



Brescia University College
LONDON CANADA

Psych 3215G, Section 530
Sex Differences and Behavioural Neuroscience

Dr. J. Hoshooley

2019-20

COURSE DESCRIPTION

This course examines sex differences in the brain and behaviour of both humans and non-human species. Topics may include strategies and methods for evaluating sex differences, genetic and hormonal influences, cognition, affiliative behaviour, stress, motivation, reward, energy regulation, immune functioning, pain, and disease

Prerequisites: At least 60% in Psychology 2220A/B or 2221A/B

Antirequisites: Psychology 3225A/B, 3226A/B, Psychology 3990F/G taught at Brescia 2008-09 to 2010-11.

COURSE INFORMATION

Instructor: Dr. Jennifer Hoshooley

Office: UH 356

E-mail: jmckay6@uwo.ca

Office Hours: Wednesdays 11:30 – 12:30 and by appointment

Time, Location of Classes: Mondays 2:30 – 5:30pm, BR-204

Course Website: on Western OWL

LEARNING OUTCOMES

a) Describe sex differences in brain and behaviour of non-human and human species & their significance (Communication; Critical thinking; Valuing)

b) Hypothesize genetic, hormonal, social and/or psychological mechanisms for sex differences (Communication; Critical thinking; Inquiry & analysis; Valuing)

c) Initiate, direct, and actively participate in critical group discussions (Communication; Critical thinking; Social awareness & engagement)

d) Independently research, summarize and critically analyze a focussed topic in sex differences (Communication; Critical thinking; Inquiry & analysis)

TEXTBOOK AND COURSE MATERIALS**Required:** Custom Course Pack for Psych 3215G from Western Bookstore**CLASS SCHEDULE - subject to change, see WebCT Owl and class for updates**

Date	Topic	Reading
Jan 6	Introduction and Review	
Jan 13	Perspectives in Sex Differences	Class 2 articles
Jan 20	Sex Differences in Memory and Emotion	Class 3 articles
Jan 27	Sex Differences in Neuroplasticity and Disease	Class 4 articles
Feb 3	Midterm #1 – in class	Articles 1 – 11 & review from class
Feb. 10	Gender, Hormones, Context	Class 5 articles
Feb 17-21	Reading Week – <i>no class</i>	
Feb 24	Sex Differences in Motivation, Stress, and Mental Health <i>Preview of Essay and Lightning Talk Assignments</i>	Class 6 articles
Mar 2	Different Sex Connections	Class 7 articles
Mar 9	Midterm #2 – In class	Articles 12 – 22
Mar 16	Essay and Lightning Talk Information Session and Individual Article Meetings	
Mar 23	Lightning Talks	
Mar 30	Lightning Talks Essay Due	

Readings for each topic are available in the custom course pack from the Western Bookstore. [Follow the reading schedule below.](#)

Class 2 - January 13: Perspectives in Sex Differences

1. Cahill, L. (2006). Why sex matters for neuroscience. *Nature Reviews Neuroscience*, 7(6), 477-484. AND Cahill, L. (2017). An issue whose time has come. *Journal of Neuroscience Research*, 95(1-2), 12-13.
2. McCarthy, M. M., & Arnold, A. P. (2011). Reframing sexual differentiation of the brain. *Nature Neuroscience*, 14(6), 677 – 683.
3. Joel, D., Berman, Z., Tavor, I., Wexler, N., Gaber, O., Stein, Y., . . . Assaf, Y. (2015). Sex beyond the genitalia: The human brain mosaic. *Proceedings of the National Academy of Sciences of the United States of America*, 112(50), 15468 – 15473.

Class 3 - January 20: Sex Differences in Emotion, Memory and Neuroplasticity

4. Shors, T. J., Millon, E. M., Chang, H. Y. M., Olson, R. L., & Alderman, B. L. (2017). Do sex differences in rumination explain sex differences in depression? *Journal of Neuroscience Research*, 95, 711-718.
5. Babbage, D. R., Zupan, B., Neumann, D., & Willer, B. (2018). Sex differences in response to emotion recognition training after traumatic brain injury. *Brain Injury*, 32, 1492-1499.
6. Lee, N. C., Krabbendam, L., White, T. P., Banaschewski, T., Barker, G. J., . . . Shergill, S. S. (2013). Do you see what I see? Sex differences in the discrimination of facial emotions during adolescence. *Emotion*, 13(6), 1030 – 1040.
7. Kruger, S., Sokolov, A. N., Enck, P., Krageloh-Mann, I., & Pavlova M. A. (2013) Emotion through Locomotion: Gender Impact. PLoS ONE 8(11): e81716. doi:10.1371/ journal.pone.0081716

Class 4 – January 27: Sex Differences in Neuroplasticity, Brain Injury and Disease

8. Mychasiuk, R., Hehar, H., Farran, A., & M. J. Esser. (2014). Mean girls: Sex differences in the effects of mild traumatic brain injury on the social dynamics of juvenile rat play behaviour. *Behavioural Brain Research*, 259, 284-291.
9. Wiseman-Hakes, C., Saleem, M., Poulin, V., Nalder, E., Balachandran, P., Gan, C., & Colantonio, A. (2019). The development of intimate relationships in adolescent girls and women with traumatic brain injury: A framework to guide gender specific rehabilitation and enhance positive social outcomes. *Disability and Rehabilitation*, , 1-7. doi:10.1080/09638288.2019.1597180
10. Mollayeva, T., Mollayeva, S., & Colantonio, A. (2018). Traumatic brain injury: Sex, gender and intersecting vulnerabilities. *Nature Reviews. Neurology*, 14(12), 711-722. doi:10.1038/s41582-018-0091-y

Midterm #1 – February 3 Covering Articles 1 – 10 and information from Class 1

Class 5 – February 10: Gender, Hormones & Context

11. Fausto-Sterling, A., Coll, C. G., & Lamarre, M. (2012). Sexing the baby: Part 1 – What do we really know about sex differentiation in the first three years of life? *Social Science & Medicine*, *74*, 1684-1692.
12. Mascaro, J. S., Rentscher, K. E., Hackett, P. D., Mehl, M. R., & Rilling, J. K. (2017). Child gender influences paternal behavior, language, and brain function. *Behavioral Neuroscience*, *131*(3), 262-273. doi:10.1037/bne0000199
13. van Anders, S. M. (2013). Beyond masculinity: Testosterone, gender/sex, and human social behavior in a comparative context. *Frontiers in Neuroendocrinology*, *34*(3), 198-210. doi:10.1016/j.yfrne.2013.07.001

Class 6 – Feb 24: Sex Differences in Motivation, Stress, and Mental Health

14. Altemus, M., Sarvaiya, N., & Neill Epperson, C. (2014). Sex differences in anxiety and depression clinical perspectives. *Frontiers in Neuroendocrinology*, *35*(3), 320 – 330.
15. Fattore, L., Melis, M., Fadda, P., & Fratta, W. (2014). Sex differences in addictive disorders. *Frontiers in Neuroendocrinology*, *35*(3) 272 – 284.
16. Chao, A. M., Loughead, J., Bakizada, Z. M., Hopkins, C. M., Geliebter, A., Gur, R. C., & Wadden, T. A. (2017). Sex/gender differences in neural correlates of food stimuli: a systematic review of functional neuroimaging studies. *Obesity Reviews*, *18*, 687 – 699.
17. Cornier, M-A., Shott, M. E., Thomas, E. A., Bechtell, J. L., Bessesen, D. H., Tregellas, J. R., & Frank, G. K. (2015). The effects of energy balance, obesity-proneness and sex on the neuronal response to sweet taste. *Behavioural Brain Research*, *278*, 446-452.
18. Taylor, S.E., Klein, B. P., Gruenewald, T. L., Gurung, R. A. R. & Updegraff, J. A. (2000). Biobehavioural responses to stress in females: tend-to-befriend, not fight-or-flight. *Psychological Review*, *107*(3), 411 – 429.

Class 7 – March 2: Different Sex Connections

19. Ingahlalikar, M., Smith, A., Parker, D., Satterthwaite, T. D., Elliott, M. A., Ruparel, K., . . . Verma, R. (2014). Sex differences in the structural connectome of the human brain. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(2), 823 – 828.
20. Maney, D. L. (2016). Perils and pitfalls of reporting sex differences. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, *371*, DOI: 10.1098/rstb.2015.0119.
21. O'Connor, C., & Joffe, H. (2014). Gender on the brain: A case study of science communication in the new media environment. *PLoS ONE*, *9*(10), 1-15.

EVALUATION & EXAM SCHEDULE

Evaluation Summary:

<u>Course Component</u>	<u>Date</u>	<u>Weight</u>
Midterm #1	Feb 3	15%
Midterm #2	Mar 9	15%
Seminar	Jan 13 – Mar 2	30%
Lightning Talk	Mar 23 – Mar 30	5%
Essay	Mar 30	35%

Midterms:

The two midterms will each be 2 hours long and will include questions in several formats that may include definition, diagram, fill-in-the-blank, and short answer questions. Midterm #2 will not be cumulative.

Seminar:

Individually or in pairs students will lead 20 minute seminars (informal and interactive) on an assigned scholarly article regarding sex differences in behavioral neuroscience to the class. A marking scheme/assignment sheet will be provided to students at the beginning of the course. There will be a draw to determine when and which articles students will present.

Lightning Talk:

Individually, students will give 5 min blitz type presentations regarding a self-selected topic in the sex influences domain. The talk must make reference to two different primary research papers. The papers selected must be approved by the instructor. A marking scheme/assignment sheet will be provided to students following the second midterm.

Essay:

Individually, students will research and craft an original scholarly essay regarding the topic explored in their **Lightning Talk**. This essay will be 10 pages in length with standard APA formatting applied. This essay will be due at 2:30pm on Mar 30.

Brescia 2019-20 Academic Policies and Regulations

1. POLICY REGARDING ACADEMIC ACCOMMODATION

The complete policy regarding [Accommodation for Illness - Undergraduate Students](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_12) can be found at http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_12.

Students who have long-term or chronic medical conditions which may impede their ability to complete academic responsibilities should seek Academic Accommodation through Student Accessibility Services

(http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=1&Command=showCategory&SelectedCalendar=Live&ArchiveID=#Page_10).

Personal commitments (e.g., vacation flight bookings, work schedule) which conflict with a scheduled test, exam or course requirement are **not** grounds for academic accommodation.

Students who experience an illness or extenuating circumstance sufficiently severe to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

1. Submitting a **Self-Reported Absence** form provided that the conditions for submission are met;
2. For medical absences, submitting a **Student Medical Certificate (SMC)** signed by a licensed medical or mental health practitioner;
3. For non-medical absences, submitting **appropriate documentation** (e.g., obituary, police report, accident report, court order, etc.) to their Academic Advisor. Students are encouraged to contact their Academic Advisor to clarify what documentation is acceptable.

Requests for Academic Consideration Using the Self-Reported Absence Portal

Students who experience an unexpected illness or injury or an extenuating circumstance of 48 hours or less that is sufficiently severe to render them unable to meet academic requirements 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. Note that the excused absence includes all courses and academic requirements within the up to 48 hours, it is not intended to provide an excused absence from a single course while students fulfill their academic responsibilities in other courses during that time.

The following conditions are in place for self-reporting of medical or extenuating circumstances:

1. Students will be allowed a **maximum of two self-reported absences** between September and April and one self-reported absence between May and August;
2. The duration of the absence will be for a maximum of 48 hours from the time the Self-Reported Absence form is completed through the online portal, or from 8:30 am the following morning if the form is submitted after 4:30 pm;
3. The excused absence will terminate prior to the end of the 48 hour period if the student undertakes significant academic responsibilities (writes a test, submits a paper) during that time;
4. Self-reported absences will **not** be allowed for scheduled final examinations; midterm examinations scheduled during the December examination period; or for final lab examinations scheduled during the final week of term;
5. Self-report absences may **not** be used for assessments worth more than 30% of any course;
6. Any absences in excess of 48 hours will require students to present a Student Medical Certificate (SMC), or appropriate documentation;
7. Students **must** communicate with their instructors **no later than 24 hours after the end of the period covered by the Self-Reported Absence form** to clarify how they will fulfil the academic expectations they may have missed during the absence.

Request for Academic Consideration for a Medical Absence

When a student requests academic accommodation (e.g., extension of a deadline, a makeup exam) for work representing 10% or more of the student's overall grade in the course, it is the responsibility of the student to provide acceptable documentation to support a medical or compassionate claim. All such requests for academic accommodation **must** be made through an Academic Advisor and include supporting documentation.

Academic accommodation for illness will be granted only if the documentation indicates that the onset, duration and severity of the illness are such that the student could not reasonably be expected to complete their academic responsibilities. Minor ailments typically treated by over-the-counter medications will not normally be accommodated.

The following conditions apply for students seeking academic accommodation on medical grounds:

1. Students must submit their Student Medical Certificate (SMC) along with a request for relief specifying the nature of the accommodation being requested no later than two business days after the date specified for resuming responsibilities. An SMC can be downloaded from http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf ;
2. In cases where there might be an extended absence or serious issue, students should submit their documentation promptly and consult their Academic Advisor for advice during their recovery period;
3. Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, scheduled tests or examinations, and other academic requirements;
4. Students **must** communicate with their instructors **no later than 24 hours** after the end of the period covered by the SMC to clarify how they will fulfil the academic expectations they may have missed during the absence;
5. Appropriate academic accommodation will be determined by the Dean's Office/Academic Advisor in consultation with the course instructor(s). Academic accommodation may include extension of deadlines, waiver of attendance requirements, arranging Special Exams (make-ups), re-weighting course requirements, or granting late withdrawal without academic penalty.

The [full policy on requesting accommodation due to illness](#) can be viewed at:

http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_12

2. ACADEMIC CONCERNS

If you feel that you have a medical or personal challenge that is interfering with your work, contact your instructor and Academic Advisor as soon as possible. Problems may then be documented and possible arrangements to assist you can be discussed at the time of occurrence rather than on a retroactive basis. Retroactive requests for academic accommodation on medical or compassionate grounds are not normally considered.

If you think that you are too far behind to catch up or that your work load is not manageable, you should consult your Academic Advisor. If you consider reducing your workload by dropping one or more courses, this must be done by the appropriate deadlines; please refer to the [Registrar's website](#), <http://brescia.uwo.ca/academics/registrar-services/> or the list of official sessional dates in the Academic

Calendar

(<http://www.westerncalendar.uwo.ca/SessionalDates.cfm?SelectedCalendar=Live&ArchiveID=>).

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 eligibility and/or Entrance Scholarship eligibility.*

3. ABSENCES

Short Absences: If you miss a class due to a minor illness or other problems, check your course outline for information regarding attendance requirements and make sure you are not missing a test or assignment. Cover any readings and arrange to borrow notes from a classmate. Contact the course instructor if you have any questions.

Extended Absences: If you have an extended absence, you should contact the course instructor and an Academic Advisor. Your course instructor and Academic Advisor can discuss ways for you to catch up on missed work, and arrange academic accommodations if appropriate and warranted.

It is important to note that the Academic Dean may refuse permission to write the final examination in a course if the student has failed to maintain satisfactory academic standing throughout the year or for too frequent absence from the class or laboratory

(http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_68).

4. SCHOLASTIC OFFENCES

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

http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20.

Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offences. Note that such offences include plagiarism, cheating on an examination, submitting false or fraudulent assignments or credentials, impersonating a candidate, or submitting for credit in any course without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course in the University or elsewhere. Students are advised to consult the section on Scholastic Discipline for Undergraduate Students in the Academic Calendar.

If you are in doubt about whether what you are doing is inappropriate or not, consult your instructor, the Academic Dean's Office, or the Registrar. A claim that "you didn't know it was wrong" is not accepted as an excuse.

The penalties for a student guilty of a scholastic offence (including plagiarism) include refusal of a passing grade in the assignment, refusal of a passing grade in the course, suspension from the University, and expulsion from the University.

Plagiarism:

Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the 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 The University of Western Ontario and Turnitin.com (<http://www.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. Software currently in use to score computer-marked multiple-choice tests and exams performs a similarity review as part of standard exam analysis.

5. PROCEDURES FOR APPEALING ACADEMIC EVALUATIONS

All appeals of a grade must be directed first to the course instructor. If the student is not satisfied with the decision of the course instructor, a written appeal is to be sent to the School Chair. If the response of the Chair is considered unsatisfactory to the student, they may then submit a written appeal to the Office of the Dean. If the student is not satisfied with the decision of the Dean, they may appeal to the Senate Review Board Academic (SRBA), if there are sufficient grounds for the appeal and if the matter falls within the jurisdiction of the SRBA. For information on academic appeals consult your Academic Advisor or see the Student Academic Appeals – Undergraduate in the Academic Calendar http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_14.

Note that final course marks are not official until the Academic Dean has reviewed and signed the final grade report for the course. If course marks deviate from acceptable and appropriate standards, the Academic Dean may require grades to be adjusted to align them with accepted grading practices.

6. PREREQUISITES

Unless you have either the prerequisites for a course or written special permission from the Dean to enroll in it, you will be removed from the 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 prerequisite(s).

7. SUPPORT

Support Services

The Brescia University College Registrar's website, with a link to Academic Advisors, is at <http://brescia.uwo.ca/academics/registrar-services/>. Students can access supports through Brescia's Student Life Centre (<http://brescia.uwo.ca/life/student-life/>) and Learning Skills Services at Western (<https://www.uwo.ca/sdc/learning/>)

Mental Health and Wellness

Students may experience a range of issues that can cause barriers to your learning, such as increased anxiety, feeling overwhelmed, feeling down or lost, difficulty concentrating and/or lack of motivation. Services are available to assist you with addressing these and other concerns you may be experiencing. You can obtain information about how to obtain help for yourself or others through **Mental Health & Wellness at Brescia** (<http://brescia.uwo.ca/life/mental-health-wellness/>) and **Health and Wellness at Western**, http://uwo.ca/health/mental_wellbeing/index.html.

Sexual Violence

All members of the Brescia University College community have a right to work and study in an environment that is free from any form of sexual violence. Brescia University College recognizes that the prevention of, and response to, Sexual Violence is of particular importance in the university environment. Sexual Violence is strictly prohibited and unacceptable and will not be tolerated. Brescia is committed to preventing Sexual Violence and creating a safe space for anyone in the Brescia community who has experienced Sexual Violence.

If you or someone you know has experienced any form of Sexual Violence, you may access resources at <http://brescia.uwo.ca/life/sexual-violence/>.

Portions of this document were taken from the Academic Calendar, the Handbook of Academic and Scholarship Policy and the Academic Handbook of Senate Regulations. This document is a summary of relevant regulations and does not supersede the academic policies and regulations of the Senate of the University of Western Ontario.
