PSYC3013 – Perceptual Systems

Unit of Study Code: PSYC3013

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Tutors
Professor David Alais (contact details above): Mon 4pm, Thurs 10am.

Mr James Brown: Wed 10am, Wed 4pm.
Room 518 Griffith Taylor, Phone: 9036 7259
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Format of Unit:
2 x 1 hour lectures/week x 13 weeks
1 x 2 hour tutorial/week x 10 weeks

Credit Point Value: 6 Credit Points

Time Commitment: 4 hours face to face per week; 8 hours private study per week
(including 1 hour preparation for each tutorial)

Lecture attendance: Required. 80% recommended to pass unit. Audio and video (of slides) recordings made of most lecture content and most slides are posted online.

Tutorial attendance: Required. 80% is required to pass the unit. Attendance is recorded.

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 Summary

<table>
<thead>
<tr>
<th>What?</th>
<th>When due?</th>
<th>When Returned?</th>
<th>% Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group Report</strong> (max 2000 words, ±5%) <strong>Compulsory</strong></td>
<td>Online before 11:59pm Tuesday Oct 3rd (Week 9)</td>
<td>On-time submissions returned by 11:59pm Tuesday Oct 31st* online (Week 13)</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Group presentation on perceptual disorders</strong> <strong>Compulsory</strong></td>
<td>Conducted in your tutorial in Week 11</td>
<td>Marks available the following week</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Quiz on tutorial material</strong> <strong>Compulsory</strong></td>
<td>Conducted in your tutorial in Week 13</td>
<td>Marks available the following week</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Tutorial attendance and participation</strong> <strong>Compulsory</strong></td>
<td>8/10 classes must be attended</td>
<td>Marks available in the stuvac week</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Exam</strong> <strong>Compulsory</strong></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><strong>100%</strong></td>
</tr>
</tbody>
</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.
**Class work (50%):**

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

   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.

   The tutorial in week 6 (4th-7th September) is dedicated to discussing your plans and experimental design with your tutor who will provide helpful guidance and feedback.

   Full report due 3rd October (Tuesday 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 the tutorial of week 11 (16th-19th October).

3) **Tutorial quiz:** There is a quiz assessing the tutorial material, to be done during tutorials of week 13, 30th Oct – 2nd Nov (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.

**Disruptions to your study**

If your assessments are disrupted by illness or misadventure or unavoidable community commitments, apply for Special Consideration or Special Arrangements online here: [http://sydney.edu.au/current_students/special_consideration/index.shtml](http://sydney.edu.au/current_students/special_consideration/index.shtml)
If you have (or develop) a continuing issue, register with Disability Services here: www.sydney.edu.au/disability

In this unit of study Simple Extensions are not granted. Apply formally for special consideration using the link above if you require any extension.

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: http://sydney.edu.au/science/psychology/current_students/doc/Psych_UG_Student_Guide.pdf

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:

Late penalties
You will receive a penalty of 2% of the maximum value of the Research Report assignment (e.g., 2 marks / 100) for each day (or part thereof) it is late, up to the closing date of the assignment, after which no more submissions will be accepted.

Academic Honesty
While the University is aware that the vast majority of students and staff act ethically and honestly, it is opposed to and will not tolerate academic dishonesty or plagiarism and will treat all allegations of dishonesty seriously.

All students are expected to be familiar and act in compliance with the relevant University policies, procedures and codes, which include:

– Academic Honesty in Coursework Policy 2015
– Academic Honesty Procedures 2016
– Code of Conduct for Students
– Research Code of Conduct 2013 (for honours and postgraduate dissertation units)

They can be accessed via the University’s Policy Register: http://sydney.edu.au/policies
(enter “Academic Honesty” in the search field).

Students should never use document-sharing sites and should be extremely wary of using online “tutor” services. Further information on academic honesty and the resources available to all students can be found on the Academic Integrity page of the University website: [http://sydney.edu.au/elearning/student/EI/index.shtml](http://sydney.edu.au/elearning/student/EI/index.shtml)

**Academic Dishonesty and Plagiarism**

*Academic dishonesty involves seeking unfair academic advantage or helping another student to do so.*

You may be found to have engaged in academic dishonesty if you:

- Resubmit (or “recycle”) work that you have already submitted for assessment in the same unit or in a different unit or previous attempt;

- Use assignment answers hosted on the internet, including those uploaded to document sharing websites by other students.

- Have someone else complete part or all of an assignment for you, or do this for another student.

- Except for legitimate group work purposes, providing assignment questions and answers to other students directly or through social media platforms or document (“notes”) sharing websites, including essays and written reports.

- Engage in examination misconduct, including using cheat notes or unapproved electronic devices (e.g., smartphones), copying from other students, discussing an exam with another person while it is in progress, or removing confidential examination papers from the examination venue.

- Engage in dishonest plagiarism.

*Plagiarism means presenting another person’s work as if it is your own without properly or adequately referencing the original source of the work.*

Plagiarism is using someone else’s ideas, words, formulas, methods, evidence, programming code, images, artworks, or musical creations without proper acknowledgement. If you use someone’s actual words you must use quotation marks as well as an appropriate reference. If you use someone’s ideas, formulas, methods, evidence, tables or images you must use a reference. You must not present someone’s artistic work, musical creation, programming code or any other form of intellectual
property as your own. If referring to any of these, you must always present them as the work of their creator and reference in an appropriate way.

Plagiarism is always unacceptable, regardless of whether it is done intentionally or not. It is considered dishonest if done knowingly, with intent to deceive or if a reasonable person can see that the assignment contains more work copied from other sources than the student’s original work. The University understands that not all plagiarism is dishonest and provides students with opportunities to improve their academic writing, including their understanding of scholarly citation and referencing practices.

Use of similarity detection software

All written assignments submitted in this unit of study will be submitted to the similarity detecting software program known as Turnitin. Turnitin searches for matches between text in your written assessment task and text sourced from the Internet, published works and assignments that have previously been submitted to Turnitin for analysis.

There will always be some degree of text-matching when using Turnitin. Text-matching may occur in use of direct quotations, technical terms and phrases, or the listing of bibliographic material. This does not mean you will automatically be accused of academic dishonesty or plagiarism, although Turnitin reports may be used as evidence in academic dishonesty and plagiarism decision-making processes.

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.

Learning outcomes and graduate qualities

Because of the diversity of content in PSYC3013, a large number of learning outcomes can be met, which then contribute to graduate qualities.

Depth of Disciplinary Expertise

By the end of this course you will have a deep understanding of various areas of visual perception and a familiarity with auditory and tactile perception too. You will gain an understanding of the various research methods used in perceptual research and an understanding of the computational and neurophysiological underpinnings of perceptual processes. Your level of mastery over this understanding will be assessed in the group report, the final exam and the tutorial quiz.

Broader skills

By the end of this course, your understanding of science (and how to present it to others) will be significantly improved. Your increased understanding of the methods of science, particularly as applied in perceptual psychology, will greatly enhance your ability to think critically about the subject of psychology.

In addition, you will learn how to write in a scientific report format, learning how to motivate a research question, define a hypothesis, design an experiment, collect data and evaluate it statistically, presenting your data graphically and draw appropriate conclusions. Your skills in these areas will be assessed in the group report.

Cultural Competence

Psychology at the University of Sydney is one of the largest and most diverse courses in Australia, with students from over 50 degree programs, and countless backgrounds and cultural groups participating. When doing your group report and group presentation you will gain experience in working productively, collaboratively and openly in diverse groups and across cultural boundaries.

An integrated professional, ethical and personal identity

Because Psychology exists as both a discipline and research pursuit, by the end of this course you will see how these identities relate to each other. By completing your group report and group presentation you will get first-hand experience of research conducted with clinical aims in mind, and distinct research with objectives related to pure understanding.
Lecture Program (Mon. 3pm, Wed. 3pm; Carslaw LT 275)

Bart Anderson (Lectures 1-7):
- Introduction: The problems of perception
- The information for vision
- Materials and surfaces 1: Lightness and color
- Materials and surfaces 2: Gloss
- Materials and surfaces 3: Shading
- Seeing in three dimensions
- Perceptual grouping

Alex Holcombe (Lectures 8-15):
- Signal detection theory
- The retina and filling in blindspots
- Spatial resolution of vision and attention PART 1
- Spatial resolution of vision and attention PART 2
- Touch PART 1
- Touch PART 2
- Spatial resolution PART 3
- Temporal resolution of vision and attention PART 1
- Temporal resolution of vision and attention PART 2

Frans Verstraten (Lectures 16-17):
- Perceptual disorders
- Applied vision

David Alais (Lectures 18-25):
- Introduction to multisensory perception
- Combing the senses: spatial and temporal rules in midbrain
- Multisensory cortex
- Models of sensory integration
- Sensory integration from synchrony
- Temporal recalibration
- Resolving visual ambiguity with sound and touch
- Synesthesia: cross-wired senses
### Timetable

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<tr>
<th>Week</th>
<th>Lecture dates</th>
<th>Tutorials</th>
<th>Lecturers</th>
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<tbody>
<tr>
<td>1</td>
<td>31 July, 2 Aug</td>
<td>No tute</td>
<td>Anderson</td>
</tr>
<tr>
<td>2</td>
<td>7, 9 Aug</td>
<td>Tutorial 1: Blind spot and filling in; project info</td>
<td>Anderson</td>
</tr>
<tr>
<td>3</td>
<td>14, 16 Aug</td>
<td>Tutorial 2: Touch, tactile acuity, receptive fields intro; Form groups of 3.</td>
<td>Anderson</td>
</tr>
<tr>
<td>4</td>
<td>21, 23 Aug</td>
<td>Tutorial 3: Receptive fields; work on project</td>
<td>Anderson; Holcombe</td>
</tr>
<tr>
<td>5</td>
<td>28, 30 Aug</td>
<td>Tutorial 4: Signal Detection Theory</td>
<td>Holcombe</td>
</tr>
<tr>
<td>6</td>
<td>4, 6 Sept</td>
<td>Tutorial 5: Work in class on blind spot project; Tutor feedback</td>
<td>Holcombe</td>
</tr>
<tr>
<td>7</td>
<td>11, 13 Sep</td>
<td>Tutorial 6: Motion perception</td>
<td>Holcombe</td>
</tr>
<tr>
<td>8</td>
<td>18, 20 Sep</td>
<td>No tute: work on your project.</td>
<td>Holcombe; Verstraten</td>
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**AVCC COMMON VACATION WEEK: NO CLASSES/TUTORIALS (25 – 29 SEP)**

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<thead>
<tr>
<th>Week</th>
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<th>Tutorials</th>
<th>Lecturers</th>
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<tbody>
<tr>
<td>9</td>
<td>2, 4 Oct (2nd is public holiday)</td>
<td>No tutorials (prepare presentations) <strong>Blind Spot project due Tuesday 3rd October.</strong></td>
<td>Verstraten</td>
</tr>
<tr>
<td>11</td>
<td>16, 18 Oct</td>
<td>Tutorial 8: <strong>Group presentations on perceptual disorders</strong></td>
<td>Alais</td>
</tr>
<tr>
<td>13</td>
<td>30 Oct, 1 Nov</td>
<td>Tutorial 10: <strong>Tutorial quiz</strong></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).

Graduate objectives 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:
(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 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:


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
• 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 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.

Data collection

Note that your participation in this unit of study permits us to use your learning analytics to be used to improve your experience of learning.

eLearning/Blackboard access

You are required to be given access to the eLearning site for this Unit of Study from the beginning of the week before semester begins. This document, and in particular details about assessment due dates, weightings and closing dates, must be available on that eLearning site from that time, and changes will not be made to these details throughout semester except in exceptional circumstances.