

Anatomy & Cell Biology
ANATCELL9569B Clinical Neuroanatomy

Course outline for Winter 2025



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*



Stable internet connection



Laptop or computer



Working microphone



Working webcam

*Laptop or computer and internet connection required to access OWL. Microphone and webcam will only be needed if a transition to virtual delivery is required.

2. Course Overview

Requisites:

Prerequisite(s): Neuroscience 2000, ANATCELL3319, ANATCELL3200B or equivalent

Corequisite(s): None

Antirequisite(s): None

Enrollment: Clinical Anatomy MSc/PhD graduate students. Special permission requests will also be considered for students enrolled in the ACB or Neuroscience graduate programs. Enrollment limit is 15 students, auditing of the course is not permitted.

Course description: The purpose of ACB9569B is to provide a general introduction to the structure and function of the human nervous system. Lectures will provide an overview of the anatomy, interconnections and function(s) of specific regions/structures of the human nervous system. The laboratories offer a hands-on opportunity to identify the major landmarks of the brain and better understand the three-dimensional architecture of the brain and spinal cord. Collectively, the lectures and laboratories will provide the anatomical and functional foundation necessary to understand disorders of the nervous system. A variety of disorders affecting the nervous system, such as stroke, schizophrenia, cancer, Parkinson's disease and Huntington's

disease, will be discussed in terms of clinical signs/prognosis and cause/pathology. In addition, clinical issues will be examined using studies. Each student will be assigned a case study to independently investigate and present to the class using basic and clinical primary research sources. Finally, students will work collectively in small groups to generate a Public Information Brochure focused on a neuroanatomical topic of interest.

	Delivery	Date	Time
Lecture	In Person – See course site	See course site	See course site
Laboratory	In Person – See course site	See course site	See course site
Tutorial	In Person – See course site	See course site	See course site

If you need technical assistance, support is available on the [OWL Help page](#). Alternatively, you can contact the [Western Technology Services Helpdesk](#). They can also be contacted by phone at 519-661-3800 or ext. 83800.

[Google Chrome](#) or [Mozilla Firefox](#) are the preferred browsers for optimal use of OWL. Be sure you are using the latest version of the browser.

Statement on Use of Electronic Devices: The use of electronic devices such as laptops and tablets are permitted including during the final exam. However, electronic devices are permitted as learning aids, not to surf the net, Tweet, Facebook, watch YouTube videos or engage in other distractions during lectures. Recording (audio/video) of the lectures or laboratories and/or distribution of the lecture/laboratory materials is not permitted without the express written consent of the course coordinator.

Privacy and Copyright: Zoom sessions will not be recorded or distributed by the instructors. Students are likewise expected to refrain from recording, distributing, or disrupting virtual lectures and/or tutorial sessions. Lecture materials and notes, test, exam and assignment materials contained in this course are the copyrighted property of the course instructors. Recording and/or distribution of course materials/lectures is not permitted without the written consent of the course instructors. This includes posting course materials and/or modified class notes or ANY information related to the content of course quizzes, assignments tests or exams on public (e.g. Facebook, Twitter) or pay sites such as "OneClass", "Quizlet" or any other similar website.

2. Instructor Information

Instructors	Email	Contact Information
Dr. Andrew Deweyert (Course Coordinator)	See course site	Email or by appointment.
Dr. Raj Rajakumar (Course Instructor)	See course site	Email or by appointment.
Stephen Magliocchetti (Teaching Assistant)	See course site	Email or by appointment.

3. Course Content and Schedule

Date	Topic	Instructor
Jan. 6th Tutorial	Welcome and Course Overview	AD
Jan. 9th Lecture	Blood Supply, Meninges and CSF	RR
Jan. 13th Laboratory	Blood Supply and Meninges Lab Demo/Independent Learning Laboratory	AD/SM
Jan. 16th Lecture	Brain Embryology	SM
Jan. 20nd Lecture	Spinal Cord	RR
Jan. 23rd Lecture	Brainstem and Cranial Nerves Draft Public Information Brochure Due	AD
Jan. 27th Laboratory	Brainstem, Cranial Nerves and Spinal Cord Student Lab Demo/Independent Learning Laboratory	AD/SM
Jan. 30th Lecture	Brainstem Reticular Formation and Diencephalon	AD
Feb. 3rd	Public Information Brochure Feedback Due	
Feb. 6th Lecture	Cerebral Cortex	RR
Feb. 10th Laboratory	Cerebral Cortex – External Student Lab Demo/Independent Learning Laboratory	AD/SM
Feb. 13th Lecture	Cerebellum, Ventricles and White Matter Final Public Information Brochure Due	AD
Feb. 17th	Family Day	
Feb. 20th Lecture	Basal Ganglia	RR
Feb. 24th Laboratory	Cerebellum, Diencephalon and Ventricles Student Lab Demo/Independent Learning Laboratory	AD/SM
Feb. 27th Lecture	Limbic System	RR
Mar. 3rd Laboratory	Basal Ganglia and Lateral Ventricles Student Lab Demo/Independent Learning Laboratory	AD/SM
Mar. 6th Lecture	General Sensory Systems	AD
Mar. 10th Laboratory	White Matter Student Lab Demo/Independent Learning Laboratory	AD/SM
Mar. 13th Lecture	Special Sensory Systems	RR
Mar. 17th Laboratory	Plastinated Brain Day Student Lab Demo	AD/SM
Mar. 20th Lecture	Motor Systems	AD
Mar. 24th Test	Viva Laboratory Test	AD/SM
Apr. 3rd Lecture	Autonomic Nervous System, Enteric Nervous System and Gut Microbiome	AD

Apr. 7 th Presentations	Case Study Presentations	AD/SM
Apr. 10 th Presentations	Case Study Presentations	AD/SM
TBD	Final Exam Released/Due	

4. Evaluations

Assessment	Format	Weighting	Due Date
Public Information Brochure ¹			
Draft Brochure	Canva	5%	Jan. 23 rd
Student Feedback on Brochure	Word	5%	Feb. 3 rd
Final Brochure Submission	Canva	10%	Feb. 13 th
Laboratory Demonstration ²	Presentation – In Class	20%	Jan. 27 th . Feb. 10 th , Feb. 24 th , Mar. 3 rd , Mar. 10 th , and Mar 17 th .
VIVA Laboratory Test ³	Oral – In Class	20%	Mar 24 th .
Case Studies ⁴	Presentation – In Class	20%	Apr. 7 th and Apr. 10 th .
Final Exam ⁵	Take Home	20%	TBD

¹The public information brochure will be completed as a small group exercise (2-3 students/group). The goal is to create a lay language brochure that can provide information to the public about a specific structure/function of the brain or a neurological/neuropsychiatric disorder. The public information brochure will be completed in several steps: Preparing a draft. Reviewing and providing feedback on brochures submitted by other groups. Submission of a revised final brochure for evaluation.

²Students will prepare and deliver a demonstration for their classmates prior to each laboratory session based on a list of structures that students should be able to identify.

³The VIVA laboratory exam will be a question-and-answer session administered by the course instructors using wet specimens, plastinated brains and/or models.

⁴A case study will be selected by each student enrolled in the course. The student is responsible for researching the case and delivering a presentation that includes an overview of the case, the region(s) of the brain affected, the possible cause(s) for the symptoms presented, treatment options and prognosis. There will be an opportunity for questions and discussions at the end of each case study.

⁵The final exam will consist of essay style questions and require independent reading.

***NOTE:** Turnitin and AI detection software will be used to detect plagiarism and work completed by AI engines such as ChatGPT.

Information about late or missed evaluations: Unaccommodated missed assessments or late assignment submissions (original or makeup) will receive a grade of zero. If academic consideration for a missed test, exam, presentation etc. is obtained, a make-up assessment or an extension of the due date will be provided. However, it is important to note that make-up assessments may be in a different format than the original assessment. If a student repeatedly misses make-up assessments and/or extended deadline dates but has received academic consideration, the student may receive an INC and not be permitted to complete the assignment until the next time the course is offered.

Evaluation of Student Performance: The minimum grade needed to pass the course for ACB Clinical Anatomy students is 80%. The minimum grade needed to pass the course for research intensive graduate students from other programs is dependent upon the requirements of the home department/program.

5. Additional Resources

There are a variety of good neuroanatomy texts, atlases and dissectors available and most are suitable for the course. However, the course instructors will use the following as guides for the course:

The Human Nervous System: An Anatomical Viewpoint (10th Edition), (2013), John A. Kiernan & Nagalingam Rajakumar, Lippincott Williams and Wilkins, ISBN 13: 978-1451173277.

Human Neuroanatomy: A Text, Brain Atlas and Laboratory Dissection Guide (3rd Edition), (2009), J. Edward Bruni and Donald G. Montemurro, Oxford University Press, ISBN 13: 978-0195371420.

PowerPoint lectures, laboratory notes and case studies will be available from the instructors on the OWL website (<https://owl.uwo.ca/portal>).

Specimens (models, plastinated brains, cross-sections and fixed brain specimens for dissection) are available in the gross anatomy laboratory (M483), anatomy museum (D4002) and from Tom Chrones in the department. Virtual 3D brain images are available at <http://360anatomy.uwo.ca/>.

6. Western Academic Policies and Statements

Student Code of Conduct and Scholastic Offenses

Western students are expected to follow the [Student Code of Conduct](#) and understand the guidelines governing [Graduate Student Scholastic Offences](#) including plagiarism and cheating. Scholastic offenses are taken very seriously and can have very severe consequences. Students

will be expected to agree to an academic integrity pledge before completing the test, exam and some assignments.

Turnitin and other similarity review software: Assignments, tests and exams 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 Western University and [Turnitin.com](https://www.turnitin.com).

Policy on Accommodation for Medical and non-Medical Illness

According to the Policy for Academic Consideration, documentation is required for absences from tests or exams for [Medical](#) and [non-Medical](#) reasons. A student requiring academic accommodation due to illness should use the [Student Medical Certificate](#) when visiting an off-campus medical facility or Student Health Services. Documentation must be submitted by the student directly to the graduate program or SGPS. The date and nature of a make-up test or exam will be determined by the instructor in consultation with the student.

Student Accessibility Services

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program.

Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are encouraged to register with Student Accessibility Services, a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both SAS and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction.

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](#).

8. Support Services

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

[Appeal Procedures](#)

[Western Graduate and Postdoctoral Studies](#)
[Student Development Services](#)
[Student Health Services](#)