**PSYC 227901 Cognitive Neuroscience**  
Boston College Summer Session 2017  
Summer 1, May 16th – June 22nd  
Tuesdays/Thursdays, 6:00-9:15pm

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**BC E-mail:** jeye@bc.edu  
**Office:** McGuinn 316  
**Office Hours:** By appointment

*Please note that this syllabus should be regarded only as a general guide to the course and is subject to change at the instructor’s discretion.

**Boston College Mission Statement**  
Strengthened by more than a century and a half of dedication to academic excellence, Boston College commits itself to the highest standards of teaching and research in undergraduate, graduate and professional programs and to the pursuit of a just society through its own accomplishments, the work of its faculty and staff, and the achievements of its graduates. It seeks both to advance its place among the nation's finest universities and to bring to the company of its distinguished peers and to contemporary society the richness of the Catholic intellectual ideal of a mutually illuminating relationship between religious faith and free intellectual inquiry.

Boston College draws inspiration for its academic societal mission from its distinctive religious tradition. As a Catholic and Jesuit university, it is rooted in a world view that encounters God in all creation and through all human activity, especially in the search for truth in every discipline, in the desire to learn, and in the call to live justly together. In this spirit, the University regards the contribution of different religious traditions and value systems as essential to the fullness of its intellectual life and to the continuous development of its distinctive intellectual heritage.

**Course Description**  
What happens in your brain when you are secretly paying attention to a conversation at the next table? How is that conversation recorded into memory? Cognitive neuroscience aims to address such questions by exploring the brain mechanisms that underlie human mental processing. This course will examine the neural basis of core cognitive processes including perception, attention, memory, action, and language (identified using techniques such as functional MRI, event-related potentials, and lesion studies). Other mind-brain topics that will be considered include hemispheric specialization, emotion, frontal lobe function, social cognition, and consciousness.

**Course Objectives**
1. The student will gain fundamental knowledge in the field of cognitive neuroscience.  
2. The student will critically read empirical journal articles.  
3. The student will propose a novel experiment in the realm of cognitive neuroscience research, and write the proposed project up using APA format.  
4. The student will demonstrate ethical knowledge pertaining to proper research practices as demonstrated by the frequent review and critique of published cognitive neuroscience research articles

**Textbooks & Readings**  
**Supplementary Material:** Other course readings, such as scientific articles and handouts, will be posted online on Canvas.
Canvas
Canvas is the Learning Management System (LMS) at Boston College, designed to help faculty and students share ideas, collaborate on assignments, discuss course readings and materials, submit assignments, and much more - all online. As a Boston College student, you should familiarize yourself with this important tool. For more information and training resources for using Canvas, click here.

Written Work
Summer Session students are expected to prepare professional, polished written work. Written materials must be typed and submitted in the format required by your instructor. Strive for a thorough yet concise style. Cite literature appropriately, using APA, MLA or CLA style per your instructor’s requirements. Develop your thoughts fully, clearly, logically and specifically. Proofread all materials to ensure the use of proper grammar, punctuation and spelling. For writing support, please contact the Connors Family Learning Center.

Attendance
Attending class is an important component of learning. Students are expected to attend all class sessions. When circumstances prevent a student from attending class, the student is responsible for contacting the instructor before the class meets. Students who miss class are still expected to complete all assignments and meet all deadlines. Many instructors grade for participation; if you miss class, you cannot make up participation points associated with that class. Makeup work may be assigned at the discretion of the instructor. If circumstances necessitate excessive absence from class, the student should consider withdrawing from the class. If a student knows that he or she will be absent on a particular day, the student is responsible for seeing the instructor beforehand to obtain the assignments for that day.

Consistent with BC’s commitment to creating a learning environment that is respectful of persons of differing backgrounds, we believe that every reasonable effort should be made to allow members of the university community to observe their religious holidays without jeopardizing their academic status. Students are responsible for reviewing course syllabi as soon as possible, and for communicating with the instructor promptly regarding any possible conflicts with observed religious holidays. Students are responsible for completing all class requirements for days missed due to conflicts with religious holidays.

Accommodation and Accessibility
Boston College is committed to providing accommodations to students, faculty, staff and visitors with disabilities. Specific documentation from the appropriate office is required for students seeking accommodation in Summer Session courses. Advanced notice and formal registration with the appropriate office is required to facilitate this process. There are two separate offices at BC that coordinate services for students with disabilities:

- The Connors Family Learning Center (CFLC) coordinates services for students with LD and ADHD.
- The Disabilities Services Office (DSO) coordinates services for all other disabilities.

Find out more about BC’s commitment to accessibility at www.bc.edu/sites/accessibility.

Scholarship and Academic Integrity
Students in Summer Session courses must produce original work and cite references appropriately. Failure to cite references is plagiarism. Academic dishonesty includes, but is not necessarily limited to, plagiarism, fabrication, facilitating academic dishonesty, cheating on exams or assignments, or submitting the same material or substantially similar material to meet the requirements of more than one course without seeking permission of all instructors concerned. Scholastic misconduct may also involve, but is not necessarily limited to, acts that violate the rights of other students, such as depriving another student of course materials or interfering with another student’s work. Please see the Boston College policy on academic integrity for more information.
Grading
Final grades will be assigned based on the total percentage achieved using the following scale: A: 93-100, A-: 90-92, B+: 87-89, B: 83-86, B-: 80-82, C+: 75-79, C: 70-74, C-: 65-69, D+: 60-64, D: 55-59, D-: 50-54, F: below 50.

The undergraduate grading system for Summer Session is as follows:
A (4.00), A- (3.67)
B+ (3.33), B (3.00), B- (2.67)
C+ (2.33), C (2.00), C- (1.67)
D+ (1.33), D (1.00), D- (.67)
F (.00)

All students can access final grades through Agora after the grading deadline each semester. Transcripts are available through the Office of Student Services.

Deadlines and Late Work
Assignments are due at the beginning of the class period on the specified dates. Late assignments will be graded accordingly.

Course Assignments
It is expected that 6-8 hours per week will be spent on out-of-class assignments. Specifically, your time will be spent completing the assigned readings, completing the research paper, and studying for exams. These items are described in detail below. Please note that some weeks will require more time and some weeks less time but the average is approximately 6-8 hours per week over the semester.

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<tr>
<th>Course Requirements</th>
<th>Percentage</th>
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<tr>
<td>Exam 1</td>
<td>25</td>
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<td>Exam 2</td>
<td>25</td>
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<td>Exam 3</td>
<td>25</td>
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<tr>
<td>Proposal of research topic</td>
<td>5</td>
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<tr>
<td>Final research paper</td>
<td>20</td>
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Required Readings: Before each lecture, students will be assigned readings from the textbook or relevant scientific articles (see Schedule of Topics and Readings below). Note that the only required textbook is the Gazzaniga et al. text. All other required readings will be posted on Canvas and/or distributed in class. To facilitate class discussion, students should arrive to class prepared to participate and ready to ask questions.

Exams: There will be 3 non-cumulative in-class exams. Question format may include multiple choice, true/false, matching, fill-in-the-blank, and short answers. All exams will be heavily based on the material covered in lecture and the assigned course readings. No make-up exams will be given, unless prearranged with the instructor.

Proposal of Research Topic: For the final research paper, students will come up with an important scientific question relating to a topic of the course that has yet to be resolved. Prior to writing the final paper described below, students will submit a paper topic proposal (1-2 pages). The proposal should review 2 or more empirical research articles and include a clear statement of purpose.

Final Research Paper: The final research paper (6-8 pages, double spaced, not including references) should include the following sections:
(1) Abstract. A brief summary of your paper, which will be distributed to the class during the final lecture.
(2) Introduction. A review of 5 or more empirical research articles on the topic in cognitive neuroscience that relates to the student’s scientific question and a statement of hypotheses.
(3) Methods/Results. Within the research topic, the students will propose a novel cognitive neuroscience experiment that would advance the field and will briefly describe the experimental design, and what they expect the results of their experiment would be.
(4) Discussion. Students will discuss any implications for their study (i.e., why is it an important question?)
(5) References. All sources must be referenced using APA format (at least 5 separate articles need to be referenced from the text and/or a database such as PubMed - the text will not be counted as a reference).
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<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Material</th>
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<tbody>
<tr>
<td>5/16</td>
<td>Tuesday</td>
<td>History of Cognitive Neuroscience &amp; Structure and Function of the Nervous System</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 1 &amp; Ch. 2</td>
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<td>5/18</td>
<td>Thursday</td>
<td>Methods of Cognitive Neuroscience</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 3</td>
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<td>5/23</td>
<td>Tuesday</td>
<td>Hemispheric Specialization</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 4</td>
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<td>5/25</td>
<td>Thursday</td>
<td><strong>Exam 1</strong></td>
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<td>5/30</td>
<td>Tuesday</td>
<td>Sensation and Perception &amp; Object Recognition</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 5 &amp; Ch. 6</td>
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<td>6/1</td>
<td>Thursday</td>
<td>Attention &amp; Control of Action</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 7 &amp; Ch. 8</td>
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<td>6/6</td>
<td>Tuesday</td>
<td>Memory</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 9</td>
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<td>6/8</td>
<td>Thursday</td>
<td><strong>Exam 2</strong></td>
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<td>6/13</td>
<td>Tuesday</td>
<td>Emotion &amp; Social Cognition</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 10 &amp; Ch. 13</td>
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<td>6/15</td>
<td>Thursday</td>
<td>Language</td>
<td>Required: Textbook: Gazzaniga et al., Ch. 11</td>
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<td>6/20</td>
<td>Tuesday</td>
<td>Cognitive Control &amp; Consciousness, Free Will and the Law</td>
<td>Required: Textbook: Gazzaniga et al, Ch. 12 &amp; Ch. 14</td>
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<td>6/22</td>
<td>Thursday</td>
<td><strong>Final Research Paper Due</strong></td>
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