



## Department of Biology Biology 4562a Genes and Genomes 2023

### COURSE INFORMATION

Monday and Wednesday: in person  
The first lecture will be held on Monday September 11, 2022

Prerequisites: Completion of at least 1.5 Biology courses at the 3000 level or above; and registration in year 4 of an Honors Specialization module or a Major in Genetics offered through the Department of Biology; or permission of the instructor.

Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

### COURSE CONTACT INFORMATION

**Instructor:** Dr. Susanne Kohalmi Office: WSC319  
Office Hours: make an appointment by email: [skohalmi@uwo.ca](mailto:skohalmi@uwo.ca)  
Office hours will be held in person unless COVID requires online meetings which will use zoom.

Students must use their Western (@uwo.ca) email addresses when contacting their instructors and place the course number into the header.

### MODE of DELIVERY

In person. Monday and Wednesday

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

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. Lecture material and reading material will be posted prior to class time. The class is not recorded.

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.

## **PARTICIPATION AND ENGAGEMENT**

Students are expected to participate and engage with content as much as possible.

## **IMPORTANT DATES**

Final exam: TBA

Midterm exam: planned for October 18.

## **COURSE STRUCTURE**

- This is a lecture based course with 2 hours of lecture/week.
- This course has no assigned textbook. Required reading material will be available online. Please check OWL on a regular basis for news and updates (<http://owl.uwo.ca>)
- The lecture will cover a broad range of topics on plant and organelle genetics. Lecture material will be available through OWL:
  - (1) Introduction
  - (2) Genome structures (nuclear versus organelle)
  - (3) Replication and transcription of organelle genomes
  - (4) Organelle division
  - (5) Organelle inheritance
  - (6) Plant genetics and development (DNA transfer, Transformation strategies, Forward versus reverse genetic approaches, Analysis and use of transgenic plants)
  - (7) Autocatalytic introns
  - (8) RNA editing
  - (9) Protein import into organellesAdditional topics which will be covered time permitting.

This is a list of recommended textbooks in case of need (available through library):

General: Lewin: Genes

Lodish et al.: Molecular Cell Biology

Organelles: Gillham: Organelle Genes and Genomes

Hopkins: Introduction to Plant Physiology

Plant Molecular Biology: Hughes: Plant Molecular Genetics

Howell: Molecular Genetics of Plant Development

Westhoff: Molecular Plant Development: from Gene to Plant

## COURSE WEBSITE

<http://owl.uwo.ca>: Most material, including additional reading, and turnitin submissions will appear on the OWL site. In addition, important announcements will be made on OWL, and you are responsible for obtaining that information.

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. The missing of critical information due to your failure to check OWL cannot be used as a basis for appeal. Announcements about the course, can be sent to your UWO email address. It is your responsibility to keep this account in a state that allows you to receive email, and to check it regularly. As above, a failure to check your UWO email cannot be used as a basis for appeal.

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.

In case we have to move this class online, you will need stable internet connection and a computer with working microphone and/or webcam.

## ADDITIONAL INFORMATION

### 1. How to contact your instructor

I encourage you to make appointments with me for questions and/or comments. Appointments can be requested by email, please give me a few of your preferred time options. Questions can also be asked immediately after class. Please do not leave me phone messages.

### 2. Email Policies

**Email hours:** I usually check my email once a day, except for weekends and holidays. I try to answer within 24 hrs, with the following limitations:

Emails of the following nature will *not* be responded to:

1. Questions about course material. Such questions should be taken to the lecture or you can set up an appointment. Questions are typically answered far better and quicker "in person".
2. Questions that can be answered based on the information found in this course outline. Being able to find information yourself is an important soft-skill.
3. To discuss grades or make-up exams, please make an appointment.
4. If you email your instructor, you must use your Western email address and include *Biol4562* in the subject line. Messages from a non-Western account or those that do not include *Biol4562* may be blocked by the university's anti-spam system.
5. Emails from non-UWO addresses or without *Biol4562* in the subject line **will be deleted**, as will emails that are impolite or written in the form of a text message.

## EVALUATION

Final exam: 55%

Midterm exam: 35%

Assignments (2): each 5%

**Exam format:** short answer questions.

**Assignments:** You will have one week for finishing an assignment. Each assignment is worth 5% of the final grade. If you submit all assignments on time, you will receive an extra 1%. Late submissions will be marked to provide feedback but will not be graded. You will have a 2-day grace period and then the percentages will be moved to the next exam. Details on the assignments (due dates, content, format etc.) will be provided through OWL. Assignments have to be submitted as paper copy (or in case of online teaching by email) **AND** through turnitin.com. Submission is only complete if **BOTH**, hardcopy and turnitin copy are on time! Submissions might be graded using Gradescope.

- Missed midterms and final exams require accommodation.
- One make-up test for the midterm will be offered OR the weight of a missed midterm will be transferred to the final. In the latter case both missed midterm and make-up will need accommodation.
- One make-up test for the final will be offered. If a make-up assessment for the final exam is missed, the student will receive an INC and can complete the task the next time the course is offered. In the latter case both, missed final and make-up will need accommodation.
- Exams are planned to be in person. IF exams are held online, virtual proctoring might be used.
- All assignments are due at 5 pm EST unless specified otherwise. IF you miss to submit an assignment you will have a 2-day grace period and then the percentages will be moved to the next exam. You will receive an extra 1% if both assignments are on time.
- Written assignments will be submitted to Turnitin (statement in policies below).
- Students will have one submission to Turnitin.
- 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.
- **You must pass at least one exam and submit one assignment on time to pass this course.**
- Marks will not be “rounded” or “curved”. Your grade is your grade.

For a detailed and comprehensive set of policies and regulations concerning examinations and grading go to [https://www.uwo.ca/univsec/academic\\_policies/examinations.html](https://www.uwo.ca/univsec/academic_policies/examinations.html). 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

### **MISSED REQUIREMENTS**

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-reporting of absence or via the Dean’s Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at [scibmsac@uwo.ca](mailto:scibmsac@uwo.ca).

For further information, please consult the university's policy on academic consideration for student absences:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absence\\_s.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absence_s.pdf).

**Absences from Final Examinations:** If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

## GENERAL DESCRIPTION OF LEARNING EXPECTATIONS

- Learn about genetic concepts and approaches of genetic techniques and how they are used for problem solving
- Have an understanding of similarities and differences of nuclear versus organellar genome structures
- Regulation and molecular concepts of organellar processes and mechanism
- Appreciate plants a bit more 😊

## ACCOMMODATION AND ACCESSIBILITY

### Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf).

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absence\\_s.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absence_s.pdf)

and for the Student Medical Certificate (SMC), see:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See Academic Calendar for details (under [Special Examinations](#)).

### **Religious Accommodation**

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at <https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

## **ACADEMIC POLICIES**

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

[https://www.uwo.ca/univsec/pdf/policies\\_procedures/section1/mapp113.pdf](https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf),

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 their official university address is attended to in a timely manner.

### **Contingency plan for an in-person class pivoting to 100% online learning**

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely 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 remaining assessments will also be conducted online as determined by the course instructor.

**Scholastic offences** are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

[3000 levels and above:] Review Biology 2290 learning outcomes. You are expected to know what plagiarism is at this stage of your programme.

Turnitin ***aids*** in identifying plagiarism. All required papers 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 The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

If Remote Proctoring Software may be used in this course, including in the event of health lock-down

Tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be

required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

In case of moving online, completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link:

<https://support.zoom.us/hc/en-us>

### **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 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.

### **Online Etiquette (if required)**

Some components of this course might involve online interactions depending on COVID. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:

- "arrive" to class on time
- use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- to minimize background noise, mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- In order to give us optimum bandwidth and web quality, turn off your video camera after the lecture starts unless you are invited to speak or if requested otherwise
- please be prepared to turn your video camera off at the instructor's request if the internet connection becomes unstable
- unless invited by your instructor, do not share your screen in the meeting

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, use the "raise hand" function and wait for the instructor to acknowledge you before beginning your comment or question.
- Please remember to unmute your microphone and turn on your video camera before speaking.
- Self-identify when speaking.
- Please remember to mute your mic and turn off your video camera after speaking (unless directed otherwise).

General considerations of "netiquette":

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.

- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment. “Flaming” is never appropriate.
- Be professional and scholarly in all online postings. Use proper grammar and spelling. Cite the ideas of others appropriately.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

## **SUPPORT SERVICES**

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic%20Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf)

The policy on Accommodation for Religious Holidays can be found here: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.

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

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)



## **LAND ACKNOWLEDGMENT**

We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (e.g. First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.

More information about Indigenous Services (<https://indigenous.uwo.ca/>) and this Land Acknowledgement (<https://communications.uwo.ca/comms/land-acknowledgement/>) are available.