PSYC 237, Introduction to Cognitive Science (3 credits)

Psychology category 3 course; required course for minor in Cognitive Science

Coordinator: Zahra Hussain
Department: Psychology
Office, extension: Jesup 103A, 4529
Email: zahra.hussain@aub.edu.lb
Office hours: Thursday 3:30-5:00 pm

Class times: TR 2:00-3:15 pm
Location: Nicely 322
Evaluation: Four written take-home assignments (4 x 10% = 40%), one midterm exam (30%), one final exam (30%)
Course material: There is no textbook for this course. Readings will be assigned by the instructors for each section, and posted on Moodle. The reading list is given below, and may be modified during the semester. Please check Moodle regularly for course updates.

Course description: Cognitive science is the study of human and artificial intelligence, from perception and action to language, reasoning and consciousness. The field draws on diverse disciplines including psychology, linguistics, computer science, neuroscience and philosophy. These subdisciplines share the goal of “understanding the representational and computational capacities of the mind, and their structural and functional representation in the brain” (Sloan Report, 1978). In this course, we will examine the contributions of these disciplines toward understanding various aspects of cognition, and trace the development of the field from its origins to the present.

Learning outcomes:
1. Apply the concepts of information, representation and computation to different types of cognition
2. Delineate the conceptual developments in the field of cognitive science
3. Identify the key concepts, goals and problems of different approaches toward the study of the mind
4. Differentiate the methods used across disciplines in the study of the mind

Course policy: The course will be taught by instructors from various departments of the Faculty of Arts and Sciences and the Faculty of Medicine, AUB. Please see list and contact details below. Please be on time to class, read the assigned readings and come prepared for discussion with questions and ideas of your own. Attendance is mandatory and will be taken with a sign-up sheet. If you are going to miss class or be late, please inform the instructor in advance via email or in person. If you are absent for more than five lectures, you may be withdrawn from the course. Cellphones and laptops may not be used in class. The instructors and course coordinator maintain the right to modify course content, method of evaluations, or the grade distribution at any point in the semester. You are responsible for keeping track of course content posted on Moodle, and for the readings assigned.

Missed tests and assignments: There will be no makeup exams or opportunities for missed midterms. Missed midterms without adequate documentation will be given a mark of zero. For a missed midterm with adequate documentation, the weight of the midterm will be carried forward to the final exam, or distributed between the assignments and the final exam. For medical excuses, adequate documentation comprises a medical certificate from AUBMC.

Grading policy: Grading will be criterion-based. Adjustments may be made to the final distribution of grades depending on class performance.
## Course schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Instructor</th>
<th>Assignment dates</th>
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<tbody>
<tr>
<td>T Jan 22</td>
<td>Introduction</td>
<td>Zahra Hussain</td>
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<tr>
<td>RTR Jan 24, 29 31</td>
<td>Philosophy</td>
<td>Pat Lewtas</td>
<td></td>
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<tr>
<td>TR Feb 5, 7</td>
<td>Perception</td>
<td>Zahra Hussain</td>
<td></td>
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<tr>
<td>R Feb 14</td>
<td>Holiday: No class</td>
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<tr>
<td>TTR Feb 12, 19, 21</td>
<td>AI</td>
<td>Mohamed Nassar</td>
<td>#1 Feb 19 (Intro-AI); due Feb 26</td>
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<tr>
<td>TR Feb 28, Mar 5</td>
<td>Language acquisition</td>
<td>Lina Choueiri</td>
<td></td>
</tr>
<tr>
<td>RTR Mar 7, 12, 14</td>
<td>Language acquisition</td>
<td>Niamh Kelly</td>
<td>#2 Mar 12 (Language); due Mar 17</td>
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<tr>
<td>TR Mar 19, 21</td>
<td>Conceptual development</td>
<td>Tamer Amin</td>
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<tr>
<td>Saturday March 23</td>
<td>Midterm (Intro -&gt; Language)</td>
<td>Julien Besle</td>
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<tr>
<td>TRT Mar 26, 28, Apr 2</td>
<td>Computational Neuroscience</td>
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<tr>
<td>RTR Apr 4, 9, 11</td>
<td>Cognitive Neuroscience</td>
<td>Hala Darwish</td>
<td>#3 Apr 9 (Concept - Cog Neu. I); due Apr 16</td>
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<tr>
<td>TRT Apr 16, 18, 23</td>
<td>Neuroimaging</td>
<td>Julien Besle</td>
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<tr>
<td>RT Apr 25, 30</td>
<td>Decision making</td>
<td>Zahra Hussain</td>
<td>#4 Apr 25, due May 2</td>
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## Reading list

**Note:** This list may be modified by instructors before or during their section. Some instructors will provide additional supplementary readings not shown in this list. Please check Moodle regularly for updates.

### Introduction (Hussain, Jan 22)


### Philosophy (Lewtas, Jan 24 - 31)


Perception - Edge detection and object recognition (Hussain, Feb 5 - 12)


Artificial Intelligence (Nassar, Feb 14 - 26)


Language acquisition (Choueiri, Feb 28 - Mar 5)


Language acquisition (Kelly, Mar 7 - 14)


**Conceptual development: The case of number (Amin, Mar 19 - 21)**

**Computational Neuroscience (Besle, Mar 26 - Apr 2)**
*To be determined*


**Cognitive Neuroscience I: Learning and memory (Darwish, Apr 4 - 11)**
*To be revised*


**Cognitive Neuroscience II: Neuroimaging (Besle, Apr 16 - 23)**


**Judgement and reasoning (Hussain, Apr 25 - 30)**


Contact list

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Department</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Zahra Hussain (coordinator)</td>
<td>Psychology</td>
<td><a href="mailto:zahra.hussain@aub.edu.lb">zahra.hussain@aub.edu.lb</a></td>
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<tr>
<td>Patrick Lewtas</td>
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<tr>
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<tr>
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<tr>
<td>Tamer Amin</td>
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<tr>
<td>Hala Darwish</td>
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<tr>
<td>Julien Besle</td>
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<td><a href="mailto:jb66@aub.edu.lb">jb66@aub.edu.lb</a></td>
</tr>
</tbody>
</table>

Communication: If you have questions about the course format, or specific questions about the course material, please email the course coordinator or course instructors, or arrange to meet them person. We will try to respond to emails within a 48 hour period. Please try to use office hours for clarification of material. All instructors’ emails are given in the syllabus.

Academic Integrity: All written assignments must be in your own words. Please refer to AUB Student Code of Conduct: [http://website.aub.edu.lb/rep/cec/spaac/Documents/RevisedStudentCodeConduct.pdf](http://website.aub.edu.lb/rep/cec/spaac/Documents/RevisedStudentCodeConduct.pdf) and [https://www.aub.edu.lb/it/services/students/plagiarism/Pages/home.aspx](https://www.aub.edu.lb/it/services/students/plagiarism/Pages/home.aspx), which concerns academic misconduct including cheating, plagiarism, in-class disruption, and dishonesty. Please be aware that misconduct is vigorously prosecuted and that AUB has a zero tolerance policy. Evidence of cheating or plagiarism will result in course failure.

Disability: AUB strives to make learning experiences accessible for all. If you anticipate or experience academic barriers due to a visible or invisible disability (including mental health, chronic or temporary medical conditions), please inform me immediately so that we can discuss your options. To help establish reasonable accommodations and facilitate a smooth accommodations process, contact the Accessible Education Office (AEO), preferentially in the first few weeks of the semester: accessibility@aub.edu.lb; +961-1-350000, Ext. 3246; West Hall, 314. In all cases, you must provide me with an official AUB letter of accommodation from the AEO.

Non-discrimination: AUB is committed to facilitating a campus free of all forms of discrimination including sex/gender-based harassment prohibited by Title IX. The University’s non-discrimination policy applies to, and protects, all students, faculty, and staff. If you think you have experienced discrimination or harassment, including sexual misconduct, we encourage you to tell someone promptly. If you speak to a faculty or staff member about an issue such as harassment, sexual violence, or discrimination, the information will be kept as private as possible, however, faculty and designated staff are required to bring it to the attention of the University’s Title IX Coordinator. Faculty can refer you to fully confidential resources, and you can find information and contacts at [www.aub.edu.lb/titleix](http://www.aub.edu.lb/titleix). To report an incident, contact the University’s Title IX Coordinator Trudi Hodges at 01-350000 ext. 2514, or titleix@aub.edu.lb. An anonymous report may be submitted online via EthicsPoint at [www.aub.ethicspoint.com](http://www.aub.ethicspoint.com).