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**Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.
General Information

Unit convenor and teaching staff
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C4A405
By Appointment

Eugene Chekaluk
eugene.chekaluk@mq.edu.au
Contact via eugene.chekaluk@mq.edu.au
C3A 527
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Bareena Johnson
bareena.johnson@mq.edu.au
Contact via bareena.johnson@mq.edu.au

Unit Convenor
Peter Wenderoth
peter.wenderoth@mq.edu.au
Contact via peter.wenderoth@mq.edu.au

Credit points
3

Prerequisites
PSY237(P) or PSY247(P)

Corequisites
PSY222 or PSY248

Co-badge status
Unit description
Recent research has seen a rapprochement between approaches to the study of mechanisms of human perception, including animal neurophysiology and human psychophysics. This unit deals with a number of advanced topics, concentrating on current research in vision including recent evidence for parallel processing in higher areas of human and monkey visual cortex, and work on mechanisms of attention, orientation perception, and motion. It also deals with brain imaging approaches to the study of awareness and consciousness; reading; reading disability; and other perceptual disorders; face perception; and stereopsis. Important components of the unit are an essay, practical class worksheets and a final essay exam.

Important Academic Dates
Information about important academic dates including deadlines for withdrawing from units are available at https://students.mq.edu.au/important-dates

Learning Outcomes
1. Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn
2. Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
3. Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
4. Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
5. Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)
6. Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical worksheets</td>
<td>15%</td>
<td>In Practical Class</td>
</tr>
<tr>
<td>Essay</td>
<td>30%</td>
<td>10am Thursday 4 October.</td>
</tr>
<tr>
<td>Final exam</td>
<td>55%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

https://unitguides.mq.edu.au/unit_offerings/34888/unit_guide/print
Practical worksheets
Due: **In Practical Class**
Weighting: **15%**

Three Practical Worksheets (each comprising 10 questions).
Various practical topics. NB: Worksheets must be completed and handed in during the practical that you attend. Worksheets will not be distributed or accepted at other times.

This Assessment Task relates to the following Learning Outcomes:
- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)

Essay
Due: **10am Thursday 4 October.**
Weighting: **30%**

An essay relating to the textbook, 2500 words maximum.
**Worth 30% of final grade.**

This Assessment Task relates to the following Learning Outcomes:
- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Time management (e.g. identifying and setting targets; planning how to manage
available time and distributing time across different units)

- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

Final exam
Due: N/A
Weighting: 55%

Final Exam - 2hr (+10mins reading time)

The examination will be two essay questions.

Examination

You are expected to present yourself for examination at the time and place designated in the University Examination Timetable. The timetable will be available in Draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations. [http://www.timetables.mq.edu.au/exam](http://www.timetables.mq.edu.au/exam)

The only exception to not sitting an examination at the designated time is because of documented illness or unavoidable disruption. In these circumstances you may wish to consider applying for Special Consideration. Information about unavoidable disruption and the special consideration process is available at [http://www.psy.mq.edu.au/speccond/scrules.htm](http://www.psy.mq.edu.au/speccond/scrules.htm). If a Supplementary Examination is granted as a result of the Special Consideration process, the examination will be scheduled after the conclusion of the official examination period that begins on Monday 12 November 2012.

The format of a supplementary examination is at each unit convener’s discretion and is subject to change from the original final examination.

Supplementary Exams are only offered to students who have satisfactorily completed all other assessments for the unit and were unable to sit the final exam.

Instructions on applying for sitting of a supplementary exam are available from the website, [www.psy.mq.edu.au/speccond](http://www.psy.mq.edu.au/speccond). It is the student’s responsibility to follow the steps outlined in this website. When a supplementary exam has been granted an email will be sent to the student. It is the student’s responsibility to check the Department of Psychology Special Consideration website for information relating to the date and location of the supplementary exam. Students who are granted to sit for a supplementary exam must make themselves available to sit for the supplementary exam on the specified dates. There will be only one alternative time. It is the student’s responsibility to email the Psychology Office, psy_off@mq.edu.au to confirm attendance to the supplementary exams.

You are advised that it is Macquarie University policy not to set early examinations for individuals or groups of students. All students are expected to ensure that they are available until the end of the teaching session, which is the final day of the official examination period.
This Assessment Task relates to the following Learning Outcomes:

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)
- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

**Delivery and Resources**

**Lectures:**

Number of lectures: 13

Length of lectures: 2 hours

Venue of Lectures: E7B100 (but check https://timetables.mq.edu.au/2012/showtimetable.aspx)

Time of lectures: Thursday 13-15

Even though iLecture videos or only mp3 sound will be available, lecture attendance is **strongly recommended**.

**Tutorials/Practicals:**

Number of practicals: 3

Length of practicals: 2 hours

Venue of practicals C4A 335

Time of practicals: Tuesday 14-16, Tuesday 18-20, Friday 11-13, Weeks 3, 5, 7.

**Name of tutors for practicals:**

Bareena Johnson (Tuesday 18-20)

Professor Peter Wenderoth (Tuesday 14-16; Friday 11-13)

In order to gain 15% for the worksheets in Weeks 3, 5 and 7 students need to be in that class and complete the worksheet while there.
Changing classes: Changes to all units can be done on-line via eStudent. After week 2, no further changes will be entertained unless supporting documentation about the reason for changing is provided and there is space in the tutorial you wish to change into.

**Required and Recommended Texts and/or Materials**


This book provides an engaging approach to studying vision and the visual system.

NB. You can buy this, *with free postage*, from [http://bookdepository.com](http://bookdepository.com) for not very much. [Amazon.com](http://www.amazon.com) and [www.fishpond.com.au](http://www.fishpond.com.au) also have it for a cheap price. From a bookshop you would pay about $80. Also check out the web page [http://www.sleightsofmind.com](http://www.sleightsofmind.com), especially the Media link, on that page.


Prescribed unit material: None

**RESOURCE LIST**

*This is deliberately called a resource list to indicate that you don’t need to read everything. Read what you like. Some references in here will be useful for your essay and your lectures. Some are here just for interest alone. Because all are now in e-reserve you have easy access to them.*


19. Ffytche D H & Zeki S. The primary visual cortex, and feedback to it, are not necessary for conscious vision. *Brain*, 134, 2011, 247-257


27. Kamitani Y & Tong F. Decoding seen and attended motion directions from activity in the human visual cortex. *Current Biology* 16, 2006, 1096-1102


45. Melcher D. Spatiotopic transfer of visual-form adaptation across saccadic eye movements. *Current Biology* 15, 2005, 1745-1748


63. Smith S & Wenderoth P. Large repulsion, but not attraction, tilt illusions occur when stimulus parameters selectively favour either transient (M-like) or sustained (P-like) mechanisms. *Vision Research* 1999 39 4113-4121


70. Tong F. Competing theories of binocular rivalry: A possible resolution. *Brain and Mind*, 2, 2001, 55-83


76. Van der Zwan R, Leo E, Joung W, Latimer C & Wenderoth P. Evidence that both area V1 and extrastriate cortex contribute to symmetry perception. *Current Biology* 8, 1998, 889-892

77. van der Zwan R, Wenderoth P. Psychophysical evidence for area v2 involvement in the reduction of subjective contour tilt aftereffects by binocular rivalry. *Visual Neuroscience*, 11, 1994, 823-830


83. Wenderoth P. Monocular symmetry is neither necessary nor sufficient for the dichoptic perception of bilateral symmetry. *Vision Research* 40 2000 2097-2100


91. Wiese M & Wenderoth P. Dichoptic reduction of the direction illusion is not due to binocular rivalry. *Vision Research* 2010 50 1824-1832


**Technologies used and required**

Computer literacy and web and library utilisation skills.

**What has changed**

Summary of Unit

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**Unit Schedule**

**Teaching and Learning Strategy**

This unit is taught through lectures and practicals with support from web-based resources such as iLearn, including the online discussion board. While lectures are useful principally for introducing new concepts and knowledge, practicals allow more direct interactions between instructor and students. They are your opportunity to enhance your understanding further by participating in activities and asking questions. The iLearn discussion board also allows students to discuss topics in greater depth, and may also feature contributions by staff members when there appears to be a need for involvement.

The lecture schedule set out below is a guide only, and is intended to be flexible. On occasion more time will be spent on certain topics if additional explanation is required. Material from one lecture may overlap into the next, where necessary, and topics may even change (with advice to that effect given well in advance).

**Lecture Timetable**
<table>
<thead>
<tr>
<th>Lecture</th>
<th>Thursday</th>
<th>Lecturer</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2/8/12</td>
<td>Wenderoth</td>
<td>Introduction to brain imaging: fMRI</td>
</tr>
<tr>
<td>2</td>
<td>9/8/12</td>
<td>Wenderoth</td>
<td>Signal Detection Theory</td>
</tr>
<tr>
<td>3</td>
<td>16/8/12</td>
<td>Wenderoth</td>
<td>V1, blindsight and binocular rivalry</td>
</tr>
<tr>
<td>4</td>
<td>23/8/12</td>
<td>Wenderoth</td>
<td>Awareness, attention and consciousness I</td>
</tr>
<tr>
<td>5</td>
<td>30/8/12</td>
<td>Wenderoth</td>
<td>Awareness, attention and consciousness II</td>
</tr>
<tr>
<td>6</td>
<td>6/9/12</td>
<td>Wenderoth</td>
<td>The direction of motion illusion (DI) and direction aftereffect (DAE)</td>
</tr>
<tr>
<td>7</td>
<td>13/9/12</td>
<td>Wenderoth</td>
<td>Visual Development</td>
</tr>
</tbody>
</table>

**Mid-Session Break: 17/9/12-1/10/12**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Thursday</th>
<th>Lecturer</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>4/10/12</td>
<td>Wenderoth</td>
<td>Using psychophysics to probe levels of processing in human vision</td>
</tr>
<tr>
<td>9</td>
<td>11/10/12</td>
<td>Brooks</td>
<td>Motion, Depth, and Motion-in-Depth</td>
</tr>
<tr>
<td>10</td>
<td>18/10/12</td>
<td>Brooks</td>
<td>Face Adaptation</td>
</tr>
<tr>
<td>11</td>
<td>25/10/12</td>
<td>Chekaluk</td>
<td>Applications of perceptual processes: I. Reading and reading disability</td>
</tr>
<tr>
<td>12</td>
<td>1/11/12</td>
<td>Chekaluk</td>
<td>Applications of perceptual processes: I I. Other perceptual disorders</td>
</tr>
<tr>
<td>13</td>
<td>8/11/12</td>
<td>Chekaluk</td>
<td>Applications of perceptual processes: I I. Other perceptual disorders</td>
</tr>
</tbody>
</table>

**Practical Timetable**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>DAY</th>
<th>TIME</th>
<th>WEEKS</th>
<th>LOCATION</th>
<th>TUTOR</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Tue</td>
<td>2-4</td>
<td>3, 5, 7</td>
<td>C4A335</td>
<td>PW</td>
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</table>

[https://unitguides.mq.edu.au/unit_offerings/34888/unit_guide/print](https://unitguides.mq.edu.au/unit_offerings/34888/unit_guide/print)
Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central. Students should be aware of the following policies in particular with regard to Learning and Teaching:


In addition, a number of other policies can be found in the Learning and Teaching Category of Policy Central.

Student Support

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at: [http://students.mq.edu.au/support/](http://students.mq.edu.au/support/).

UniWISE provides:

- Online learning resources and academic skills workshops [http://www.mq.edu.au/learning_skills/](http://www.mq.edu.au/learning_skills/)
- Personal assistance with your learning & study related questions.
- The Learning Help Desk is located in the Library foyer (level 2).
- Online and on-campus orientation events run by Mentors@Macquarie.

Student Enquiry Service

Details of these services can be accessed at [http://www.student.mq.edu.au/ses/](http://www.student.mq.edu.au/ses/).

Equity Support

Students with a disability are encouraged to contact the Disability Support Unit who can provide appropriate help with any issues that arise during their studies.

IT Help

If you wish to receive IT help, we would be glad to assist you at [http://informatics.mq.edu.au/help](http://informatics.mq.edu.au/help).
Graduate Capabilities

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)
- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

Assessment tasks

- Essay
- Final exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to
have a level of scientific and information technology literacy.

This graduate capability is supported by:

**Learning outcomes**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
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**Assessment tasks**

- Practical worksheets
- Essay
- Final exam

**Problem Solving and Research Capability**

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

**Learning outcomes**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)

Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)

Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

**Assessment tasks**

- Essay
- Final exam

**Creative and Innovative**

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

**Learning outcomes**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

**Assessment tasks**

- Practical worksheets
- Essay
- Final exam

**Effective Communication**

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication
This graduate capability is supported by:

**Learning outcomes**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

**Assessment tasks**

- Essay
- Final exam

**Engaged and Ethical Local and Global citizens**

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

**Learning outcome**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)

**Socially and Environmentally Active and Responsible**

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:
Learning outcomes

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)

Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

Learning outcomes

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)
- Time management (e.g. identifying and setting targets; planning how to manage available time and distributing time across different units)
- Written and oral communication skills (e.g. Writing clear and concise answers to unseen questions; asking questions in a clear and understandable fashion; taking notes from complex lecture presentations)

Assessment tasks

- Practical worksheets
- Essay
- Final exam

Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.
This graduate capability is supported by:

**Learning outcomes**

- Communication and information technology skills (e.g. Using computers: to access, send and read email; to find information on the web; to access course materials from iLearn)
- Information skills (e.g. learning to use library resources such as research databases, search engines, online journal articles etc.)
- Logical analysis (e.g. applying logic to refute illogical arguments or to deduce correct answers)
- Problem solving (e.g. Working out the best and most efficient way to achieve tasks such as completing assignments or studying for examinations)

**Changes since First Published**

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<thead>
<tr>
<th>Date</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>13/07/2012</td>
<td>The Description was updated.</td>
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