Schulich MEDICINE & DENTISTRY

Western Science

Bachelor of Medical Sciences (BMSc) Program

Anatomy and Cell Biology

ACB4451F – Integrative Neuroscience – In person (001)

Course outline for Fall 2022

THRIVE together

Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the Digital Student Experience website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: https://www.uwo.ca/health/.

1. **Technical Requirements:** In person learning for all course components. Optional components for additional on-line experience:

Stable internet connection

Laptop or computer

2. Important Dates:

Classes Start	Reading Week	Classes End	Study day(s)	Exam Period
September 7	October 31-November 7	December 8	December 9	December 10 - 22

* November 12, 2022: Last day to drop a first-term half course or a first-term full course without penalty

3. Contact Information

Course Coordinator	Contact Information
Dr. Shawn Whitehead	shawn.whitehead@schulich.uwo.ca

Instructor(s) or Teaching Assistant(s)	Contact Information
Dr. Susanne Schmid	susanne.schmid@schulich.uwo.ca
Dr. Derek Mitchell	dmitch8@uwo.ca
Victoria Jaremek	vjaremek@uwo.ca
Sarah Myers	smyers33@uwo.ca
Pedro Marinho	pmarinh@uwo.ca
Elnaz Farahani	efaraha3@uwo.ca
Hasan Polat	hpolat@uwo.ca

4. Course Description and Design

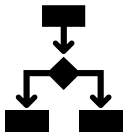
Delivery Mode: In-person, assignments/labs – remote

This course examines brain function underlying specific fundamental behavioural tasks. Topics include learning and memory, reward and addiction, neurodevelopment and regeneration, motor systems, the neuroendocrine system, and neurodegenerative diseases.

The course emphasizes the integrative understanding of the connection between molecular/cellular processes and behaviour. Virtually, students will be exposed to labs, design and protocol experiments, and presenting on neurobiological topics.

The first part of the course will briefly repeat some basics of neuroscience and will focus on consolidation of this knowledge by applying the concepts through the labs. The lectures will have the goal to bring all students to a similarly high level of understanding the cellular principles underlying neuronal function.

This first part will also focus on specific skills, such as designing and documenting an experiment, writing a protocol, using a brain atlas in order to identify brain structures, searching for literature in online databases, working in a team, etc.



The second part of the course will focus on different systems, and the brain structures and mechanisms involved in these systems. Occasionally, specialists that do research here at UWO within the specific topics will give a guest lecture. This will also provide a glimpse of the neuroscience research that is going on here at Western.

Timetabled Sessions

Component	Date(s)	Time
Lecture/Lab	T/Th	10:30-12:30

- ☑ Attendance at sessions is required
- ☑ A recording will be provided of the sessions

All course material will be posted to OWL: http://owl.uwo.ca. Any changes will be indicated on the OWL site and discussed with the class.

If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Google Chrome or Mozilla Firefox are the preferred browsers to optimally use OWL; update your browsers frequently. Students interested in evaluating their internet speed, please click here.

5. Learning Outcomes

Upon successful completion of this course, students will be able to:

- Develop basic understanding of neural cells, structures, and systems
- Develop appreciation of scientific research and methodology
- Perform critical analysis of scientific literature
- Connect molecular mechanisms across multiple neurological diseases and injuries
- Develop an understanding on what it's like to do graduate school!

6. Course Content and Schedule

September 8, 2022	Introduction, Rules, Course overview	Whitehead
September 13, 2022 **September 15, 2022**	Brain evolution, Structure of the Nervous System *Assignment available: Neuroanatomy of the human CNS*	Whitehead
September 20, 2022 **September 22, 2022**	Neurons & Glia, Structure & Function of neurons *Assignment available: Histology*	Whitehead
September 27, 2022 **September 29, 2022**	Neurotransmitter systems, Synaptic transmission *Assignment available: Experimental design*	Whitehead
October 4, 2022 **October 6, 2022**	Neuron membrane properties, Learning, Memory and Cognition *Assignment available: Protocol design (remotely)*	Schmid
October 11, 2022 **October 13, 2022**	Research Life – is grad school for you? *Assignment available: connect with a grad student*	Whitehead
October 18, 2022 **October 20, 2022**	Stroke; Cell death Student presentations	Whitehead
October 25, 2022 **October 27, 2022**	Alzheimer's disease; Inflammation Student Presentations	Whitehead
November 1-5, 2022	*Reading week*	
November 8, 2022 **November 10, 2022**	Parkinson's disease; Oxidative stress Student presentations	Whitehead
November 15, 2022 **November 17, 2022**	Empathy: Emotional and cognitive facets; Autism and Psychopathy Student presentations	Mitchell
November 22, 2022 **November 24, 2022**	Decision making: Reversal learning; reinforcement value encoding disorder; Frontotemporal dementia and addition Student presentations	Mitchell

November 29, 2022 **December 1, 2022**	Executive and emotional attention; Attention-deficit/hyperactivity disorder and Psychopathy Student presentations	Mitchell

7. Participation and Engagement

- ☑ Students are expected to participate and engage with content as much as possible
- ☑ Students can also participate by interacting in the forums with their peers and instructors

8. Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Weighting	Due Date
Neuroanatomy assignment	5%	September 19, 2022, 9:00 PM
Histology assignment	5%	September 26, 2022, 9:00 PM
Experimental design assignment	10%	October 5, 2022, 9:00 PM
Protocol design assignment	10%	October 12, 2022, 9:00 PM
Grad school assignment	10%	November 16, 2022, 9:00 PM
Presentation	20%	TBD
Final Exam (cumulative)	40%	TBD

- ☑ All assignments are due at 9:00 PM EST unless otherwise specified
- ☑ Students are responsible for ensuring that the correct file version is uploaded; incorrect submissions including corrupt files could be subject to a 0
- ☑ Written assignments will be submitted to Turnitin (statement in policies below)
- ☑ After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days
- ☑ Any grade appeals on assignments or exams must be received within 3 weeks of the grade being posted.

Click here for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Information about late or missed evaluations:

- ☑ Late assessments will not be accepted

9. Communication:

☒ Students should check the OWL site every 24 – 48 hours

☒ Emails will be monitored daily; students will receive a response in 24 – 48 hours

☒ This course will use the OWL forum for discussions

☒ Students should post all course-related content on the discussion forum so that everyone can access answers to questions

☒ The discussion forums will be monitored daily by instructors or teaching assistants

10. Office Hours:

☒ Students should contact the Instructor or TA to set up an appointment, either in person, or using Zoom

11. Resources

☒ All resources will be posted in OWL

☒ Textbooks are not required, however it is recommended that students pursue independent study using textbooks, journals or other materials to enhance their learning experience.

12. Professionalism & Privacy:

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

☒ All course materials created by the instructor(s) are copyrighted and cannot be sold/shared

☒ Recordings are not permitted (audio or video) without explicit permission

☒ Permitted recordings are not to be distributed

☒ All recorded sessions will remain within the course site or unlisted if streamed

Western is committed to providing a learning and working environment that is free of harassment ar discrimination. All **students**, staff, and faculty have a role in this commitment and have a responsibili to ensure and promote a safe and respectful learning and working environment. Relevant policie include Western's Non-Discrimination/Harassment Policy (M.A.P.P. 1.35) and No Discrimination/Harassment Policy – Administrative Procedures (M.A.P.P. 1.35).
Any **student,** staff, or faculty member who experiences or witnesses' behaviour that may b harassment or discrimination **must report the behaviour** to the Western's Human Rights Offic Harassment and discrimination can be human rights-based, which is also known as EDI-base (sexism, racism, transphobia, homophobia, islamophobia, xenophobia, antisemitism, and ableism) non-human rights-based (personal harassment or workplace harassment).

13. How to Be Successful in this Class:

Students enrolled in this class should understand the level of autonomy and self-discipline required to be successful.

1. Invest in a planner or application to keep track of your courses. Populate all your deadlines at the start of the term and schedule time at the start of each week to get organized and manage your time.
2. Make it a daily habit to log onto OWL to ensure you have seen everything posted to help you succeed in this class.
3. Follow weekly checklists created on OWL or create your own to help you stay on track.
4. Take notes as you go through the lesson material. Treat this course as you would a face-to-face course. Keeping handwritten notes or even notes on a regular Word document will help you learn more effectively than just reading or watching the videos.
5. Connect with others. Try forming an online study group and try meeting on a weekly basis for study and peer support.
6. Do not be afraid to ask questions. If you are struggling with a topic, check the online discussion boards or contact your instructor(s) and or teaching assistant(s).
7. Reward yourself for successes. It seems easier to motivate ourselves knowing that there is something waiting for us at the end of the task.

14. Western Academic Policies and Statements

Absence from Course Commitments

A. Absence for medical illness:

Students must familiarize themselves with the Accommodation for Illness Policy.

A student seeking academic accommodation for any **work worth less than 10%** must contact the instructor or follow the appropriate Department or course specific instructions provided on the course outline. Instructors will use good judgment and ensure fair treatment for all students when considering these requests. You are not required to disclose details about your situation to your instructor; documentation is not required in this situation, and you should not send any pictures to your instructor.

If you are unable to meet a course requirement for any **work worth 10% or greater** due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Academic Counseling as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. Please note that the format of a make-up test, exam, or assignment is at the discretion of the course coordinator.

A student requiring academic accommodation due to illness should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found at: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

B. Absence for non-medical reasons:

Student absences might also be approved for non-medical reasons such as religious holidays and compassionate situations. Please review the policy on Accommodation for Religious Holidays. All non-medical requests must be processed by Academic Counselling. Not all absences will be approved; pay attention to the academic calendar and final exam period when booking any trips.

C. Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examinations dates. These dates as well as other important information about examinations and academic standing can be found here.

Accommodation for Religious Holidays

The policy on Accommodation for Religious Holidays can be viewed here.

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Academic Offenses

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

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Accessible Education (AE) at 661-2111 x 82147 for any specific question regarding an accommodation or review The policy on Accommodation for Students with Disabilities.

Correspondence Statement

The centrally administered **e-mail account** provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts here.

Discovery Credit Statement

Students are permitted to designate up to 1.0 Discovery Credit course (or equivalent) for pass/fail grading that can be counted toward the overall course credits required for their degree program. The details of this policy and the deadlines can be found here.

Turnitin and other similarity review software

All assignments will be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. Students will be able to view their results before the final submission. 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.

15. BMSUE Academic Policies and Statements

Cell Phone and Electronic Device Policy (for in-person tests and exams)

The Schulich School of Medicine & Dentistry is committed to ensuring that testing and evaluation are undertaken fairly across all our departments and programs. For all tests and exams, it is the policy of the School that any electronic devices, i.e., cell phones, tablets, cameras, or iPod are strictly prohibited. These devices MUST be left either at home or with the student's bag/jacket at the front of the room and MUST NOT be at the test/exam desk or in the individual's pocket. Any student found with one of these prohibited devices will receive a grade of zero on the test or exam. Non-programmable calculators are only allowed when indicated by the instructor. The program is not responsible for stolen/lost or broken devices.

Copyright and Audio/Video Recording Statement

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. You must always ask permission to record another individual and you should never share or distribute recordings.

Rounding of Marks Statement

Across the Basic Medical Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. ***Final grades*** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark "bumping" will be denied.

16. Support Services

The following links provide information about support services at Western University.

Academic Counselling (Science and Basic Medical Sciences)

Appeal Procedures

Registrarial Services

Student Development Services

Student Health Services