PS3038 - Cognition

2014/15 (Semester 1)
Dr Thomas Otto

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Office Hours
On appointment, please contact me by email.

Dates
The module runs on Thursdays starting on October 30, 2014 (Week 7). You are expected to attend both the lectures in the morning as well as one of the lab/seminar sessions in the afternoon.

Module Summary
The aim of this module is to develop an understanding of human cognitive processes. Topic areas covered include, for example, attention, memory, decision making, and reasoning (see lecture summaries below). Emphasis will be placed on the development of the skill of critical evaluation of evidence and theory. Lectures will be accompanied by practical classes, in which you will gain experience of the experimental methods used in cognitive research, and seminars in which research papers will be critically evaluated.

Lectures
An updated module outline will be provided prior to the start of the module (please check Moodle by the end of Week 5; the order of lectures may be subject to change).

[1] Introduction
Topics: What is Cognition? What are cognitive functions? Introduction to mental chronometry as a key method, which we will meet throughout the module. Understand the probabilistic nature of behavioural data.

[2] Attention
Topics: What is attention? Experimental paradigms in attention research including the Posner paradigm, visual search, inattentional blindness, and change blindness. Discussion of processing bottlenecks (e.g., psychological refractory period).
[3] Perceptual Decision Making

**Topics:** What is perceptual decision making? Understanding the progression from sensory evidence to categorical decisions. Introduction to the modelling of RT distributions.

[4] Memory and History Effects

**Topics:** What kind of memories do we have? Understanding history dependencies and why these make the brain a non-trivial machine. Discussion of paradigms investigating task- and modality-switching.


**Topics:** Introduction to logic and how it is used to form object categories. Demonstrating the use of logical operators in perceptual decision making. Conclusion and summary of the module.

**Reading List**

The module can be prepared by background reading in general Psychology textbooks such as *Psychology: The Science of Mind and Behaviour* (2nd edition) by Holt, Bremner, Sutherland, Vliek, Passer & Smith (McGraw-Hill). Relevant chapters include Scientific Principles in Psychology (p. 34-41), Analysing and Interpreting Data (p. 61-64), Attention (p. 190-196), Memory (p. 278-284), and Thinking (p. 341-352). A detailed reading list will be provided prior to the start of the module (please check Moodle by the end of Week 5).

**Assessment**

100% continuous assessment. During our lab classes, we will collect data in small demo experiments. You will be provided with summaries of these results. Your task is to select a particular piece of data to write a short report. You will develop and introduce a research question based on your background knowledge acquired during the module and discuss this question based on the data. Detailed information about the assessment will be provided in Lecture 1. Your report should be submitted by **30 November, 2014** via MMS. Feedback will be provided within three weeks.

**PS3038 Timetable**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture (9-11am)</th>
<th>Lab/Seminar (2-5pm)</th>
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<tbody>
<tr>
<td>7</td>
<td>October 30</td>
<td>Purdie B</td>
<td>Seminar Room (1.00)</td>
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<td>8</td>
<td>November 6</td>
<td>Purdie B</td>
<td>Seminar Room (1.00)</td>
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<tr>
<td>9</td>
<td>November 13</td>
<td>Purdie B</td>
<td>Seminar Room (1.00)</td>
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<td>10</td>
<td>November 20</td>
<td>Purdie B</td>
<td>Seminar Room (1.00)</td>
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<tr>
<td>11</td>
<td>November 27</td>
<td>Purdie B</td>
<td>Seminar Room (1.00)</td>
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* Labs/Seminars will run in 1 hour sessions that are organized in smaller groups of students.