm on 14 Oct)</td>
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<tr>
<td>No assignment submitted before 4pm, 14th October</td>
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<tr>
<td>No assignment of any kind submitted</td>
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Note that these penalties may be modified by a successful application for SPECIAL CONSIDERATION (see section ahead), however this does not apply to the final possible submission date and time of 4pm, 14th October for the original assignment topic. All assignments must be received by 4pm on that date, because assignments on the same topic will be returned to students shortly after.

After 4pm, 14th October if you still have not completed and submitted an essay, you must request an alternate assignment from psychology.info@sydney.edu.au.

**SPECIAL CONSIDERATION (INCLUDES REQUESTS FOR EXTENSIONS)**

**What to do:**
- Understand that the Faculty of Science is in charge of Special Consideration for Psychology, regardless of what Faculty your degree originates in.
- Start by going to the Faculty of Science Webpage, and downloading the ‘Special Consideration’ pack
- The application pack contains a section, which your practitioner must fill out. Keep this in mind, and plan a trip to your practitioner after you have obtained this form for them.
- Once you have completed your application, submit it to the Faculty of Science Office in person (Level 1 Carslaw building).

**Important:**
- If you are applying for Special Consideration, that usually means you have been sick or still are sick – and since the forms need to be submitted in person, you might want to ask a friend or family member to do this for you.
- Lodge your application **within five working days of the assessment task for which consideration is sought**. This is most important. The Faculty of Science will not accept late applications unless the illness itself is prolonged. **“Within five working days” means no earlier than five working days before and no later than five working days after.**
- Special Consideration exists to allow students who have suffered sickness or misadventure, **flexibility** in how they **complete** the course. It does not exist so that students may miss large amounts of course content, and we then ‘estimate’ your performance had you actually been able to attend. If you have a prolonged illness which is making you miss more than one assessment component and a large amount of course content, consider contacting DISABILITY SERVICES for
advice (see next section), or rather than attempting to lodge a huge special consideration application, you might be better off applying to discontinue not fail (DNF).

- Special Consideration is not an option for students who wait until the final marks are made available (and just fail or go worse than they expected) to let us know there was a problem. If you are not sure whether a misadventure has affected you, it is wise to lodge a special consideration at the time just in case. Allowing you to find excuses for your poor performance after the fact is not what special consideration is for.

For the different components of PSYC3013

Assignment (due 4pm, Sep 23rd)

If you suffer illness or misadventure while completing your assignment, apply for special consideration within five working days of the due date and ask for an extension. Do not submit an assignment while sick, and expect to have marks added to it; instead, apply for an extension, and complete your assignment while you are well. Also note that you will most likely be given an extension for the amount of time you are considered to have been affected. Since it takes time for paperwork to be processed, and/or you may have submitted your application after the due date, you may receive notice of a new due date after that date has passed. So ensure you submit your assignment as soon as you are able, or at least before you expect an extension will be granted for. Note that 4pm on the 14th October is the last day we will accept assignments on the original topics with or without extensions.

Also note that because the assignment is online submission only, technical problems are not considered grounds for special consideration. You are strongly advised to attempt to submit your assignment online, at the latest, the night before the due date. If something goes wrong you can always come into University on the due date and we can assist you to submit. If you ignore this advice and suffer a technical problem or network congestion on the due date, then that incident is not covered under special consideration.

THE QUIZ

If through illness or misadventure you cannot attend your normal tutorial class, make arrangements to attend another tutorial during the week of the quiz. There are 4 tutorials: Mon 4pm, Wed 10 am, Wed 4pm, Thurs 10am. If you cannot make any of these times in the week of the quiz, a new quiz will be available for you to take at the earliest opportunity for students who have been granted a supplementary quiz as a result of a special consideration application.

PARTICIPATION

Tutorial attendance and participation forms a small component of the course assessment. If you cannot attend through illness or misadventure, it is your responsibility to document that.

FINAL EXAMINATION

If you are ill close to the final examination, consider whether you will sit it. If you choose to sit it while ill, you can still apply for special consideration within 5 working days of the examination, and you may be offered a supplementary exam at a later date. If you choose not to sit the exam, then apply for special consideration within 5 working days.
and you may be offered a supplementary exam at a later date. We will give you information about the time and location of any supplementary exam via email.

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 the 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 and interpretation, and the appropriate use of technologies.

Student learning outcomes:

(i) To develop an understanding of the major methods of perceptual research
(ii) Critically assess research findings and related theories in these areas
(iii) 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 the quality of information, including differentiating 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 that 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/