Schulich MEDICINE & DENTISTRY

Western Science

Bachelor of Medical Sciences (BMSc) Program

Department of Physiology and Pharmacology

Physiology and Pharmacology 3000E

Course outline for Fall/Winter 2021-2022

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:

- Stable internet connection
- Laptop or computer
- Working microphone
- Working webcam
- Lab book

2. Important Dates:

Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
September 8	November 1–7	December 8	December 9	December 10–21

* November 12, 2021: Last day to drop a first-term full course without penalty

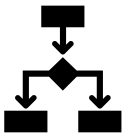
Classes Resume	Reading Week	Classes End	Study day(s)	Exam Period
January 3	February 19–27	April 1	April 2/3	April 4–30

3. Contact Information

Course Coordinator	Contact Information
Dr. Oana Birceanu	obircean@uwo.ca

Instructor(s) or Teaching Assistant(s)	Contact Information
Dr. Anita Woods	anita.woods@uwo.ca
Dr. Angela Beye	abeye2@uwo.ca
Dr. Christina Godin Vanderboor	cgodin2@uwo.ca

4. Course Description and Design



Delivery Mode: in person with online components

Almost all our knowledge of physiology and pharmacology is based on the results of laboratory experiments. It was through carefully designed experiments that most of the information presented in lecture (Physiology 3120, 3140a and Pharmacology 3620) was obtained. The same experimental approach is being used to solve the many remaining mysteries about how the body works and how diseases are treated with medications. We believe that to thoroughly understand the science of physiology and pharmacology, one must understand the experimental basis. This course is targeted at learning the scientific method along with data analysis, which is applied in both disciplines of physiology and pharmacology. Therefore, the laboratory exercises are a fundamental part of the study of physiology and/or pharmacology.

Course delivery with respect to the COVID-19 pandemic

Although the intent is for this course was to be delivered in-person, the changing COVID-19 landscape may necessitate some or all of the course to stay online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any assessments affected will be conducted online as determined by the course instructor.

When deemed necessary, tests and examinations in this course will be conducted using a remote proctoring service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:https://remoteproctoring.uwo.ca

Overall Objectives: These laboratory exercises will

1. illustrate the use of the scientific method, and the nature, complex and endless variability in scientific research.
2. demonstrate the physiological/pharmacological processes studied in class as they apply to a living organism or cell.
3. emphasize the limitations that exist in the methods used in scientific investigation and appreciate as science students, that one must continue to critically evaluate the material presented in lectures and textbooks.

Prerequisites: Biochemistry 2280A; either Chemistry 2213A or 2273A; one of Physics 1028A/B, 1301A/B or 1501A/B and one of Physics 1029A/B, 1302A/B or 1502A/B; and 1.0 course from: Applied Mathematics 1201A/B, 1413, Calculus 1000A/B or 1500A/B, Calculus 1301A/B or 1501A/B, Mathematics 1600A/B. A minimum average of 75% in the previous year is required. Open only to students who are registered in Years 3 or 4.
Corequisite(s): N/A
Antirequisites: The former Physiology 3130z or Pharmacology 3580z.
Pre-or Corequisite(s): Either Physiology 3120 or Pharmacology 3620.
Extra Information: 3 laboratory hours, 1.0 course.

Timetabled Sessions

Component	Date(s)	Time
In person	Tues/Wed	1:30 – 4:30 p.m.
Virtual (synchronous) - when not in person	Tues/Wed	1:30 – 4:30 p.m.
Virtual (asynchronous)	As required	

- ☑ **Asynchronous pre-work must be completed prior to synchronous and in-person sessions, as required (a schedule on OWL is set up for you by the instructor)**
- ☑ **Attendance at sessions is required**
- ☑ **Missed work should be completed within 24 hours – add info here about missed work with a medical form**
- ☑ **A recording will be provided of the synchronous 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 and Safari 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 a hypothesis and design an experiment with appropriate controls to test the hypothesis
- organize, analyze and interpret scientific data, using appropriate experimental and mathematical tools
- select the correct statistical test and apply it to a given data set
- communicate experimental findings, data and concepts effectively to a diverse audience utilizing a range of formats such as laboratory reports, scientific posters and oral presentations
- work and learn in both individual and collaborative ways, with others of diverse abilities
- demonstrate an ethical approach to physiological and pharmacological research

6. Course Content and Schedule (refer to weekly schedule on OWL)

FALL TERM

Fall Term			
Term Week	**Dates**	**Rotation-Week: Topic**	**Instructors/Term test dates**
1	Sept 7, 8	R1-W1: No class	Multiple instructors and TAs
2	Sept 14, 15	R1-W2: Welcome and intro lecture; Q&A	"
3	Sept 21, 22	R1-W3: Building a standard curve 1	"
4	Sept 28, 29	R1-W4: Building a standard curve 2	"
5	Oct 5, 6	R1-W5: Experiments	"
6	Oct 12, 13	R1-W6: Experiments	"
7	Oct 19, 20	R1-W7: Data analysis and report guidelines	"
8	Oct 26, 27	R1-W8: Feedback and writing time; Lab book due for marking	"
9	**Nov 1–5**	**Reading Week**	**N/A**
10	Nov 9, 10	R2-W1: Experiment background & hypothesis generation	"
11	Nov 16, 17	R2-W2: Experiments	"
12	Nov 23, 24	R2-W3: Data analysis, Poster guidelines	"
13	Nov 30, Dec 1	R2-W4: work on poster	Term test 1 on Dec 3rd, 2021
14	Dec 7, 8	R2-W5 poster presentation (virtual); Lab book due for marking	"

WINTER TERM

Winter Term			
Week	**Dates**	**Topic**	**Instructor**
	Jan 4, 5	**No class**	**N/A**
1	Jan 11, 12	R3-W1: Exp background and hypothesis generation **– virtual**	**Various – virtual**
2	Jan 18, 19	R3-W2: Experiments	"
3	Jan 25, 26	R3-W3: Experiments	"
4	Feb 1, 2	R3-W4: Data analysis	"
5	Feb 8, 9	R3-W5: Data analysis Long-report guidelines	"
6	Feb 15, 16	R3-W6: writing feedback; Lab book due for marking	"
7	**Feb 21–25**	**Reading Week**	**N/A**
8	Mar 1, 2	R4-W1: Exp background and hypo generation - **virtual**	
9	Mar 8, 9	R4-W2: Experiments	"
10	Mar 15, 16	R4-W3: Experiments	"
11	Mar 22, 23	R4-W4: Experiments	Term test 2 on Mar 25th 2022
12	Mar 29, 30	R4-W5: data analysis and presentation prep	"
13	April 5, 6	R4-W6: Presentations (**virtual or in person**); Lab book due for marking	"

7. Participation and Engagement

- ☑ Students will only be allowed in the laboratory if they have appropriate PPE: lab coat, goggles/safety glasses and a mask.
- ☑ Students are expected to participate and engage with content as much as possible, for both in person and virtual work (synchronous and asynchronous)
- ☑ Students can participate during online sessions or post questions after watching the recording
- ☑ Students can also participate by interacting in the forums with their peers and instructors
- ☑ Given the current uncertainties, please be prepared to switch completely to online delivery of the course with short notice

8. Evaluation

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

Assessment	Format	Weighting	Due Date
Online serial dilution activity	Online assignment	2.5%	Oct 1st at 6:00 p.m.
Online stats module	Online assignment	2.5%	Oct 8th at 6:00 p.m.
Toolbox 1	Online assignment	2.5%	October 29th at 6:00 p.m.
Toolbox 2	Online assignment	2.5%	October 29th at 6:00 p.m.
Toolbox 3	Online assignment	2.5%	October 29th at 6:00 p.m.
R1: short report	Written assignment	10%	October 29th at 6:00 p.m.
Lab book*	Written	1.25%	October 29th 12:00 p.m.
Total R1		**23.75%**	
R2 lay summary	Written assignment	5%	Nov 26th at 6:00 p.m.
R2 poster presentations	Online 3 min video – conference style	10%	Upload by Dec 7 (G2)/Dec 8 (Gr1) at 12:00 p.m.
Lab book*	Written	1.25%	Dec 10th at 12:00 p.m.
Total R2		**16.25%**	
TERM TEST 1	**Written**	**10%**	**Dec 3rd Time TBD**
Rotation 3 long report	Written report	20%	Feb 18th at 6:00 p.m.
Lab book*	Written	1.25%	Feb 18th at 12:00 p.m.
Total R3		**21.25%**	
Rotation 4 online presentations	Oral presentations	17.5%	April 5th (G2)/Apr 6th (Gr1)
Lab book*	Written	1.25%	April 8th at 12:00 p.m.
Total R4		**18.75%**	
TERM TEST 2	**Written**	**10%**	**March 25th Time TBD**
COURSE TOTAL		**100%**	

- ☑ ***Students are responsible for buying their own lab books and brining them to the laboratory for note taking and evaluations**.
- ☑ All assignments are due as specified.
- ☑ Written assignments will be submitted to Turnitin (statement in policies below).
- ☑ Students will have unlimited submissions to Turnitin. Submission to the actual assignment can only be made once, when confident with the writing originality.
- ☑ Rubrics will be used to evaluate assessments and will be posted with the instructions.
- ☑ A student may not receive the same grade as their group members if it is determined that the distribution of work was not equal.
- ☑ 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.

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 without self-reported absences or accommodation will be subject to a late penalty of 10 %/day
- ☑ Late assessments with self-reported absences or accommodation should be submitted within 24 hours of the end of the self-report or accommodation (e.g., due Friday 6:00 pm; self-report covers Sat-Sun; new deadline is Mon by 6:00 p.m. pm OR 24 hours after the end of the accommodation period)
- ☑ An assessment cannot be submitted after it has been returned to the class. The weight will be transferred in full to the next similar assessment (e.g. is term test 1 is missed, its weight is transferred to term test 2)
- ☑ OPTION 2: In case a laboratory is missed if the student does not pass the Covid self-assessment questionnaire, the group members will share the information with the student who missed the class on that specific day. This also applies if the student has to self-isolate and miss class for two consecutive weeks.

9. Communication:

- ☑ Students should check the OWL site every 24 – 48 hours
- ☑ Students should contact their instructor(s) and teaching assistant(s) using e-mail (for personal concerns) or MS Teams (for group questions)
- ☑ Emails will be monitored daily; students will receive a response in 24 – 48 hours
- ☑ This course will use MS Teams for discussions
- ☑ Students should post all course-related queries in their assigned Teams channel forum so that everyone can access the questions and responses

10. Office Hours:

- ☑ Office hours will be held remotely, by appointment, using MS Teams or Zoom.
- ☑ Office hours can be individual or as a group.

11. Resources

- ☑ All resources will be posted in OWL
- ☑ Questions and discussions will occur via MS Teams

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
- ☑ Students will be expected to take an academic integrity pledge before some assessments

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 and MS Teams** 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

Policy on Academic Consideration for Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a **self-reported absence** or via the **Academic Counselling** unit. Students have two self-reports to use throughout the academic year; absence from course commitments including tests, quizzes, presentations, labs, and assignments that are worth 30% or less can be self-reported. Self-reported absences cover a student for 48 hours (yesterday + today or today + tomorrow). Your instructor will receive notification of your consideration; however, you should contact your instructor immediately regarding your absence. Students are expected to submit missed work within 24 hours of the end of the 48-hour period. Please review details of the university's policy on academic consideration for student absences.

If you have used both their self-reported absences or will miss more than 48 hours of course requirements, a Student Medical Certificate (SMC) should be signed by a licensed medical or mental health practitioner and you should contact academic counselling. Academic Counselling will be operating virtually this year and can be contacted at scibmsac@uwo.ca.

Accommodation for Religious Holidays

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

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.

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.

Essay Course Guidelines

The guidelines for the minimum written assignments refer to the cumulative amount of written work in a course but excludes written work in examinations. You can read about essay course guidelines here.

An essay course must normally involve total written assignments (essays or other appropriate prose composition, excluding examinations) as follows:

- Full course (1000 to 1999): at least 3000 words
- Half course (1000 to 1999): at least 1500 words
- Full course (2000 and above): at least 5000 words
- Half course (2000 and above): at least 2500 words

The structure of the essay course must be such that in order to pass the course, the student must exhibit some minimal level of competence in essay writing and the appropriate level of knowledge of the content of the course.

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