



BIOM*3000 Functional Mammalian Neuroanatomy

Fall 2019

Section(s): 01

Department of Biomedical Sciences

Credit Weight: 0.50

Version 3.00 - July 11, 2019

1 Course Details

1.1 Calendar Description

The main objective of the course is to understand the functional organization of the mammalian nervous system. It includes a review of the major cell types found in the nervous system and an overview of the basic physiological principles of brain function followed by a detailed three dimensional and histological examination of the mammalian brain and spinal cord. Emphasis is placed on understanding the relationship between anatomy, physiology and behaviour.

Pre-Requisites:

1 of BIOM*3200, HK*3810, HK*3940, NEUR*2000,
PHYS*2030, PSYC*2410, ZOO*3200, ZOO*3600

Restrictions:

This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations or semester levels during certain periods. Please see the department of Biomedical Sciences website for more information.

1.2 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

1.3 Final Exam

Final exam date, time and location is to be determined and may be subject to change. Please see WebAdvisor or CourseLink for the latest information.

2 Instructional Support

2.1 Instructional Support Team

Course Co-ordinator:

Tarek Saleh

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3 Learning Resources

3.1 Recommended Resources

Clinical Neuroanatomy & Neuroscience, 7th Edition (Textbook)
 ISBN: 9780702058325

Essentials of the Human Brain (Textbook)
 ISBN: 9780323045704

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Identify major landmarks of the central nervous system and correlate these landmarks with function
 2. Describe the basic structural and morphological stages of the development of the central nervous system
 3. Integrate structure and function of the nervous system to explain physiological and behavioural responses to external and external stimuli
 4. Effectively communication scientific ideas by constructing and giving a presentation based on a nervous system disease or pathology
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5 Teaching and Learning Activities

5.1 Lecture

| | |
|----------------|---|
| Week 1 | |
| Topics: | Introduction to Neuroanatomy/Cells of the NS |
| Week 1 | |
| Topics: | Action Potentials & the Synapse/Intro to Case Studies |
| Week 2 | |
| Topics: | Embryology of the CNS |
| Week 2 | |

| | |
|----------------|---|
| Topics: | Brain Topography & the Meninges/Case Studies (flow chart) |
| Week 3 | |
| Topics: | Ventricles, CSF & Blood Supply |
| Week 3 | |
| Topics: | Spinal Cord & Spinal Tracts |
| Week 4 | |
| Topics: | Cranial Nerves I |
| Week 4 | |
| Topics: | Cranial Nerves II |
| Week 5 | |
| Topics: | Term test #1 (in-class). Covers lectures 1-8 |
| Week 6 | |
| Topics: | Human Anatomy Lab outreach tour |
| Week 6 | |
| Topics: | Organization of the brainstem |
| Week 7 | |
| Topics: | The Cerebral Cortex |
| Week 7 | |
| Topics: | The Cerebellum |
| Week 8 | |
| Topics: | Basal Ganglia I |
| Week 8 | |
| Topics: | Thalamus & Hypothalamus |
| Week 9 | |
| Topics: | Term test #2 (in-class). Covers lectures 9-13 |
| Week 9 | |
| Topics: | Hippocampus & Amygdala |
| Week 15 | |

Topics: **Final exam (date and location tba; check CourseLink site).
Covers lectures 1-14**

5.2 Seminar

Week 10

Topics: Case Studies 1, 2, 3

Week 10

Topics: Case Studies 4, 5, 6

Week 11

Topics: Case Studies 7, 8, 9

Week 11

Topics: Case Studies 10, 11, 12

Week 12

Topics: Case Studies 13, 14, 15

Week 12

Topics: Case study 16, 17, 18

Week 13

Topics: Case study 19, 20

6 Assessments

6.1 Assessment Details

Test #1 (15%)

Date: Week 5
in class (8:30-9:50am)

Test #2 (15%)

Date: Week 9
in-class (8:30-9:50am)

Case Study (20%)

Symposia throughout the semester

Participation (15%)

Assessed throughout the term.

Participation will be graded throughout the semester the following way:
Completion of case study peer reviews: 20 @ 0.5% each

Attendance at human anatomy lab: 5%

Final exam (35%)

Date: Week 17, TBA
11:30 am -1:30 pm

Comprehensive covering lectures 1-14

7 Course Statements

7.1 Term Tests & Final Exam

The term tests and final exam will consist of a combination of multiple choice, definitions, diagram labeling, and short answer questions. The term tests are NOT cumulative, but the final exam will be cumulative, covering all lectures (1-14) presented up to the final exam date.

The term tests are scheduled **inside of class time (1 hr and 20 mins)**.

7.2 Case Studies

Case studies will be presented inclass throughout the second half of the course. Students will be randomly assigned into groups of 4-5 students and given a patient clinical diagnosis. Groups will work together to construct a case study around a patient and present this diagnosis to the class. Within the group presentation, students should address normal

anatomy and functioning of pertinent nervous system structures and how this has been altered in the patient using a flow chart. **See the course outline for the case study schedule, and CourseLink for your Group assignment.** Presentations will be evaluated by the course instructor and by peer evaluation.

7.3 Participation

Human Anatomy Visit

Students will visit the Human Anatomy Lab in the OVC. Students will visit several stations that contain specimens pertaining to topics that have been discussed in the course. Human Anatomy Volunteers will discuss the specimens and students will have the opportunity to ask questions and visualize structures such as the brain, spinal cord, cranial nerves, and blood supply.

7.4 Assignment Submission & Late Policy

Students are expected to complete their coursework on time. Any late submissions will result in a late penalty of 20% per day (within 24 hours) with a mark of zero for assignments handed in more than 5 days (120 hours) after the due date.

7.5 Attendance/Classroom Etiquette

Students are expected to come to class on time and turn cell phones to vibrate/silent so as to not disrupt the lecture and fellow students. Laptop computers are permitted in the classroom; however, research has shown that these devices can be disruptive to the classroom environment if students are not engaging in course-related activities such as note taking. Please be considerate of your fellow peers and use laptops for course-related activities only while in the classroom. If a student is using a laptop for unrelated activities such as social media, emailing, or texting and it is evident that fellow students are being disrupted, the instructor reserves the right to ask the student to leave the classroom.

7.6 CourseLink

Will be used extensively throughout BIOM*3000. Please visit the site often to make sure you are up-to-date with any changes.

- Lectures: All lecture slides and other important course materials will be posted under the “Content” tab.
- Newsfeed: Any last minute changes and general announcements will be posted within the Newsfeed.
- Discussion Boards: These forums allow students to ask questions and discuss what is being learned in class. Please direct all course content- related

questions to the appropriate forum. Chances are that at least one other student has the same question too!

7.7 Remark Policy

Requests for re-evaluation of a term test or presentation must be made, in writing, to the course instructor within one week of return of the term test or presentation evaluation. Only tests that are written in pen will be considered for re-marking. All requests must include appropriate reasoning for why the student deserves additional marks. **Please be aware that an approval for a remark will result in the whole test or the whole presentation being remarked.** This may result in an increase, decrease, or no change in the original mark of the term test or presentation.

7.8 Religious Observance

Information about the University of Guelph's policy on academic accommodation of religious obligations can be found online.

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current>

7.9 Academic Consideration for Missed Tests/Assignments

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise your program coucilor or the course instructor in writing, with your name, id#, and e-mail contact, as soon as possible. Please be aware that other exams, vacation, or work schedules are not valid excuses for missing coursework since you can plan ahead and make alternate arrangements if necessary

If the final exam is missed, application for a deferred exam must be made through a program counselor and The Office of the Registrar as outlined in the Academic Consideration and Appeals section of the Undergraduate Calendar.

See the undergraduate calendar for information on regulations and procedures for Academic Consideration. <https://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

8 University Statements

8.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

8.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared

responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

More information can be found on the SAS website
<https://www.uoguelph.ca/sas>

8.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

8.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's

procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>
