

**PSYC 453 – Selected Topics in Psychology  
Developmental Cognitive Neuroscience  
Spring 2014**

**Class Location:** CAS B26

**Class Hours:** Monday Wednesday 14:00 – 15:15

**Instructor:** Tilbe Göksun

**Office Hours:** Monday Wednesday 13:00 – 14:00 or by appointment

**Office Location:** SOS Z11A

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**Office Hours:** Tuesday 9:00 – 11:00

**Office Location:** SOS B20

**Prerequisite:** PSYC 206

**Course Description and Objectives**

This seminar will provide an overview of the current research questions, methodologies, and findings from the field of developmental cognitive neuroscience. Some of the questions that will be considered in the course are: What is the nature of developmental change? How does the developing brain support underlying emergent behavior? What are the consequences of early brain injury on cognitive functions? What are the links between various cognitive functions and neurobiological substrates in neurodevelopmental disorders such as autism and Williams syndrome? During this course, special emphasis will be given to major methods used in this area, the relation of developmental cognitive neuroscience to broader scientific issues such as critical periods of development, plasticity, the modularity arguments in development, and nature-nurture debate. The implications for education and social issues will also be discussed.

**Learning Objectives**

At the end of this course, students will:

- Be able to understand the fundamentals, major concepts, theoretical perspectives, and empirical findings of neurological development
- Learn how cognitive neuroscience is studied across the lifespan
- Understand the neurological correlates of the development of cognitive processes such as language, memory, attention
- Gain an understanding of neural plasticity throughout development
- Be able to compare, discuss, criticize research findings and theories in developmental cognitive neuroscience

**Course Materials**

## **Book**

Johnson, M. H. & de Haan, M. (2011). *Developmental Cognitive Neuroscience* (3<sup>rd</sup> edition). Wiley-Blackwell.

## **Readings**

In addition to the book chapters, each week there will be readings to discuss. You are required to read the chapters in your textbook and the readings that pertain to the day's lecture *prior* to the lecture.

## **Course Assessment and Grading**

### *1. Questions and Participation*

On the selected 3 days (**February 26, March 24, April 21**), you are required to submit 2 discussion questions regarding the readings for that week. You will send your questions to your TA **by 10:00 am** of those days. Your participation to class discussion and your questions before the class time will make up **15%** of your final grade. Each time your questions and participation will be evaluated out of **5** points (5 X 3 = 15 points of your final grade).

### *2. Assignment*

There will be **one** out-of-class assignment (**April 28**). 2 papers will be available for the assignment and you will choose one of them to write a reaction paper (more information will be provided). At the due date of the assignment, we will discuss the articles and your reactions to them briefly in class. The reaction paper should be maximum 3-4 double-spaced pages and in APA format. It will count **15%** of your final grade. Details about the assignment will be given later on a separate document.

### *3. Midterm Exam*

There will be **one** midterm exam on **March 17**. The exam will be in both multiple choice and essay format, and will count **30%** of your grade. There will also be a review prior to the exam. For review session, you should come to class with your questions about the covered topic and I will also present sample questions. If you are not able to come to the exam (e.g., medical reasons), you must send me an email before exam time and provide your report of excuse. I will arrange a make-up exam time. If you do not show up in the make-up exam date without an excuse and appropriate written documentation, you will receive "0" from the exam with no exceptions.

### *4. Paper and Presentation*

As your final project, you are required to write **a review paper** on a relevant topic of developmental cognitive neuroscience. I will ask you to discuss your topic with me and with your TA by **March 10**. The paper should be based on reading articles in-depth on a chosen topic (between 5-7 articles) and analysis of them. The review paper should be 7-9 double-spaced pages and in APA format. At the end of the session, you will give a 10-minute **presentation** of your paper (**May 12 or May 14**). Details about the paper and presentation will be given later.

The paper will count **30%** of your grade. Your presentation of the paper will be evaluated out of **10** points (**10%** of your grade).

## **Grading Summary:**

<b>Questions and Participation</b>	<b>15%</b>
<b>Assignment</b>	<b>15%</b>
<b>Midterm</b>	<b>30%</b>
<b>Review Paper</b>	<b>30%</b>
<b>Presentation</b>	<b>10%</b>
<b>Total</b>	<b>100%</b>

**Grades:**

A 95-100	C+ 77-79
A- 90-94	C 73-76
B+ 87-89	C- 70-72
B 83-86	D+ 65-69
B - 80 - 82	D- 60-64      F below 60

**TENTATIVE WEEKLY CLASS SCHEDULE**

<b>Week</b>	<b>Date</b>	<b>Topics</b>	<b>Readings</b>	<b>Assignment</b>
<b>PART 1: Brain Development and Methods</b>				
1	Feb 03	Introduction to Course	* Syllabus	
	Feb 05	The Biology of Change	* Ch 1	
2	Feb 10	Methods and Populations	* Ch 2 * Munakata et al. (2004)	
	Feb 12	Methods and Populations	* Ch 2 * Casey et al. (2005)	
3	Feb 17	From Gene to Brain	* Ch 3	
	Feb 19	From Gene to Brain	* Bishop (2006)	
4	Feb 24	Building a Brain	* Ch 4	
	Feb 26	Building a Brain	* Ch 4	<b>Questions &amp; Discussion</b>
<b>PART 2: Social and Cognitive Development</b>				
5	March 03	Vision, Orienting, Attention	* Ch 5	
	March 05	Objects	* Ch 6 (pp. 105-113) * Wilcox et al. (2008)	

6	March 10	Number	* Ch 6 (pp. 113-117) * Ansari et al. (2005) * Cantlon et al. (2009)	<b>Final Paper Topic Discussion</b>
	March 12	Social World: Faces	* Ch 7	
7	March 17	Social World: Theory of Mind, Predicting Actions	* Ch 7 (pp. 140-149) * Gweon et al. (2012) * Marshall et al. (2011)	<b>Questions &amp; Discussion</b>
	March 19	Review for midterm		
8	March 24	MIDTERM		
	March 26	Learning and Memory	* Ch 8 * Bauer (2006)	
9	March 31	Prefrontal Cortex, Executive Functions	* Ch 10	
	April 2	Decision Making	* Ch 10 * Chein et al. (2011)	
10	No Class: SPRING BREAK			
<b>PART 3: Language Development</b>				
11	April 14	Language	* Ch 9 * Kuhl et al. (2013) Text	
	April 16	Language	* Ch 9 * Jasinska & Petitto (2013)	
12	April 21	Atypical Development	* Demir et al. (2010) * Leonard et al. (2011)	<b>Questions &amp; Discussion</b>
	April 23	No Class: Holiday		
13	April 28	Lateralization	* Ch 11	<b>Reaction Paper</b>
	April 30	Interactive Specialization	* Ch 12	
14	May 5	Education and Media	Thompson & Nelson (2001) Fisher et al. (2011)	
	May 7	Integration and Wrap-up	* Ch 13	
15	May 12	Class Presentations		<b>FINAL PAPER</b>
	May 14	Class Presentations		<b>FINAL PAPER</b>

### **Papers for Reading Assignment:**

1. Nelson, C. et al. (2007). Cognitive recovery in socially deprived young children: The Bucharest Early Intervention Project, *Science*, 318, 1937-1940.
2. Pasquinelli, E. (2012). Neuromyths: Why do they exist and persist? *Mind, Brain, and Education*, 6, 89-96.

### **Academic Integrity**

Students are expected to follow Koç University policy for academic conduct. Please review the information provided on the University main homepage from the following links:

**Rules and Regulations:** <http://dos.ku.edu.tr/regulations>

**Classroom Code of Conduct:** <http://vpaa.ku.edu.tr/academic/classroom-code-of-conduct>

**Student Code of Conduct:** <http://vpaa.ku.edu.tr/academic/student-code-of-conduct>

### **Academic Dishonesty**

#### **Koç University Statement on Academic Honesty with Emphasis on Plagiarism**

Koç University expects all its students to perform course-related activities in accordance with the rules set forth in the Student Code of Conduct (<http://vpaa.ku.edu.tr/academic/student-code-of-conduct>). Actions considered as academic dishonesty at Koç University include but are not limited to cheating, plagiarism, collusion, and impersonating. This statement's goal is to draw attention to cheating and plagiarism related actions deemed unacceptable within the context of Student Code of Conduct:

All individual assignments must be completed by the student himself/herself, and all team assignments must be completed by the members of the team, without the aid of other individuals. If a team member does not contribute to the written documents or participate in the activities of the team, his/her name should not appear on the work submitted for evaluation.

**Plagiarism** is defined as 'borrowing or using someone else's written statements or ideas without giving written acknowledgement to the author'. Students are encouraged to conduct research beyond the course material, but they must not use any documents prepared by current or previous students, or notes prepared by instructors at Koç University or other universities without properly citing the source. Furthermore, students are expected to adhere to the Classroom Code of Conduct (<http://vpaa.ku.edu.tr/academic/classroom-code-of-conduct>) and to refrain from all forms of unacceptable behavior during lectures. Failure to adhere to expected behavior may result in disciplinary action.

There are two kinds of plagiarism: Intentional and accidental. Intentional plagiarism (Example: Using a classmate's homework as one's own because the student does not want to spend time working on that homework) is considered intellectual theft, and there is no need to emphasize the wrongfulness of this act. Accidental plagiarism, on the other hand, may be considered as a 'more acceptable' form of plagiarism by some students, which is certainly not how it is perceived by the University administration and faculty. The student is responsible from properly citing a source if he/she is making use

of another person's work. For an example on accidental plagiarism, please refer to the document titled "An Example on Accidental Plagiarism".

If you are unsure whether the action you will take would be a violation of Koç University's Student Code of Conduct, please consult with your instructor before taking that action.

### **An Example on Accidental Plagiarism**

This example is taken from a document prepared by the City University of New York. The following text is taken from Elaine Tyler May's *'Myths and Realities of the American Family'*:

"Because women's wages often continue to reflect the fiction that men earn the family wage, single mothers rarely earn enough to support themselves and their children adequately. And because work is still organized around the assumption that mothers stay home with children, even though few mothers can afford to do so, child-care facilities in the United States remain woefully inadequate."

Below, there is an excerpt from a student's homework, who made use of May's original text:

"As Elaine Tyler May points out, "women's wages often continue to reflect the fiction that men earn the family wage" (588). Thus many single mothers cannot support themselves and their children adequately. Furthermore, since work is based on the assumption that mothers stay home with children, facilities for day care in this country are still "woefully inadequate" (May 589)".

You may think that there is no plagiarism here since the student is citing the original author. However, this is an instance of accidental plagiarism. Although the student cites May and uses quotation marks occasionally, the rest of the sentences, more specifically the following section: "Thus many single mothers cannot support themselves and their children adequately. Furthermore, since work is based on the assumption that mothers stay home with children, facilities for day care in this country are still "woefully inadequate." (May 589)" almost exactly duplicates May's original language. So, in order to avoid plagiarism, the student either had to use quotation marks for the rest of the sentences as well, or he/she had to paraphrase May's ideas by using not only his/her own words, but his/her own original ideas as well. You should keep in mind that accidental plagiarism often occurs when the student does not really understand the original text but still tries to make use of it. Understanding the original text and understanding why you agree or disagree with the ideas proposed in that text is crucial both for avoiding plagiarism and for your intellectual development.

Reference(s):

*Avoiding and Detecting Plagiarism: A Guide for Graduate Students and Faculty.*  
The Graduate Center. City University of New York, 2012. Web.  
<[http://www.gc.cuny.edu/CUNY\\_GC/media/CUNY-Graduate-Center/PDF/Publications/AvoidingPlagiarism.pdf](http://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Publications/AvoidingPlagiarism.pdf)>