Syllabus
PSYC23: Developmental Psychobiology

Course Meetings: Thursdays, 1:00 – 3:00 pm
Course Location: Science Wing, Room SW 143

Instructor: David W. Haley
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Office Hours: Tuesdays, 12:00 – 1:00 pm

Office Hours: TBA

Office Hours: Fridays, 11:00 am – 12 pm

Course Description

This course will provide an overview of the interplay between psychology and biology in humans and animals and will consider how social and biological mechanisms contribute to mental and physical health. The course examines the reciprocal interactions among experience, genes, hormones, brain, and behavior in humans and in other species across the lifespan. In this course you will learn about (1) developmental systems theory, (2) neuroendocrine foundations of social bonding, (3) the reciprocal interactions between children and parents, (4) the psychobiology and inherent stress of parenting, (5) the development and evolution of the stress system and its role in social and cognitive development, and (6) the role of stress in memory. The course will provide a cutting-edge research perspective on several interdisciplinary topics in the field of developmental psychobiology.

Evaluation	**Date(s)**	**Weight**
Reviews (two)	February 3 & March 17	20%
Online participation	Weekly	10%
Mid-term exam	Feb. 12	30%
Final exam	Exam week	40%
Extra Credit	TBA	2%

Schedule and Readings

Meetings	Topics	Description	Readings	Week
Jan 13	Introduction I	Overview of the course material, including rationale, methods, and key questions that will be addressed over course of the semester	Michel (1999)	1
Jan 20	Introduction II	History of developmental systems and major questions in the field of developmental psychobiology	Lickliter & Honeycutt (2010)	2
Jan 27	Bonding I	What are the neuroendocrine processes that mediate social affiliation and bonding? How do you create an emotional bond?	Bales & Carter (2009)	3
Feb 3	Bonding II	An introduction to the neurobiology of attachment. Why do children prefer their parents?	Hofer & Sullivan (2008)	4
Feb 10	**Mid-term Exam**	**An optional review will be provided in class. Exam date and location TBA.**	--------	**5**
Feb 17	Stress I	What are the autonomic components of the stress system, and how did they evolve? How does autonomic activity affect learning and social behavior? How do we measure sympathetic and parasympathetic activity?	Sapolsky (2003)	6
Feb 24	**Reading Week**		----------	7
March 3	Stress II	What is stressful about parenting? What motivates parents to act and think the way they do? What aspects of parenting are universal?	Gunnar (2008)	8
March 10	Parenting I	A focus on the molecular mechanisms that contribute to the transmission and long-term effects of attachment. How do parents influence children?	Champagne (2010)	9
March 17	Parenting II	The many neurobiological changes parents undergo and the impact of these changes on cognition and behavior	Kinsley & Lambert (2006)	10
March 24	*No class*	*(Professor is out of town for a conference)*	Carey (2008)	11
March 31	Memory	Stress and memory. The role of stress hormones in memory across the lifespan.	Lupien et al. (2005)	12
April 7	**Final Exam**	**An optional review will be provided in class. Exam date and location TBA.**	--------	**13**

Readings

Week 1

Michel, G. F. (1999). *Developmental Psychobiology: An Interdisciplinary Science.* Cambridge, Mass.: The MIT Press. Selections from Chapter 1: pages 1-24, 37-46.

Week 2

Lickliter, R. & Honeycutt, H. (2010). Rethinking epigenesis and evolution in light of developmental science. In *Oxford Handbook of Developmental Behavioral Neuroscience*, M. S. Blumberg, J. H. Freeman, & S. R. Robinson (Eds.). Oxford: Oxford University Press. Chapter 3: pages 30-47.

Week 3

Bales, K. L. & Carter, C. S. (2009). Neuroendocrine mechanisms of social bonds and child-parent attachment from the child's perspective. In M. De Haan & M. R. Gunnar (Eds.), *Handbook of Developmental Social Neuroscience* (New York: Guilford), pages 246-264.

Week 4

Hofer, M. A. & Sullivan, R. M. (2008). Toward a neurobiology of attachment. In C. A. Nelson and M. Luciana (Eds.), *Handbook of Developmental Cognitive Neuroscience,* Cambridge, Mass.: The M.I.T. Press.

Week 6

Sapolksy, R. (2003). Taming stress. *Scientific American,* pages 86-95.

Week 8

Gunnar, M. R. (2008). Early care experiences and HPA axis regulation in children: a mechanism for later trauma and vulnerability. *Progress in Brain Research* 167, pages 137-147.

Week 9

Champagne, F. A. (2010). Epigenetic influence of social experience across the lifespan. *Developmental Psychobiology,* 52: pages 299-311.

Week 10

Kinsley, C. H. & Lambert, K. G. (2006). The maternal brain. *Scientific American,* pages 72-79.

Week 11

Carey, B. (Sept 5, 2008). For the brain, remembering is like reliving. *New York Times:* http://www.nytimes.com/2008/09/05/science/05brain.html?ex=1378699200&en=5cba4dad4056c7c4&ei=5124&partner=permalink&exprod=permalink

Week 12

Lupien, S. J., Fiocco, A., Wan, N., Maheu, F., Lord, C., Schramek, M., Tu, M. T. (2005). *Stress hormones and human memory function across the lifespan.* Psychoneuroendocrinology 30, pages 225–242.

Supplemental Readings

Feldman (2007). Parent-infant synchrony. *Current Directions in Psychological Science*, 16, pages 340-345.

Hofer, M. A. (2006). Psychobiological roots of early attachment. *Current Directions in Psychological Science*, 15, pages 84-88.

Parker-Pope, T. (September 5, 2008). Delivery Method Affects Brain Response to Baby's Cry. Well blog, *New York Times*: http://well.blogs.nytimes.com/2008/09/05/delivery-method-affects-brain-response-to-babys-cry/

Reviews: Each student will be responsible for writing reviews of two of the weekly reading assignments (not including the occasional *New York Times* articles). You may choose any of the weekly reading for your reviews. The goal of the written reviews is to provide both an interesting summary of *and* a critical reflection on the chosen readings. Each review should consist of two double-spaced pages. The first page should provide the summary component (weighted 50%), and the second page should consist of the critical reflection component (weighted 50%). The summary component should be relatively straightforward, although figuring out how to summarize the most interesting and essential points in a single page requires some talent and time. The critical reflection component is more challenging and will require more thought and time than the summary. One way to begin to reflect critically on a reading is to consider the following questions: 1) What is the reading trying to demonstrate (main ideas, assumptions, models, methods)? 2) How convincing is it (evidence, arguments used, logic, consistency)? 3) What significance does it have to society (what are its applications, usefulness, and ethical implications)? *Reviews are due at the end of class.* Reviews will not be accepted late unless you can provide me with a UTSC medical note.

Online participation: We will hold an online discussion forum on Blackboard. The goal of the discussion is for students to raise and answer important questions that relate to the readings and lectures. Ideally, students will alternate between raising and answering questions. Comments are also encouraged; these may include discussions of real-life applications of the material and of additional studies that support existing or alternative understandings. Each week the TAs will report to me some of the major points that have been raised that week in the Blackboard discussion, and I will briefly summarize them in class to provide feedback on and address questions raised there. These in-class reviews will provide an opportunity to raise new questions based on the readings and lecture, which in turn should stimulate further discussion online. To participate online, you will need to be registered on Blackboard. To receive full credit for participation, each student should plan to post every week.

Midterm and Final Exams: The midterm and final exams will consist of True/False and multiple choice questions along with a few short answer and long essay questions. Practice questions for the exam will be posted on Blackboard.

Extra Credit (up to 2%): Generating your own exam questions and preparing answers for them is a good way to learn the course material, and some of the best questions for exams come from students. Accordingly, from anyone who would like extra credit, I will accept five exam questions, each of which should have a ¼- to ½-page answer; these questions must be received by me no later than one week prior to the midterm or final exam. For more information about this option please speak a TA. I will grant up to (and a maximum of) 2% extra credit to students who complete these assignments.

Course Web Site: I will make the syllabus and all readings, lecture notes, announcements, and exam review materials available on the course Web site (log in to the U of T Blackboard portal at https://weblogin.utoronto.ca/). Please check this Web site regularly for announcements and messages. Also, please ensure that your current e-mail address is correctly linked to your Blackboard account.

Getting Help with Course Materials: If your question is not answered here in this syllabus or on the course Web site, you may post the question in the online discussion forum (on Blackboard; see above), bring the question to the TAs' weekly office hours, or discuss it with me during my office hours. You may also send an email to one of our TAs, but please allow *two working days' time* for a reply. Major questions relating to course content can be addressed in far greater depth in person.

Developmental Psychobiology Tutorials: Because this course covers material on both psychological development and biology, we will hold 3 or 4 in-class biology tutorials that will be designed to highlight key material you will need to master concerning genes, hormones, and neurotransmitters. The biology tutorials will be led by the TAs based on material discussed in lecture and in the readings.

Exams: Course requirements include two cumulative exams: one mid-term exam and one final exam. The mid-term exam is worth 30% of your total course grade, the final exam worth 40%. I will post short exam review sheets and sample test questions on the course Web site at least a week before the exams. Each exam will comprise approximately 75% multiple-choice questions and 30% short answer questions and will cover reading and lecture materials.

Missed Exams: If you provide valid, verifiable medical documentation on a UTSC Student Medical Certificate that documents your reason for missing the mid-term exam, I will re-weight your final exam so that it is worth 60% instead of 30%. Except in the case of an unforeseen, same-day emergency, you must notify me or one of the TAs more than 24 hours before the start of the midterm exam in order to be eligible for this re-weighting. If you miss the final exam, the procedure is different, and you must contact the UTSC Registrar's Office; professors and TAs are not authorized to negotiate changes to the final exam schedule. Please consult the university calendar for more information.

Access*Ability:* Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Access*Ability* Services Office as soon as possible. I will work with you and Access*Ability* Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC

Access*Ability* Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Academic Integrity: Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offenses include, but are not limited to:

In papers and assignments:
-Using someone else's ideas or words without appropriate acknowledgement.
-Submitting your own work in more than one course without the permission of the instructor.
-Making up sources or facts.
-Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:
-Using or possessing unauthorized aids.
-Looking at someone else's answers during an exam or test.
-Misrepresenting your identity.

In academic work:
-Falsifying institutional documents or grades.
-Falsifying or altering any documentation required by the University, including (but not limited to) doctors' notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see http://www.utoronto.ca/academicintegrity/resourcesfor students.html).