

## 307 Human Neuropsychology – Fall 2009

Instructor: James Danckert  
PAS 4040  
Ext. 37014  
Email: [jdanker@uwaterloo.ca](mailto:jdanker@uwaterloo.ca)  
Office Hours: By appointment only.

\*\*\* Tuesdays and Thursdays 8:30 - 9:50 a.m. AL 208 \*\*\*

### Teaching Assistants

Cecilia Meza  
Office: PAS 2245  
Office Hours: Tuesdays 10:30 – 11:30  
Email: [cmeza@uwaterloo.ca](mailto:cmeza@uwaterloo.ca)

Kevin Barton  
Office: PAS 2235  
Office Hours: Fridays 9:00 – 10:00  
Email: [krbarton@gmail.com](mailto:krbarton@gmail.com)

**Course Web Page:** Lectures will be available on ACE. In general, I will post Powerpoint files AFTER I have delivered the lecture.

### Course Description and Aims

This course will provide you with a broad understanding of methods in human neuropsychological research including functional imaging and group and single case lesion studies, as a means of providing a broad understanding of human neuropsychology. Both basic research and clinical examples will be used to explore the brain - behaviour relationships inherent in motor control, language, vision and attention, memory, and executive control. The course will be run in three separate sections with each section examined in class (exams will not be cumulative and there will be no final exam in the University's exam period).

### Assessment

Each section's exam will be a mixture of multiple choice, fill-in-the-blanks, diagrams and short answer questions. Each exam will be worth 20% of the final grade (total of 60%).

Five percent (5%) of your grade can come from participation in experiments through the Research Experiences Group (see details below under **Research Experiences Group (REG) Participation in Psychology Research**). In this instance .5% can be earned by participating in one half hour experiment, so to get the full 5% you will need to complete 5 full hours of experiments (see details below). If you decide you do not want to participate in experiments you can complete an alternate assignment to be determined by Dr. Danckert (alternate assignments will each be worth 1% so if you choose to collect 4 experimental credits you can make up the final 1% through an assignment).

Four, one-page ‘thought’ papers will be required throughout the term (due dates below). These are intended to simply get you thinking about some of the topics we have dealt with in class. As such, you choose what you would like to write about and why. The only specification is that it should be relevant to the course. Each thought paper is worth 2.5% of the final grade.

**Due dates for the four thought papers:**

Thought paper 1:

Thought paper 2:

Thought paper 3:

Thought paper 4:

The final 25% of your grade will come from a written assignment. You can choose from the following assignments all of which have the same following constraints:

- must be double-spaced 12 point font
- maximum word limit INCLUDING references of 2,500 words
- references can NOT all come from the web – source material MUST include some original journal articles

Choose one of the following options for your assignment.

1. What advances, since Paul Broca’s time, has functional MRI provided in terms of our understanding of how the brain controls speech and language?
2. Explain how you would bring to bear converging methodologies to understand the neural correlates of consciousness.
3. Are single case studies of neurological patients still relevant in an fMRI world? Justify your response with reference to specific cases.

Due date for the assignment is.

Experimental credits must all be finalised by December 1<sup>st</sup>.

**Extra Credit**

Three course lectures will be placed on ACE as background material (largely a refresher of 261 – see details below). There will be quizzes associated with these lectures that you can take on ACE for 5% extra credit if you wish.

**Course Text**

Banich, M. T. *Cognitive Neuroscience and Neuropsychology*, (2003) Houghton Mifflin Co. New York.

## Course Outline

I have placed three topics on ACE that I consider to be background material for this course. The topics covered are:

1. Neuroanatomy (Banich Ch 1 & 2)
2. Methods in Cognitive Neuroscience (Banich Ch 3)
3. Single Case Methodology

Each of these topics is on ACE as a Flash media file. There will be a link on ACE to download the Flash reader you need in order to see these files. There will be quizzes for each lecture that you can take for extra credit.

### Section 1

Sep 15 <sup>th</sup>		Introduction to Human Neuropsychology	
Sep 17 <sup>th</sup>	Topic 1	History of Neuropsychology	
Sep 22 <sup>nd</sup>	Topic 2	Hemispheric Specialisation	(Banich Ch 4)
Sep 24 <sup>th</sup>	Topic 3	Motor Control	(Banich Ch 5)
Sep 29 <sup>th</sup>	Topic 4	Basic Vision	
Oct 1 <sup>st</sup>	Topic 5	Dual Pathways to Vision	
Oct 6 <sup>th</sup>	Topic 6	Object Recognition	(Banich Ch 6)

**\*\*\* Section 1 exam – Thursday Oct 8<sup>th</sup> \*\*\***

### Section 2

Oct 13 <sup>th</sup>	Topic 7	Spatial Processing	(Banich Ch 7)
Oct 15 <sup>th</sup>	Topic 8	Attention	(Banich Ch 8)
Oct 20 <sup>th</sup>	Topic 9	Unilateral Neglect	
Oct 22 <sup>nd</sup>	Topic 10	Language	(Banich Ch 9)
Oct 27 <sup>nd</sup>	Topic 11	Memory	(Banich Ch 10)
Oct 29 <sup>th</sup>	Topic 12	Executive Functions	(Banich Ch 11)

**\*\*\* Section 2 exam – Nov 3<sup>rd</sup> \*\*\***

### Section 3

Nov 5 <sup>rd</sup>	Topic 14	Schizophrenia	(Banich Ch 14)
Nov 10 <sup>th</sup>	Topic 15	Dementias	(Banich Ch 14)
Nov 12 <sup>th</sup>	Topic 16	Emotion	(Banich Ch 12)
Nov 17 <sup>th</sup>	Topic 17	Developmental Disorders	(Banich Ch 13)
Nov 19 <sup>th</sup>	Topic 18	Aging and the brain	(Banich Ch 13)
Nov 24 <sup>th</sup>	Topic 19	Time	
Nov 26 <sup>th</sup>	Topic 20	Boredom	
Dec 1 <sup>st</sup>	Topic 21	Revision and Career Advice	

**\*\*\* Section 3 exam – Dec 3<sup>rd</sup> \*\*\***

**Special Circumstances**

Students who are requesting accommodation for course requirements (assignments, midterm tests, final exams, etc.) due to illness should do the following:

- seek medical treatment as soon as possible and obtain a completed UW Verification of Illness Form:

[http://www.healthservices.uwaterloo.ca/Health\\_Services/verification.html](http://www.healthservices.uwaterloo.ca/Health_Services/verification.html)

- submit that form to the instructor within 48 hours.
- (preferably) inform the instructor by the due date for the course

requirement that you will be unable to meet the deadline and that documentation will be forthcoming.

In the case of a missed final exam, the instructor and student will negotiate an extension for the final exam which will typically be written as soon as possible, but no later than the next offering of the course. In the case of a missed assignment deadline or midterm test, the instructor will either:

- a) waive the course component and re-weight remaining term work as he/she deems fit according to circumstances and the goals of the course, or
- b) provide an extension.

In the case of bereavement, the instructor will provide similar accommodations to those for illness. Appropriate documentation to support the request will be required.

Students who are experiencing extenuating circumstances should also inform their academic advisors regarding their personal difficulties.

**Research Experiences Group (REG)**  
**Participation in Psychology Research : Guidelines for Psychology 307, Fall 2009**

Experiential learning is considered an integral part of the undergraduate program in Psychology. Participation in research is one example of this. A number of undergraduate courses have been expanded to include opportunities for Psychology students to volunteer as research participants enabling them to learn first-hand about psychology research and related concepts. Many students report that participation in research is both an educational and interesting experience.

Since experiential learning is highly valued in the Department of Psychology, students may earn up to 5% of your final mark in this course through research experience (i.e., your course work will make up 95% of your final mark and research experience will make up the other 5% for a maximum grade of 100%).

This can be done in two ways. First, you may participate in studies conducted by students and faculty in the Department of Psychology. Participation is worth 0.5 participation credits (percentage points) for each half-hour of participation. Researchers will record student's participation and the REG Coordinator will advise the course instructor of the total credits earned by each student at the end of the term. Second, if you do not wish to participate in research, you may choose an alternative approach to earning the same number of credits; this is explained below in "Alternative to participating in research."

Please note that all Psychology studies have undergone prior ethics review and clearance through the Office of Research Ethics.

Educational focus of participation in research

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 sh/he participated.

### ***How to sign up for studies:***

Once you are registered in this course, you will get an account on Sona (our web-based Study Sign-Up system) at <http://uwaterloo.sona-systems.com> and you will receive an email with your UserID and Password. IF YOU DO NOT RECEIVE this email, please report this to [regadmin@uwaterloo.ca](mailto:regadmin@uwaterloo.ca) immediately. .

- 1) Log On to Sona: User ID is your Quest ID (eg. j2smith)  
Password is your Student ID (eg 2001234)
- 2) Human Subjects/Privacy Policy: Please Read/Acknowledge
- 3) Prescreen Questionnaire: Please take 10 minutes to provide this demographics information. There is no credit for this and you may decline if you wish however completing it will increase your eligibility for studies.
- 4) Sign-up for Online Surveys and/or Lab studies:
  - a. Go to “Studies” page to view the list of available studies.
  - b. Click on the Titles of studies that are eligible for this course.
  - c. Read the Study Information page.
  - d. For Online studies: Click on “View Timeslots” and/or “Participate”.
  - e. For Lab studies: Click on “View Timeslots” to set up lab appointments.
- 5) Feedback and Credits: Upon completion of the study you will receive feedback about the study hypothesis, design and predictions. Within 48 hours you will be granted the credit. Credits will be converted to grades and added to your final grade at the end of the term.

### ***Mass Testing Survey (for 1.0 participation credit):***

Researchers often select participants based on their responses to the measures in this survey. Completing it increases your eligibility for other studies. Note that you can only do this survey if you have completed the Prescreen questionnaire. Doing both Prescreen Questionnaire and Mass Testing Survey helps you (by providing more qualifying studies) and it helps researchers (by identifying more qualified participants). The Mass Testing Survey will be available until Tuesday October 20 at which time it will go offline, so please try to complete it before that date.

### ***Study Restrictions and Important Dates:***

- i) The first day to start participating in studies is Tuesday September 14.
- ii) The study must be eligible for a credit in this course (as noted in the Eligibility Requirements column on your Studies page).
- iii) **Only 2 of your credits for this course** can be for **Online** studies.
- iv) You should try to spread your participation out over the term i.e., if you wait until late in the term there may not be enough studies available for you.
- v) The last day to participate for **credit** is Friday December 4.
- vi) The last day to participate for **remuneration/pay** is Tuesday December 22.

### ***Denial of access to studies: Completing studies that you have signed up for!***

It is very important that you complete the studies that you have signed up for. For Lab studies this means showing up for the scheduled appointment. For Online studies this

means completing the survey before the deadline that is posted in the timeslot. Please note that a study sign-up is a firm commitment to the researcher running the study so if you cannot keep the lab appointment or complete the survey before the deadline, please cancel the Sign-Up or contact the researcher in advance. Failure to attend 3 (THREE) Lab and/or Online studies that you have signed up for without providing adequate prior notice to the researcher may result in denial of access to further studies. Details are provided on the FAQ page on your Sona account.

***For information, instructions, help with login problems etc. please contact:***

REG website: <http://www.arts.uwaterloo.ca/~regadmin/regparticipant>

REG Coordinator: [regadmin@uwaterloo.ca](mailto:regadmin@uwaterloo.ca)

### Alternative to participating in research

Students are not required to participate in research, and not all students wish to do so. As an alternative to participation in research, students may submit short reviews (1½ to 2 pages) of journal articles relevant to the course material. Each review article counts as one percentage point. You should contact your TA to get approval before writing the review. To receive credit, you must follow specific guidelines. The article review must:

- **Be submitted before December 4. Late submissions will NOT be accepted under ANY circumstances.**
- Be typed
- Fully identify the title, author(s), source and date of the article. A copy of the article must be attached.
- Identify the psychological concepts in the article and indicate the pages in the textbook that are applicable. Critically evaluate the application or treatment of those concepts in the article. If inappropriate or incorrect, identify the error and its implications for the validity of the article. 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.
- Clearly evaluate the application or treatment of those concepts in the article.
- Keep a copy of your review in the unlikely event we misplace the original.

Students may complete any combination of a) participation in research or b) article review up to a total of 5 credits (i.e., 5% grade).