University of Waterloo
Department of Psychology
Psych 335: Developmental Neuropsychology
Spring 2014
Wednesdays & Fridays, 11:30 – 12:50 pm, PAS 2083

Instructor and T.A. Information

Instructor: Tara McAuley
Office: PAS 3016
Office Phone: 519-888-4567 x31343
Office Hours: Wed and Fri from 1 – 2:30 or by appointment
Email: tmcauley@uwaterloo.ca

Note: I will respond within 24 hours to e-mails and phone calls that are received during the weekday (Mon-Fri) only. I generally do not respond to e-mail and voice mail on the weekend (Sat-Sun).

T.A.	Ami Rints	Melissa Meade
Email	arints@uwaterloo.ca	mmeade@uwaterloo.ca
Office	TBA on Learn	TBA on Learn
Office Hours	TBA on Learn	TBA on Learn

Course Description

Developmental neuropsychology is a field in which brain-behaviour relationships are examined in the context of typical and atypical development. This course will focus on the structural development of the brain, the emergence of functional brain systems, and the neuropsychological underpinnings of childhood brain disorders. Emphasis will be placed on the integration of theoretical perspectives, empirical research, and clinical practice.

Course Goals and Learning Outcomes

Upon completion of this course, students should be able to:

A. Identify historical events that gave rise to the field of clinical neuropsychology in general and developmental neuropsychology in particular
B. Describe methods used in developmental neuropsychological research and practice
C. Identify the stages of brain development, major subdivisions of the brain, and specialized brain circuits that support neuropsychological functions
D. Identify the neural, cognitive, and behavioural sequelae of brain-based disorders of childhood
E. Understand the theoretical basis for different approaches to neuropsychological rehabilitation with a developing population

Required Text

Unfortunately, the field of developmental neuropsychology is lacking a textbook that provides a comprehensive foundation of brain-behaviour relationships during development and a description of how these relationships may be altered in brain-based disorders of childhood. Rather than require that students purchase multiple texts, which I believe would be prohibitively expensive, readings for this course have been selected from multiple sources and are compiled in a custom course pack. This course pack is available for purchase at the UW Book Store and is required for

the course. The custom course pack and a supplementary brain atlas are also available on reserve at the UW Porter library (1 day loan).

Course Requirements and Assessment

Your grade will be based on the points you accrue on 3 out of 4 tests, a final paper, and optional bonus credit. A large amount of information is presented in this course, which places heavy demands on rote memorization and higher-level critical thinking. As such, tests are scheduled approximately every 3 weeks to encourage students to stay on top of material and to reduce the amount of material covered on any one test. The break-down of grades is as follows:

Assessment	Date of Evaluation	Weighting
Test 1	May 28	25%
Test 2	June 18	25%
Test 3	July 9	25%
Test 4	July 25	25%
Final Paper	July 30	25%
Bonus Credit	July 30 (at the latest)	3.5%
Total (based on 3 out of 4 test scores)		103.5%

Tests

Tests will be based on assigned readings and lecture material and will consist of multiple choice and short answer questions. The questions will require knowledge of basic facts and the ability to apply this knowledge to real-world situations. Please note that only the 3 highest test scores are counted toward the final grade (i.e., your lowest test score is dropped). HOWEVER, this only applies to students who write all 4 tests. In other words, students who write only 3 tests do not have the option of dropping their lowest test score and all 3 tests will be factored into their final grade. For this reason, it is to the student's advantage to write all 4 tests. THERE ARE NO MAKE-UP DATES FOR MISSED TESTS IN THIS COURSE.

Final Paper

In lieu of a final exam, a final paper will require students to integrate knowledge acquired throughout the course. This assignment should be uploaded to the Dropbox on Learn prior to the start of the last class (i.e., before 11:30 on July 30). Late assignments will only be accepted from students in extenuating circumstances and with appropriate documentation provided that they contact the instructor no later than 48 hours after the due date. If no contact is made, a mark of 0 will be given for the assignment. If a student anticipates being absent from class on the assignment due date, the student should submit his/her assignment to the Dropbox beforehand.

Plagiarism detection software (Turnitin) will be used to verify that use of all materials and sources is documented. Students who do not want to have their assignment screened by Turnitin may submit their assignment directly to the instructor along with hard copies of cited material in which cited information is highlighted. Plagiarism is a serious academic offence. Assignments that are plagiarized may, at my discretion, receive a grade of 0. To avoid potential problems, please familiarize yourselves with plagiarism and make sure to appropriately cite all ideas that are not your own. Refer to: www.lib.uwaterloo.ca/ait/purchase.html.

Bonus Credit

Students may earn a bonus grade of up to 3% to a maximum final grade of 100% (i.e., it is not possible to earn more than 100% in the course). Bonus credit may consist of any combination of the following:

1. Syllabus Quiz. Prior to Test 1, students may take a syllabus quiz for 0.5% bonus. This will be discussed further in class.

2. Create Test Questions. Prior to each test, students may submit multiple-choice questions that are based on the readings to the dropbox on Learn. Students will receive 0.5% bonus for each question that is used on a test, to a maximum of 1% bonus.

3. Participation in Psychology Research. Research participation is coordinated by the Research Experiences Group (REG; see REG Participants' Homepage). Psychology students may volunteer as research participants in lab and/or online studies conducted in the Department of Psychology. Participation enables students to learn first-hand about psychology research and related concepts. Many students report that participation in research is both an educational and interesting experience. Please be assured that all Psychology studies have undergone prior ethics review and clearance through the Office of Research Ethics. To maximize the educational benefits of participating in research, students will receive feedback information following their participation in each study detailing the following elements:

- Purpose or objectives of the study
- Dependent and independent variables
- Expected results
- References for at least two related research articles
- Provisions to ensure confidentiality of data
- Contact information of the researcher should the student have further questions about the study
- Contact information for the Director of the Office of Research Ethics should the student wish to learn more about the general ethical issues surrounding research with human participants, or specific questions or concerns about the study in which s/he participated.

Participation in LAB studies is worth 0.5% credits for each 30-minutes of participation. Participation in ONLINE studies is worth .25% credits for each 15-minutes of participation. Researchers will record student's participation and will advise the course instructor of the total credits earned by each student at the end of the term. Students in this course may earn up to 2% bonus credit via research participation.

Study scheduling, participation and grade assignment is managed using the SONA online system. All students enrolled in this course have been set up with a SONA account. You must get started early in the term. INSTRUCTIONS/DATES/DEADLINES: How to log in to Sona and sign up for studies. Please do not ask the REG Coordinator for information unless you have first thoroughly read the information provided on this website.

4. Article Review. Students are not required to participate in research, and not all students wish to do so. As an alternative, students may opt to gain research experience by writing short reviews (1½ to 2 pages) of empirical articles that are relevant to the course. Each review counts as 1%. To receive credit, you must follow specific guidelines. The article review must:

- Be based on a study that has a developmental focus (e.g., including child and/or adolescent participants, or examining a phenomenon that is relevant to development)
- Be selected from one of the following publications: Developmental Neuropsychology, Journal of the International Neuropsychological Society, Neuropsychologia, or Archives of Clinical Neuropsychology

- Identify the title, author(s), source and date of the article. A pdf of the article must be attached to your review.
- Identify the psychological concepts in the article and critically evaluate the application or treatment of those concepts. You may find, for example, misleading headings, faulty research procedures, alternative explanations that are ignored, failures to distinguish factual findings from opinions, faulty statements of cause-effect relations, errors in reasoning, etc. Provide examples whenever possible.
- Be submitted to course dropbox on Learn on or before the last day of lecture (July 30). Late submissions will not be accepted.

Roles and Responsibilities

I will be available outside of class, either during office hours or at another mutually convenient time, to address questions that students may have pertaining to course content, course requirements, or their progress in the course. TAs will be available outside of class to review tests (this will typically be done in the 2 weeks after test grades have been posted to Learn) and to help students with the final written assignment. Specific TA hours will be posted on Learn. You can also contact TAs to meet at another mutually convenient time if their hours do not work for you.

Though attendance is not mandatory, it is strongly recommended that students attend lectures as they contain information that will not be covered in the readings. Slides will be posted to Learn before each class, but are intended to serve as a framework for note-taking (not as a substitute for attendance). Students are encouraged to ask questions when material is unclear – either by asking in class or by sending me an e-mail afterward. I will repost questions anonymously to Learn for the benefit of all students in the course (if you have a question, it is very likely that your peers do as well).

Electronic Device Policy

Research tells us that students are better able to retain information that is presented in lecture when they hand-write lecture notes and are not tempted by potential sources of distraction (e.g., the internet). For this reason, I believe that it is preferable to attend lectures without phones, notebooks, laptops, etc. However, I also appreciate that this is my preference and that most students will bring such devices to class. I do not mind students using these devices for things that have no bearing upon the lectures provided that they do not cause a distraction to me or to other students in the lecture hall. I also request that students turn cell phones off during lectures and avoid chatting with their neighbours, the latter of which is very noticeable – and distracting – from my vantage point at the front of the lecture hall.

Course Outline

Date	Topic	Readings
May 7	Course overview	
May 9	History of the field and methods	Johnson, M.H. (2011). Developmental cognitive neuroscience: An introduction (pp. 17-30).
May 14	Brain development I: Structural brain development	Anderson, A., Northam, E., Hendy, J., & Wrennall, J. (Eds.). (2001). Developmental neuropsychology: A clinical approach (pp.39 – 68).
May 16		
May 21	Brain development II: The specializing brain	Johnson, M. (2001). Functional brain development in humans. Nature Reviews Neuroscience, 2, 475-483.

Date	Topic	Readings
May 23	Early brain insult and recovery	Anderson, A., Northam, E., Hendy, J., & Wrennall, J. (Eds.). (2001). Developmental neuropsychology: A clinical approach (pp.103-124).
May 28	**TEST 1**	
May 30	Intelligence	
June 4	"What" and "Where" Visual Functions and Motor Control	Atkinson, J., & Nardini, M. (2008). The neuropsychology of visuospatial and visuomotor development. In J. Reed & J. Warner-Rodgers (Eds.), Child neuropsychology: Concepts, theory, and practice (pp.183-217).
June 6	Attention	Nelson, C.A., de Haan, M., & Thomas, K.M. (Eds.). (2006). Neuroscience of cognitive development: The role of experience and the developing brain (pp. 154-158).
June 11	Memory	Nelson, C.A., de Haan, M., & Thomas, K.M. (Eds.). (2006). Neuroscience of cognitive development: The role of experience and the developing brain (pp. 71-91).
June 13	Language	Hoover, J.R., Sterling, A.M., & Storkel, H.L. (2011). Past, present, and future of pediatric neuropsychology. In A. Davis (Ed.), Handbook of pediatric neuropsychology (pp.71-78).
June 18	**TEST 2**	
June 20	Social Cognition	Cadinu, M.R., & Kiesner, J. (2000). Children's development of a theory of mind. European Journal of Psychology of Education, 15(2), 93-111.
June 25	Executive Functions	Zelazo, P.D., & Muller, R. (2011). Executive function in typical and atypical development. In U. Goswami (Ed.), The Wiley-Blackwell handbook of childhood cognitive development, Second edition (pp.574-603).
June 27	Feotal Alcohol Exposure	Mattson, S.N, & Vaurio, L. (2010). Fetal alcohol spectrum disorders. In K.O. Yeates, M.D. Ris, H.G. Taylor, & B.F. Pennington. (Eds.). Pediatric neuropsychology: Research, theory, and practice (pp.265-293).
July 2	Congenital Hypothyroidism	Rovet, J., & Brown, R. (2007). Congenital hypothyroidism: Genetic and biochemical influences on brain developmental and neuropsychological functioning. In M.M. Mazzucco & J.L. Ross (Eds.). Neurogenetic developmental disorders: Variation of manifestation in childhood (pp.265-295).
July 4	Phenylketonuria	Welsh, M., & Pennington, B. (2000). Phenylketonuria. In K.O. Yeates, M.D. Ris, & H.G. Taylor. (Eds.). Pediatric neuropsychology: Research, theory, and practice (pp.112-146).
July 9	**TEST 3**	
July 11	Autism	Bade-White, P.A., Obrzut, J.E., & Randall, P.P. (2009). Neuropsychological aspects of pervasive developmental and autism spectrum disorders. In C.R. Reynolds & E. Fletcher-Janzen (Eds.). Handbook of clinical child
July 16		

Date	Topic	Readings
		neuropsychology (pp. 765-781).
July 18	Traumatic Brain Injury	Yeates, K.O. (2010). Traumatic brain injury. In K.O. Yeates, M.D. Ris, H.G. Taylor, & B.F. Pennington. (Eds.). Pediatric neuropsychology: Research, theory, and practice (pp.112-146).
July 23	Neuropsychological Interventions	Teeter, P.A. (2009). Neurocognitive interventions for childhood and adolescent disorders: A transactional model. In C.R. Reynolds & E. Fletcher-Janzen (Eds.). Handbook of clinical child neuropsychology (pp. 427-458).
July 25	**TEST 4**	
July 30	TBA	

Cross-listed course
Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

Academic Integrity
In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See Academic integrity (Arts) Academic Integrity Office (uWaterloo)

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline.

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4.

Appeals: A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 - Student Appeals.

Accommodation for Students with Disabilities
The AccessAbility Services office, located in Needles Hall Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.