



# USC

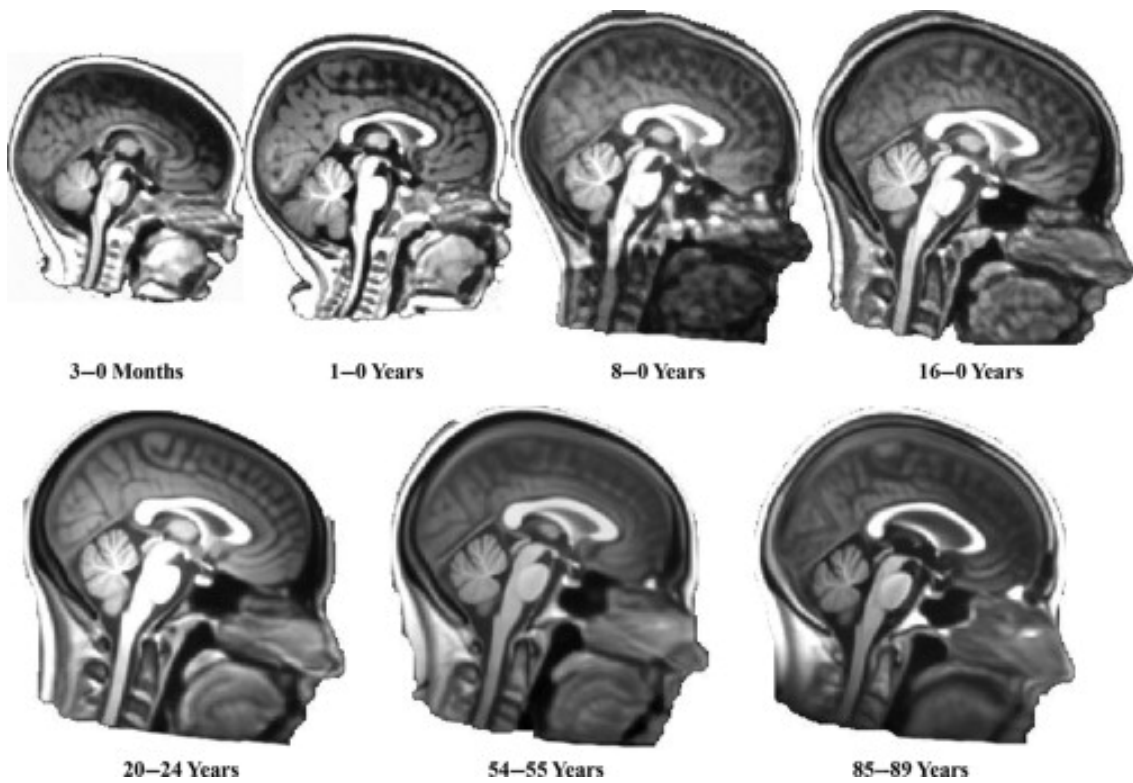
## Developmental Neuroscience of Human Behavior PSYC 499

**Instructor: Santiago Morales**

**Contact Info:**

I am most accessible via email and will usually respond within 24 hours.

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Richards & Xie, 2015

## **Course Description**

This course explores the fascinating and complex puzzle that is the developing human brain. In this lecture- and discussion-based course, we will explore the central concepts of social, cognitive, and emotional development with an emphasis on the role neuroscience can play in raising and answering theoretical and applied developmental questions such as: How do early experiences modify the brain? What makes each of us unique? Can neuroscience help us determine who will develop psychopathology? When is an adolescent an adult?

The course will cover development from infancy through adolescence with a focus on the biological underpinnings that support social, emotional, and cognitive development. We will discuss theoretical and empirical work that encompasses both typical and atypical development and emphasize a translational approach between basic developmental science and clinical applications. The intention is to (a) lay a foundation so that you may comprehend and conduct research in social, cognitive, and emotional development and (b) introduce you to different neuroscience perspectives and approaches used to study development. This course will be presented from the perspective of developmental psychology and will focus primarily on the current state of research knowledge (i.e., empirical evidence). The course will emphasize class participation and you will have multiple opportunities to engage with the material in written and spoken form.

## **Learning Objectives**

The main objectives of the class are to:

- 1) Gain a basic understanding of the major theoretical approaches that underlie the study of developmental neuroscience of human behavior.
- 2) Obtain a basic understanding of the neuroscience tools and methods that can be used to answer current developmental questions.
- 3) Improve your critical thinking skills by constructing hypotheses and opinions as you read the class materials and learn to find empirical support for your hypotheses.
- 4) Demonstrate this knowledge through clear and informative writing, class discussions, and oral presentations.

**Prerequisite(s):** Introduction to Psychology (PSYC 100), but please contact me if you want to take the class and do not have the prerequisite.

**Recommended Preparation:** Developmental Psychology (PSYC 336) and a course in neuroscience or biological bases of human behavior.

## **Required Readings and Supplementary Materials**

There is no textbook for this course. All course materials (e.g., syllabus, assignment instructions) and readings (i.e., primary source empirical readings) will be posted on Blackboard. You will also be submitting your assignments using Blackboard. This will allow us to share/read/edit each other's work and to have a paperless classroom.

All course communication will be conducted via Blackboard.

## **Description and Assessment of Assignments**

The format of the course will be lecture, discussion, and group activities, which should then be reflected in your writing. As such, you are expected to be an active partner in the learning process by reading assigned material, completing written projects, class presentations, and very

importantly, participating in class discussion (e.g., asking questions, making comments, noting similarities and differences across reading materials). Lectures are designed to help you make sense of the readings. You are expected to attend all classes and to actively participate in class discussions. Below are descriptions of the main assessments and assignments.

### **1. Weekly Thought/Reaction Papers (40%)**

There will be 10 short papers (1-2 pages), one completed for each week of the course when readings are assigned. However, you only need to submit 8 short papers. If you submit all 10 papers, the highest 8 grades will be selected – or you can choose to skip 2 papers. Papers are due **BEFORE** the class when that topic will be discussed. These papers are due the day before class (see schedule for writing weeks). The purpose of these papers is to provide you with the opportunity to:

1. Demonstrate your understanding of the readings
2. Integrate material from lecture, discussions, and the original literature
3. Think critically about the material
4. Provide you with an opportunity to express your thoughts and opinions

These papers are worth 5% each for a total of 40% of your grade. Late papers will be accepted but at the cost of 10% reduction in points for each day late. We will have an Assignment Submission on Blackboard for you to submit your papers. There are example papers posted on Blackboard, use these as a guide for preparation. Papers will be graded on a scale from 1-10. Papers that simply summarize the assigned articles will receive a maximum of 7 points on the papers (but usually less than that). In order to receive an 8, 9 or 10, you must incorporate material that was not assigned and/or integrate readings from past weeks in the course. You can also incorporate your own research and practical experiences. Again, the goal is to demonstrate your ability to communicate your critical and conceptual thinking. Moreover, you can (and should) use the topics and issues raised in your papers for in-class discussion.

### **2. In-class participation (10%)**

The format of this class will largely be class discussion. Therefore, your participation in discussions each day is expected. Simply attending class is not enough. There will be a weekly opportunity for smaller group discussions and exercises that allow for a variety of ways to participate. The easiest way to participate will be to bring questions to class for discussion. These questions will likely emerge from the reading and your thought papers.

Participation in discussion and activities will be factored into your final grade. Participation accounts for 10% of the grade. At each class, there will be a small deliverable (e.g., “one-minute paper”) to help keep track of attendance. I will let you know where you stand on class participation half way through the semester.

### **3. Leading class discussion (10%)**

At the beginning of the semester, students will be divided into small groups. Each group will help me lead the class discussion once a semester. As part of the leadership process, the groups should enrich the discussion by bringing in additional readings and research to class—even better, if the research can be linked to your own interests. This way, the discussion enhances, rather than repeats, the discussion that is led by the professor. I will assign the groups based on interests in topics. The week before you are scheduled to lead class discussion, you will meet with me to get feedback on your planned discussion points/questions and additional readings.

### **4. Final Project: Paper and Presentations (40%)**

You will be asked to complete a project as your final exam. You will be asked to present your project during class (15-minute presentations) and submit a paper (at least 10 pages). These projects will be worth 40% of your grade based on a combination of the presentation (10%), the first draft of the paper (10%), and the final draft of the paper (20%). Projects may take a variety of forms (e.g., research/literature review, research proposal), but must be on the topic of developmental neuroscience of human behavior. Your

project topic must be approved early in the semester. Your topic will likely need to be modified after receiving feedback from me so you should start thinking about topics early. A first/rough draft of the paper will be due a month before the presentations (see the schedule). A rubric that provides specific requirements for each project will be posted on Blackboard and we will hold a session during class to answer your questions.

**Extra credit**

1.5% will be given to students who complete the “About me survey.”

1.5% will be given to all students if 85% of the class responds to USC’s learning experience evaluation at the end of the semester.

**Grading Breakdown**

Assignment	Points	% of Grade
Weekly Thought Papers	40	40%
In-class Participation	10	10%
Leading Discussion	10	10%
Final Project	40	40%
First paper draft	10	10%
Presentation	10	10%
Final Paper	20	20%
<b>TOTAL</b>	<b>100</b>	<b>100%</b>

**Grading Scale**

Course final grades will be determined using the following scale

- A 93-100
- A- 90-92
- B+ 87-89
- B 83-86
- B- 80-82
- C+ 77-79
- C 73-76
- C- 70-72
- D+ 67-69
- D 63-66
- D- 60-62
- F 59 and below

**Assignment Rubrics**

The rubrics for the different assignments will be uploaded as separate documents to Blackboard.

**Assignment Submission Policy**

Assignments will be submitted in Blackboard. More details TBD.

**Grading Timeline**

Grading and feedback on assignments will be provided within a week.

## Tentative Course Schedule: A Weekly Breakdown

Note: Some of the specific readings may change, but the topics and assignments should stay the same.

Week Date	Topic	Readings	Assignment Due
<b>1</b> 8/24	Theoretical Framework and Concepts		
<b>1</b> 8/24	Developmental Neuroscience Methods: Part 1	Kalin 1993	"About me" survey
<b>2</b> 8/31	Developmental Neuroscience Methods: Part 2	de Haan 2014	
<b>2</b> 9/2	Basics of Neuroscience and Prenatal Brain Development	Nowakowski & Hayes 2002	
<b>3</b> 9/7	Developmental Mechanisms: Genetics & the Environment	Caspi et al 2003	
<b>3</b> 9/9	Developmental Mechanisms: Neuroplasticity and Epigenetics	Werker & Hench 2015	
<b>4</b> 9/14	Brain Anatomy & its development	Giedd et al., 2015	Thought paper + Final project topic
<b>4</b> 9/16	Brain Function & its development	Gabard-Durnam et al., 2014	
<b>5</b> 9/21	Early socioemotional development: Temperament	Tang et al., 2020	Thought paper
<b>5</b> 9/23	Early socioemotional development: Attachment & Parenting	Levy et al., 2017	
<b>6</b> 9/28	Thinking about others: Action understanding	Rizzolatti et al., 2016	Thought paper
<b>6</b> 9/30	Thinking about others: Theory of mind and empathy	Mahy et al., 2014	
<b>7</b> 10/5	Self-Regulation: Cognitive Control	Casey et al., 2011	Thought paper
<b>7</b> 10/7	Self-Regulation: Emotion Regulation	Gee et al., 2013a	
<b>8</b> 10/12	Puberty and Adolescence: Risk Taking & Peer Context	Chein et al., 2011	Thought paper
<b>8</b> 10/14	Fall Recess: No class		
<b>9</b> 10/19	Early Adversity: Deprivation	Gee et al., 2013b	Thought paper
<b>9</b> 10/21	Early Adversity: Abuse	McLaughlin et al 2020	
<b>10</b> 10/26	Internalizing: Anxiety	LeDoux & Pine 2016	Thought paper + First Draft
<b>10</b> 10/28	Internalizing: Depression	Hanson et al., 2015	
<b>11</b> 11/2	Externalizing: Aggression, Conduct Problems, and Psychopathy	Taber-Thomas et al., 2014	Thought paper

<b>11</b> 11/4	Externalizing: Substance Use	Meier et al., 2012	
<b>12</b> 11/9	Cultural Neuroscience	Immordino-Yang & Yang, 2017	Thought paper
<b>12</b> 11/11	Law Implications	Cohen et al 2016	
<b>13</b> 11/16	Clinical Implications: Early Identification	Hazlett et al., 2017; Gabard-Durnam et al., 2020	Thought paper
<b>13</b> 11/18	Clinical Implications: Intervention and Prevention	Holtzheimer et al., 2017; Mishra et al., 2020	
<b>14</b> 11/23	Final Presentations		
<b>14</b> 11/25	Thanksgiving Holiday: No class		
<b>15</b> 11/30	Final Presentations		
<b>15</b> 12/2	Final Presentations		
<b>16</b> 12/7	Working on Final Paper		
<b>16</b> 12/9	Working on Final Paper		Final Paper Due (12/9)

## Statement on Academic Conduct and Support Systems

### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

### COVID-19 Policy:

Students are expected to comply with all aspects of USC’s COVID-19 policy. Failure to do so may result in removal from the class and referral to Student Judicial Affairs and Community Standards.

### Support Systems:

*Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. [engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

*National Suicide Prevention Lifeline – 1 (800) 273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

*Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [engemannshc.usc.edu/rsvp](http://engemannshc.usc.edu/rsvp)

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: [sarc.usc.edu](http://sarc.usc.edu)

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. [equity.usc.edu](http://equity.usc.edu)

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. [studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. [dsp.usc.edu](http://dsp.usc.edu)

*USC Support and Advocacy (USCSA) – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. [studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. [diversity.usc.edu](http://diversity.usc.edu)

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. [emergency.usc.edu](http://emergency.usc.edu)

*USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.*

Provides overall safety to USC community. [dps.usc.edu](http://dps.usc.edu)