

**Huron University College  
Department of Psychology**

**Psychology 3222F – Introduction to Neuroimaging Research  
Summer Day 2020**

**1.0. BASIC COURSE INFORMATION**

- 1.1 Course Number:**  
Psychology 3222F
- 1.2 Course Name:**  
Introduction to Neuroimaging Research
- 1.3 Scheduled class times:**  
Tuesdays and Thursdays 8:30-11:30am
- 1.4 Pre/Anti-requisite information:**  
Prerequisite(s): Psychology 2221A/B or Psychology 2220A/B,  
AND registration in the third or fourth year of Honors  
Specialization, Major in Psychology, or permission of the  
Department.  
Extra Information: 0.5 course.
- 1.5 Instructor Name:**  
Dr. Derek Quinlan
- 1.6 Instructor contact information:**  
Email: [dquinla4@uwo.ca](mailto:dquinla4@uwo.ca)
- 1.7 Office hours:**  
By appointment via Zoom meeting

**2.0. CALENDAR DESCRIPTION**

A research oriented course that focuses on the experiments and methodological techniques in neuroimaging that lead to our current understandings of the structure and function of the mammalian brain.

3 lecture/seminar hours held twice per week; 0.5 course

**Note 1: Unless you have either the prerequisites for this course or written special permission to enroll, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.**

### **3.0 COURSE OBJECTIVES**

By the end of this course, students should have:

- a broader understanding of concepts in neuroimaging research
- a working knowledge of the research paradigms and methodology used in neuroimaging research

### **4.0 DESCRIPTION OF CLASS METHODS**

This course will be predominately lecture-based, but will also include “in-lecture” demonstrations and experiments that will investigate various methods employed in neuroimaging research (E.g. EEG, fMRI, fNIRS, etc.). There will be three ‘lecture’ hours each Tuesday and Thursday to which there is an assigned lecture (See 7.0 Tentative Schedule). ‘Lecture’ hours will be used for both lectures and experiments/demos/tutorials. Exams will assess students’ basic conceptual and functional knowledge of both lecture and reading materials, as well as the methodological paradigms and findings resulting from the experiments/demos. Writing assignments will also be utilized to assess students’ understanding of the materials/methods explored.

### **5.0 REQUIRED TEXTS**

Introduction to Human Neuroimaging  
by Hans Op de Beeck and Chie Nakatani  
Cambridge University Press (May 16, 2019)

Assigned readings from the required text will be assigned on a week-to-week basis. Additional readings will be made available on the course website as needed. All readings, along with lecture materials (including experiments/demos/tutorials) will be covered in the exams. **Please note that most of the material for this course will come from lectures, therefore either regular lecture attendance, or viewing of the recorded lecture, is highly recommended.**

## 6.0 EVALUATION

1. Exams: There will be two online exams, a midterm worth 30% and a second exam worth 40% of the final course grade. The first exam will cover all materials related to the first five lectures (July 7<sup>th</sup> – 21<sup>st</sup>), while the second exam will be non-cumulative, covering only the material from the last 6 lectures (July 23<sup>rd</sup> – August 13<sup>th</sup>). These exams will be a combination of multiple choice questions, fill in the blank/diagram/brief answer questions, and 1-page questions.

2. Paper: There will be one full experimental paper (in APA format) worth 30% of the final grade and will be due March 25<sup>th</sup>.

### 6.2. Exams

There are two online exams, which when combined, determine 70% of the final grade in the course. The first exam will be written online during the 48-hour period during July 27<sup>th</sup> – 28<sup>th</sup> and students will have 2 hours to complete the exam once begun. Similarly, the second exam will be written online during the 48-hour period during August 17<sup>th</sup> – 18<sup>th</sup> and students will have 2 hours to complete the exam once begun.

**Exams are non-cumulative and each exam covers approximately one half of the course material.**

Exams will be composed of multiple-choice questions, fill-in-the-blank questions/diagrams/brief answer questions, and 1-page answer questions based on the assigned readings and lectures/demonstrations/experiments.

Following the failure of a student to write the midterm exam, and acting on advice from the Academic Counseling Office to provide relief (based on medical and/or non-medical grounds), we will calculate the student's final grade based on their performance on the final exam and the written assignment. Students that do not write the midterm exam and do not receive accommodation from the Academic Counseling office will receive a midterm exam grade of zero. In the event that a student fails to write the final exam during the final exam period, and again acting on advice from the Academic Counseling Office to provide relief (based on medical and/or non-medical grounds), we will permit that student to write a make-up for the final exam only. Failure to attain academic accommodation will lead to the grade being recorded as zero. The make-up final exam will follow a similar format to that of the regularly scheduled final exam and will be written on a day and time mutually agreed upon by the student and professor. Documentation for missed exams/assignments must be submitted to the Academic Counseling Office in a timely manner.

The midterm exam grade will be posted in the gradebook of the OWL website. Students may review their exam via a Zoom meeting with their instructor during a scheduled office hour. The Psychology department will retain all tests.

### Statement Regarding Grades in Psychology at Huron University College

Students at Huron University College should consider a grade in the range from 75-79 to be evidence of satisfactory performance in a 3000-level Psychology course. Grades in the A (80-90%) range will only be awarded for performance that is demonstrably superior to the third or fourth-year standard associated with the Major or Minor modules. A grade of A+ (90-100%) will only be awarded rarely and only for work that is exceptional.

### **7.0 Psychology 3222G – Tentative Schedule – Summer Day 2020**

<b>July</b>	7th	Syllabus & Introduction Lecture
	9th	Behavioural & Cognitive Neuroscience
	14th	fMRI - Functional Magnetic Resonance Imaging
	16th	fMRI - Functional Magnetic Resonance Imaging
	21st	Anatomy
	23rd	fNIRS – Functional Near-Infrared Spectroscopy
	27th - 28th	Midterm Exam (Materials July 7th - 21st Only)
	30th	PET – Positron Emission Tomography
<b>August</b>	4th	EEG (Electroencephalography)
	6th	MEG (Magnetoencephalography) & Other
	11th	Invasive Techniques & <b>PAPER DUE</b>
	13th	Muscle/Physiological
	17th - 18th	<b>FINAL EXAM PERIOD (Materials July 23rd - August 13th)</b>

## **Appendix to Course Outlines: Academic Policies & Regulations 2020**

### **Prerequisite and Antirequisite Information**

Students are responsible for ensuring that they have successfully completed all course prerequisites and that they have not completed any course antirequisites. Unless you have either the requisites for this course or written special permission from your Dean to enrol in it without them, you may be removed from this course and it will be deleted from your record. If you enrol in this course despite having already taken an antirequisite you may be removed from this course and it will be deleted from your record. Removals for these reasons may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites or for having already taken the antirequisites.

### **Conduct of Students in Classes, Lectures, and Seminars**

Membership in the community of Huron University College and Western University implies acceptance by every student of the principle of respect for the rights, responsibilities, dignity and well-being of others and a readiness to support an environment conducive to the intellectual and personal growth of all who study, work and live within it. Upon registration, students assume the responsibilities that such registration entails. The academic and social privileges granted to each student are conditional upon the fulfillment of these responsibilities.

In the classroom, students are expected to behave in a manner that supports the learning environment of others. Students can avoid any unnecessary disruption of the class by arriving in sufficient time to be seated and ready for the start of the class, by remaining silent while the professor is speaking or another student has the floor, and by taking care of personal needs prior to the start of class. If a student is late, or knows that he/she will have to leave class early, be courteous: sit in an aisle seat and enter and leave quietly.

Please see the Code of Student Conduct at:

[www.huronuc.on.ca/sites/default/files/pdfs/Code%20of%20Student%20Conduct.pdf](http://www.huronuc.on.ca/sites/default/files/pdfs/Code%20of%20Student%20Conduct.pdf).

### **Technology**

It is not appropriate to use technology (such as, but not limited to, laptops, cell phones) in the classroom for non-classroom activities. Such activity is disruptive and is distracting to other students and to the instructor, and can inhibit learning. Students are expected to respect the classroom environment and to refrain from inappropriate use of technology and other electronic devices in class.

### **Class Cancellations**

In the event of a cancellation of class, every effort will be made to post all relevant information on the OWL class site, <https://owl.uwo.ca/portal>, and on the Huron website at [www.huronuc.on.ca/about/accessibility](http://www.huronuc.on.ca/about/accessibility) .

### **Attendance Regulations for Examinations**

A student is entitled to be examined in courses in which registration is maintained, subject to the following limitations:

- 1) A student may be debarred from writing the final examination for failure to maintain satisfactory academic standing throughout the year.
- 2) Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course will be reported to the Dean of the Faculty offering the course (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course. The Dean of the Faculty offering the course will communicate that decision to the Dean of the Faculty of registration.

Please see the policy on Attendance Regulations for Examinations here:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/exam/attendance.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/exam/attendance.pdf).

### **Academic Student Support Services**

For advice on course selections, degree requirements, and for assistance with requests for medical accommodation, students should email an Academic Advisor in Huron's Student Support Services at [huronsss@uwo.ca](mailto:huronsss@uwo.ca). An outline of the range of services offered is found on the Huron website at: <https://huronatwestern.ca/academic-advising>.

Department Chairs, Program Directors and Coordinators are also able to answer questions about individual programs. Contact information can be found on the Huron website at:

<https://huronatwestern.ca/contact/contact-directory>.

### **Adding / Dropping Courses**

If you think that you are too far behind to catch up or that your workload is not manageable, you should consult your Academic Advisor. If you are considering reducing your workload by dropping one or more courses, this must be done by the appropriate deadlines. Please refer to the Huron website, <https://huronatwestern.ca/academic-advising> or review the list of official Sessional Dates on the Academic Calendar, available here:

<http://www.westerncalendar.uwo.ca/SessionalDates.cfm>.

You should consult with the course instructor and the Academic Advisor who can help you consider alternatives to dropping one or more courses. Note that dropping a course may affect OSAP and/or Scholarship/Bursary eligibility.

### **Copyright Regarding Course Material**

Lectures and course materials, including PowerPoint presentations, tests, outlines, and similar materials are protected by copyright. Faculty members are the exclusive owner of copyright in those materials they create. Students may take notes and make copies for their own use. Students may not allow others to reproduce or distribute lecture notes and course materials publicly (whether or not a fee is charged) without the express written consent of a faculty member. Similarly, students own copyright in their own original papers and exam essays. If a faculty member is interested in posting a student's answers or papers on the course web site he/she should ask for the student's written permission.

### **Statement on Academic Integrity**

The International Centre for Academic Integrity defines academic integrity as "a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behaviour that enable academic communities to translate ideals to action." (CAI Fundamental Values Project, 1999).

A lack of academic integrity is indicated by such behaviours as the following:

- Cheating on tests;
- Fraudulent submissions online;
- Plagiarism in papers submitted (including failure to cite and piecing together unattributed sources);
- Unauthorized resubmission of course work to a different course;
- Helping someone else cheat;
- Unauthorized collaboration;
- Fabrication of results or sources;
- Purchasing work and representing it as one's own.

### **Academic Integrity: Importance and Impact**

Being at university means engaging with a variety of communities in the pursuit and sharing of knowledge and understanding in ways that are clear, respectful, efficient, and productive. University communities have established norms of academic integrity to ensure responsible, honest, and ethical behavior in the academic work of the university, which is best done when sources of ideas are properly and fully acknowledged and when responsibility for ideas is fully and accurately represented.

In the academic sphere, unacknowledged use of another's work or ideas is not only an offence against the community of scholars, it is also an obstacle to academic productivity. It may also be understood as fraud and may constitute an infringement of legal copyright.

A university is a place for fulfilling one's potential and challenging oneself, and this means rising to challenges rather than finding ways around them. The achievements in an individual's university studies can only be fairly evaluated quantitatively through true and honest representation of the actual learning done by the student. Equity in assessment for all students is ensured through fair representation of the efforts by each.

Acting with integrity at university constitutes a good set of practices for maintaining integrity in later life. Offences against academic integrity are therefore taken very seriously as part of the university's work in preparing students to serve, lead, and innovate in the world at large.

A university degree is a significant investment of an individual's, and the public's, time, energies, and resources in the future, and habits of academic integrity protect that investment by preserving the university's reputation and ensuring public confidence in higher education.

**Students found guilty of plagiarism will suffer consequences ranging from a grade reduction, to failure in the course, to expulsion from the university. In addition, a formal letter documenting the offence will be filed in the Dean's Office, and this record of the offence will be retained in the Dean's Office for the duration of the student's academic career at Huron University College.**

### **Statement on Academic Offences**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, as per the Academic Calendar:

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=1&Command=showCategory&SelectedCalendar=Live&ArchiveID=#SubHeading\\_189](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=1&Command=showCategory&SelectedCalendar=Live&ArchiveID=#SubHeading_189) .

### **Turnitin.com**

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University, for a detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between Western University and Turnitin.com.

### **Computer-Marked Tests/exams**

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

### **Clickers**

Personal Response Systems (“clickers”) may be used in some classes. If clickers are to be used in a class, it is the responsibility of the student to ensure that the device is activated and functional. Students must see their instructor if they have any concerns about whether the clicker is malfunctioning. Students must use only their own clicker. If clicker records are used to compute a portion of the course grade:

- the use of somebody else’s clicker in class constitutes a scholastic offence
- the possession of a clicker belonging to another student will be interpreted as an attempt to commit a scholastic offence.

### **Policy on “Special” Accommodation**

Students who require **special** accommodation for tests and/or other course components must make the appropriate arrangements with the Student Development Centre (SDC). Further details concerning policies and procedures may be found at: <http://www.sdc.uwo.ca/ssd/index.html> .

### **Academic Consideration for Missed Work**

Students who are seeking academic consideration for missed work during the semester may submit a self-reported absence form online provided that the absence is 48 hours or less and the other conditions specified in the Senate policy at

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf) are met.

Students whose absences are expected to last longer than 48 hours, or where the other conditions detailed in the policy are not met (e.g., work is worth more than 30% of the final grade, the student has already used 2 self-reported absences, the absence is during the final exam period), may receive academic consideration by submitting a Student Medical Certificate (for illness) or

other appropriate documentation (for compassionate grounds). The Student Medical Certificate is available online at

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

All students pursuing academic consideration, regardless of type, must contact their instructors no less than 24 hours following the end of the period of absence to clarify how they will be expected to fulfill the academic responsibilities missed during their absence. **Students are reminded that they should consider carefully the implications of postponing tests or midterm exams or delaying submission of work, and are encouraged to make appropriate decisions based on their specific circumstances.**

Students who have conditions for which academic accommodation is appropriate, such as disabilities or ongoing or chronic health conditions, should work with Accessible Education Services to determine appropriate forms of accommodation.

### **Information for Student Illness Reporting Tool Site**

Beginning March 18, 2020 at 9:00 a.m. all students are asked to use a new, online [Student Illness Reporting Tool](#) to track and monitor illnesses, whether the illness impacts the submission of course work or not. The illness must be entered each day that you are ill. When the notification is saved, an email is automatically sent to you for your records. This tool takes the place of the need to submit a medical note and the Self-Reported Absence System used by undergraduate students.

If you have self-reported and require accommodation for a deadline or an exam, please email your instructor directly with the details.

The health, safety and wellness of the university community is important to Western. During the current COVID-19 situation, it is essential for Western to track the impact of illnesses for the University. The Middlesex-London Health Unit must receive this data to be able to quickly understand the magnitude of illness affecting the university community.

### **Requests for Academic Consideration Using the Self-Reported Absence Form**

Students who experience an unexpected illness or injury or an extenuating circumstance (48 hours or less) that is sufficiently severe to temporarily render them unable to meet academic requirements (e.g., attending lectures or labs, writing tests or midterm exams, completing and submitting assignments, participating in presentations) should self-declare using the online Self-Reported Absence portal. This option should be used in situations where the student expects to resume academic responsibilities within 48 hours or less.

Please review the full policy at,

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf).

### **Policy on “Academic” Accommodation - Medical / Non-Medical Grounds (if absence is not self-reported)**

- (a) **Medical Grounds for assignments worth 10% or more of final grade: Go directly to Huron Support Services/ Academic Advising, or email [huronsss@uwo.ca](mailto:huronsss@uwo.ca).**

University Senate policy, which can be found at, [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf), requires that all student requests for accommodation on medical grounds for assignments worth 10% or more of the final grade be made directly to the academic advising office of the home faculty (for Huron students, the “home faculty” is Huron), with supporting documentation in the form (minimally) of the Senate-approved Student Medical Certificate found at: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf).

The documentation is submitted in confidence and will not be shown to instructors. The advisors will contact the instructor when the medical documentation is received, and will outline the severity and duration of the medical challenge as expressed on the Student Medical Certificate and in any other supporting documentation. The student will be informed that the instructor has been notified of the presence of medical documentation, and will be instructed to work as quickly as possible with the instructor on an agreement for accommodation.

The instructor will not normally deny accommodation where appropriate medical documentation is in place and where the duration it describes aligns with the due date(s) of assignment(s). Before denying a request for accommodation on medical grounds, the instructor will consult with the Dean. The instructor’s decision is appealable to the Dean.

**(b) Accommodation on Medical Grounds for assignments worth *less than 10%* of final grade: Consult Instructor Directly**

When seeking accommodation on medical grounds for assignments worth less than 10% of the final course grade, the student should contact the instructor directly. The student need only share broad outlines of the medical situation. The instructor **may** require the student to submit documentation to the academic advisors, in which case she or he will advise the student and inform the academic advisors to expect documentation. The instructor may not collect medical documentation. The advisors will contact the instructor when the medical documentation is received, and will outline the severity and duration of the medical challenge as expressed on the Student Medical Certificate and in any other supporting documentation. The student will be informed that the instructor has been notified of the presence of medical documentation, and will be instructed to work as quickly as possible with the instructor on an agreement for accommodation.

The instructor will not normally deny accommodation where appropriate medical documentation is in place and where the duration it describes aligns with the due date(s) of assignment(s). Before denying a request for accommodation on medical grounds, the instructor will consult with the Dean. The instructor’s decision is appealable to the Dean.

**(c) Non-Medical Grounds: Consult your Instructor directly.**

Where the grounds for seeking accommodation are not medical, the student should contact the instructor directly. Late penalties may apply at the discretion of the instructor. Apart from the exception noted below, academic advisors will not be involved in the process of accommodation for non-medical reasons.

Where a student seeks accommodation on non-medical grounds where confidentiality is a concern, the student should approach an academic advisor with any documentation available. The advisors will contact the instructor after the student's request is received, and will outline the severity and duration of the challenge without breaching confidence. The student will be informed that the instructor has been notified that significant circumstances are affecting or have affected the student's ability to complete work, and the student will be instructed to work as quickly as possible with the instructor on an agreement for accommodation. Before denying a request for accommodation where documentation has been submitted to an academic advisor, the instructor will consult with the Dean. The instructor's decision is appealable to the Dean.

### **Mental Health & Wellness Support at Huron and Western**

Students who are stressed, emotionally distressed or in mental health crisis, please refer to: <https://huronatwestern.ca/student-life-campus/student-services/wellness-safety> for a complete list of options about how to obtain help, or email [Huronwellness@huron.uwo.ca](mailto:Huronwellness@huron.uwo.ca) to access your wellness staff directly. Additional supports for Health and Wellness may be found and accessed at Western through, [www.uwo.ca/uwocom/mentalhealth/](http://www.uwo.ca/uwocom/mentalhealth/).

The Student Emergency Response Team (SERT) provides medical response to 9-1-1 calls on Main, Brescia and Huron campuses which operates 24 hours a day, 7 days a week during the academic year. SERT is dispatched through the campus community Police Service (CCPS) to any medical emergency on campus at (519) 661-3300. For more information about SERT please visit: [sert.uwo.ca/about-sert/about-sert/](http://sert.uwo.ca/about-sert/about-sert/).

### **Important Dates & Directory at Huron and Western**

For a current and up-to-date list of important dates and campus directories, please visit:

- **Huron – Important Dates:** <https://huronuc.ca/important-dates-and-deadlines>
- **Western – Academic Calendar & Sessional Dates:**  
<http://www.westerncalendar.uwo.ca/SessionalDates.cfm>
- **Huron Directory – Faculty, Staff and Administration:**  
<https://huronuc.ca/index.php/contact/contact-directory>
- **Western Directory – Faculty, Staff and Administration:**  
<https://www.uwo.ca/directory.html>