

Physiology & Pharmacology

Digestion, Metabolism and Metabolic Disease – PHYSIOL 4100B/PHARM 4100B

Course outline for Winter Term 2021



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 (suggested)

2. Course Overview and Important Dates:



Delivery Mode	Dates	Time
Online	See section 6	See section 6

*Details about design and delivery of the course are listed below in Section 4

Classes Start	Reading Week	Classes End	Study day	Exam Period
January 11	February 13 - 21	April 12	April 13	April 14 - 30

*March 7, 2021: Last day to drop a second-term half course or a second-term full course without penalty

3. Contact Information

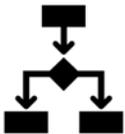


Course Coordinator	Contact Information
Dr. Rennian Wang	Use OWL message / rwang@uwo.ca
Dr. Nica Borradaile	Use OWL message

Instructor(s) or Teaching Assistant(s)	Contact Information
Dr. Rennian Wang	Use OWL Message / rwang@uwo.ca
Dr. Nica Borradaile	Use OWL Message
Ms. Rachel Wilson (TA)	Use OWL Message

4. Course Description and Design

This course will explore, in depth, concepts of gastrointestinal digestion and absorption, and post-absorptive metabolism, including hepatic and pancreatic physiology. Specific areas covered will include: gut-brain-liver axis and nutrient metabolism, pancreatic exocrine and endocrine physiology, and intestinal and hepatic glucose and lipid metabolism. All areas will be discussed with particular attention to relevant pathologies and disease states, including obesity, diabetes, and metabolic syndrome. Current and emerging therapeutic strategies for the treatment of these metabolic diseases will also be presented. The course will include a series of asynchronous online lectures on selected topics by two faculty members, one scheduled Zoom tutorial, and one scheduled Zoom debate session debates regarding current policy, treatment(s) and/or guidelines for the management of metabolic disease. Students will be expected to recall facts, recognize general concepts, understand and explain fundamental concepts, and synthesize information presented in lectures to solve problems and generate cohesive arguments. Students will be evaluated through two writing assignments, a midterm test and a final exam.



Prerequisite: Physiology 3120

Mode	Dates	Time	Frequency
Virtual synchronous*	Feb 8, Apr 5	11:30 AM – 1:30 PM	2 sessions
Virtual asynchronous	N/A	2 hours	weekly

- Attendance at synchronous sessions is required
- Missed work should be completed within **24** hours
- A recording will be provided for 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](#) or [Mozilla Firefox](#) are the preferred browsers to optimally use OWL; up you're 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:

- explain the inter-related functions of the gut-brain-liver axis and the pancreas in the control of glucose and lipid metabolism
- integrate concepts of physiological regulation of glucose and lipid metabolism with those of dysregulation during relevant pathologies and disease states
- identify and explain the mechanisms of action of current and emerging therapies for the treatment of metabolic diseases



6. Course Content and Schedule

Week	Dates	Topic	Instructor
1	Jan 11 – 17	A journey through the digestive tract	Wang
2	Jan 18 – 24	Pancreatic exocrine and endocrine function	Wang
3	Jan 25 – 31	Enteroendocrine Physiology in the GI system	Wang
4	Feb 1 – 7	Physiology of the liver and intestine	Borradaile
5	Feb 8 – 14	Glucose and lipid transport and metabolism 1; Zoom tutorial for Mid-term test, writing assignments, and debates Feb 8, 11:30 AM EST (will be recorded)	Borradaile; Borradaile/Wilson
6	Feb 15 – 21	Reading Week	N/A
7	Feb 22 – 28	Glucose and lipid transport and metabolism 2; Midterm test Feb 22, online, 2 hours, time TBA	Borradaile
8	Mar 1 – 7	Gut-brain-liver axis control food intake and glucose homeostasis	Wang
9	Mar 8 – 14	Gut microbiota and environmental factors in diabetes pathophysiology	Wang
10	Mar 15 – 21	Diabetes research targets & therapeutic strategies Writing assignment 1 due Mar 15	Wang
11	Mar 22 – 28	Pathophysiology of type 2 diabetes and metabolic syndrome	Borradaile
12	Mar 29 – Apr 4	Pharmacotherapeutic strategies for type 2 diabetes and metabolic syndrome	Borradaile
13	Apr 5 – Apr 12	Zoom debate session Apr 5, 11:30 AM EST Writing assignment 2 due Apr 5	Borradaile/Wang
14	Exam Period April 14-30th	Final Exam online 3 hours, TBA	



7. Online Participation and Engagement



- Students are expected to participate and engage with content as much as possible
- Students are expected to participate during Zoom sessions
- 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	Format	Weighting	Due Date
Midterm test	Short answer and essay, online, 2h	35%	Feb 22
Writing assignment 1	Essay, take home	10%	Mar 15
Writing assignment 2	Essay, take home	10%	Apr 5
Debate session	Synchronous Zoom, small groups, 3h, mandatory participation	5%	Apr 5
Final Exam	Short answer and essay, online, 3h	40%	April TBA

- All assignments are due at 11:55 pm EST unless otherwise specified
- Written assignments will be submitted to Turnitin (statement in policies below)
- Students will have 2 submissions to Turnitin
- Rubrics will be used to evaluate assessments and will be posted with the instructions
- 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 assignments without a self-reported absence or submitted to documentation to the academic counselling office will be subject to a late penalty **25 %/day**
- Late assignments with a self-reported absence should be submitted within **24 hours** of submission of the last day of the self-report
- A writing assignment cannot be submitted after it has been returned to the class; the weight will be transferred to the final exam
- If the make-up midterm test is missed, the weight will be transferred to the final exam
- In the case of a final exam weighted **at or above 75%** the exam will have an alternate 4 hours format which may include an oral component and additional essay question(s)
- If the make-up final exam is missed, the student will receive an INC and complete the exam the next time the course is offered

9. Communication:



- Students should check the OWL site every 24 – 48 hours
- Regular updates will be provided on the OWL announcements
- Students should email their instructor(s) and teaching assistant using OWL messages unless otherwise indicated
- 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:



- Office hours will be held Zoom by request, only if queries cannot be answered by OWL Forum or OWL Message

11. Resources



- All resources will be posted in OWL

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:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructors and TA are copyrighted and cannot be sold/shared
- Recordings are not permitted
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

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 instructors and or teaching assistant.
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 instructors 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](#).

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

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](#)