

# 1. Course Information

## Course Information

Biology 3597A The Regulation of Gene Expression.

Fall term class

Lecture content is asynchronous through the Owl site.

Tutorials will be offered in-person (please bring a laptop or other device to participate in iclicker quizzes). There will be no synchronous Zoom of the tutorial; it is in-person only unless need arises to go back on-line. Material presented in the tutorials may be tested on the Quiz along with the lecture material.

Quizzes will be held during the tutorial. With the exception of the quiz in Tutorial 3 that will be in-person and in-class, all other quizzes will be on-line.

Tests 1&2 will be held in-class on the dates scheduled.

Final to be announced.

Students are expected to read the syllabus, and not reading the syllabus is not a basis for appeal.

## List of Prerequisites

Biology 2280A and Biology 2581B

Unless you have either the requisites 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.

# 2. Instructor Information

Dr. Anthony (Tony) Percival-Smith. WSC 305. 519-661-4015. By appointment.

[aperciva@uwo.ca](mailto:aperciva@uwo.ca)

TA: Gabriella Sidhu

gsidhu49@uwo.ca

Students must use their Western (@uwo.ca) email addresses when contacting myself or the TA.

Student should feel free to arrange an appointment with me to discuss course material. Appointments can either be in-person or through Zoom.

### **3. Course Syllabus, Schedule, Delivery Mode**

A discussion of the genetic material and molecular mechanisms governing its expression in a variety of organisms.

Course learning outcomes:

Apply the knowledge and experimental analyses on the multiple levels of the regulation of gene expression learned in lecture to novel examples.

Read key papers and identify the key observations that support the genetic model of the regulation of gene expression proposed.

Present an audio/visual discussion of a topic in the regulation of gene expression.

Schedule:

Tutorial 1: Meet and greet. Discussion of course and answering questions.

Week 1 Gene rearrangement

Tutorial 2: Grammar of gene expression. On-line Quiz 1 (2 marks)

Week 2 Transcriptomics

available for assistance with downloading program for RNA-seq analysis

Tutorial 3: RNA seq. In-person Quiz 2 (2 marks)

Week 3 *lac* operon

September On-line Quiz 3 (2 marks)

Tutorial 4: No Tutorial

Week 4 Lysis versus Lysogeny

Pre-test question and answer. Discussion of questions about the material prior to test 1.

TEST 1 . (20 marks)

Week 5 Genome occupancy.

Tutorial 6. Discussion of the assignment. On-line Quiz 4 (2 marks)

Week 6 Transcription factors and anti-termination.

Tutorial 7. Discussion of the paper on occupancy in yeast On-line Quiz 5 (2 marks)

Week 7 Epigenetics.

Tutorial 8. Discussion of bivalent chromatin On-line Quiz 6 (2 marks)

Submission of Video assignment article (4 marks)

Week 8 Reading week October 30 -November 3. No tutorial.

Week 9 Regulation of splicing.

Discussion of questions about the material prior to test 2.

TEST 2. (20 marks)

Week 10 Regulation of translation.

Tutorial 10. Discussion of a paper on regulation of GCN4 On-line Quiz 7 (2 marks)

Video presentations due (10 marks).

Week 11 Micro RNAs

Tutorial 11 Discussion of a paper on transmission of transgenerational inheritance. On-line Quiz 8 (2 marks)

Week 12 Regulation of mRNA stability

Tutorial 12. (optional) Preparation for final examination.

Classes begin: September 7,

Reading Week: October 30-November 5,

Classes end: December 8,

Exam period: December 10-22, 2023.

### **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.

The Tests and Final examination, if required to be offered on-line, will be offered through proctortrack. The tests will be 1 hour and 50 minutes long and the Final will be 3 hours long.

## **4. Course Materials**

For the tutorials, students should have a device that they can use to engage with the iclicker quizzes. For tutorial 3 the students will require a device (laptop) to perform RNA-seq analysis.

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. Students are responsible for checking OWL on a regular basis.

All course material will be posted to OWL: <http://owl.uwo.ca>.

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.

### **Technical Requirements**

1. Stable internet connection.
2. Internet connection of a high enough speed in order to participate via Zoom or Mentimeter and download course material.
3. Computer with working microphone and webcam.
4. Software to make a video presentation.

## 5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Quizzes (8 2 marks each)	16 %
Test 1	20 %
Test 2	20 %
Video presentation	14%
Final Exam	30 %

To pass the course students must complete 76% of the assessments and must submit the video presentation that is non-completion of the video presentation is failure of the course. There are makeups for Test 1 and Test 2. There will be a makeup for the final.

For example, if you are absent for one of the tests and two of the quizzes (24% of your mark) the 24 % will be put on the final examination that is your final exam will be 54% of your mark. If you are absent for one of the tests and three quizzes (26% of your mark) you will not be able to write the final examination and will fail the course.

The Journal Club Video Assignment Article submission is due on October 2023 and will be marked by the TA.

The video presentation will be marked by the TA and is due on November 2023.

The on-line/in-person quizzes are designed to be answered in less than 5 minutes, but you will be given 15 minutes to complete the quiz. This means all students are accommodated for the quiz with 2 extra minutes given for every minute of the quiz.

The quizzes are to be done individually without communication with classmates during the quiz. There will be time available at the end of the tutorial for students with accommodations to find a quiet room to do the quiz if required. The quiz will open at X and will close at Y on the day of the quiz; the only exception is the on-line quiz in Week 3. There is one in-person quiz in Week 2 Tutorial 3 and the other seven quizzes are on-line.

Test 1 will cover material from Weeks 1-4

Test 2 will cover material from Weeks 5-9

Final examination will be cumulative.

## Accommodated Evaluations

To pass the course students must complete 76% of the assessments and must submit the video presentation that is non-completion of the video presentation is failure of the course. There are makeups for Test 1 and Test 2. There will be a makeup for the final.

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

## 6. Student Absences

### Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy 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)

### Academic Consideration for Student Absence

Remember students must complete 76% of the course assessments to pass. Non-completion of 76% of the assessments under any circumstances will result in failure of the course. In addition, remember there are make ups for Test 1 and 2. If the scheduled makeup for Test 1 and 2 can not be met and you have not completed 76% of the assessments there will be an examination on the material covered in the test missed. The accommodation for these students will be an evaluation of my choosing: essay, oral, short answer, problem solving or a mixture. Students will not be allowed to write a makeup if they have already written the test or final.

### **Academic Consideration for Student Absences**

#### **Missed Quizzes (2% each)**

Absences from the quizzes do not have to be communicated to the instructor; however, it is the student's responsibility to make sure that they keep track of how many assessments they have missed and whether they have completed sufficient assessments to pass the course (76%).

#### **Late submission of Video Assignment Article (4%)**

The assignment is due on October, 2023. People who submit the assignment before 11:55 PM will receive an automatic on-time bonus of 1/2 a mark. Assignments submitted on October, 2023 on or before 11:55 PM will not receive the on-time bonus. A mark will be removed for each subsequent day the assignment is late. The Video Assignment Article will be screen for plagiarism using turnitin. All plagiarism will be reported to the Dean of the student's faculty.

#### **Tests 1 and 2**

#### **Assessments worth 10% or more of the overall course grade:**

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf).

The Student Medical Certificate is available at

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

Test 1 and 2 (20%). If both the test and makeup for one of these two tests is missed the marks will be reweighed to the final examination.

Video Assignment (10%). The video assignment is due November, 2023 by 11:55PM. Assignments handed in on time will receive an automatic on-time bonus of 1 mark. Assignments handed in on November, 2023 on or before 11:55PM will not receive the on-time bonus (this includes late assignments with accommodation). Assignments handed in on November, 2023 will lose 2 marks and 2 marks will be lost for every subsequent day late.

### **Absences from Final Examinations**

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (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” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

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 the Academic Calendar for details (under [Special Examinations](#)).

## **7. EDI statement**

The pronouns used by:

- Tony are: he/him

## **8. 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.

## **9. Accommodation and Accessibility**



## **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 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>

## **Accommodation Policies**

Students with disabilities work with Accessible Education (formerly SSD), 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)

Accommodated examinations are run by accommodated exams which requires notification prior to the exam and this includes the makeup. If you have not contacted the service you will only be able to write the unaccommodated examination.

## **10. 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 his/her official university address is attended to in a timely manner.

A non-programable calculator will be required to answer some questions during the tests and final exam. Therefore, the only things that you may have with you are a calculator and writing implements when writing the tests and exam in-person.

**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)

Tests and examinations in this course will be conducted using proctortrack if the course has to go back to on-line only. 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>.

### **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

All recorded sessions will remain within the course site or unlisted if streamed

### **Online Etiquette:**

Some components of this course will involve online interactions. 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 for the entire class unless you are invited to speak
- 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.

## 11. Support Services

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

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

[https://www.uwo.ca/health/student\\_support/survivor\\_support/get-help.html](https://www.uwo.ca/health/student_support/survivor_support/get-help.html).

To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

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 Accessible Education at

[http://academicsupport.uwo.ca/accessible\\_education/index.html](http://academicsupport.uwo.ca/accessible_education/index.html)

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<https://learning.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.

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/>.

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

## **12. Strategies for Successful Online Learning**

### **Approach to online courses**

You can treat an online course like a traditional, in-person course. Start the term by reviewing the course syllabus, including the learning outcomes and objectives, as these indicate what you are expected to know, value, or be able to do at the end of the course. In order to successfully complete the course, be sure you know all the course requirements, including technology, assessment, and participation. You will need to dedicate a significant amount of time to your course and the requirements that you are expected to complete. It will be more time than a traditional in-person course.

### **Be accountable**

At the beginning of the term create a major goal for the course(s). Write the goal down, keep that piece of paper close to your workspace so that you see it and are reminded of it often, and share the goal with others. The online learning process requires a great deal of self-discipline, working at your own pace, commitment and creating your own work environment. You are expected to login to OWL and your UWO email on a regular basis, as well as check for information or updates on other sites specified by your professor. Throughout the term, be sure to review your course material, summarize lecture and textbook material, revise your plan as needed, and repeat.

### **Maximize your productivity**

You can find resources on our [website](#) to support you in creating a study plan, such as our 4 month or weekly calendar. In your plan and schedule, be sure to include time for both academic and non-academic tasks. Schedule academic tasks during the time of day that you feel most productive (morning, afternoon or the early evening), and be sure to include non-academic tasks, such as sleeping, eating, exercise, being outdoors. These are essential for your wellness and are advantageous for your courses. Also, check in with your classmates, teaching assistants, and professors on your progress, and ask for help when needed.

### **Create a study space**

You want your study space to be distraction free. Ideally, it's great to have a space dedicated solely for studying, but if you are using a multi-purpose space, identify blocks of time that you need it and hopefully others will respect your time to focus on your courses and coursework. Reducing distractions by having an organized study space is helpful. When you sit down to work have everything that you

need, such as laptop, textbook, notebook, pen, glass of water, and a snack. This will allow you to sit down and focus on your work and reduce the number of times you have to get up to gather items.

## 10. TIPS FOR CONQUERING ONLINE COURSES

Do you want to know how to be successful in an online course? Here are the study tips you need.

### Treat It Like a 'Real' Class

Online classes are still classes. You need to have the discipline to sit down and say, "I am going to work on this", as well as the dedication to actually follow-through.

Consciously choose to show up; absorb the content; schedule in assignments, lectures and tasks; and, set yourself up for success. Set daily goals and make checklists to help you succeed and work efficiently and independently. Have a 'success' mindset!

### Manage Your Time Carefully

People generally do better in a structured environment. So why not make it even easier for yourself? Scheduling flexibility is very important to a lot of students. It is important to think of 'flexibility' as the right to create your own schedule, not to abandon schedules altogether.

Without a professor actively reminding you, it's up to you to make sure you've allotted enough time to complete the work. You will be more productive by setting aside designated periods throughout the week to view lectures, do your readings and complete coursework.

If you're having trouble holding yourself responsible, pair up with a fellow classmate or enlist the help of a family member to check in as an accountability partner.

### Have a Designated Study Space and Stay Organized

I'm sorry, but your bed is a very bad place to do work! Set up a dedicated study space. By completing your work there repeatedly, you'll begin to establish a routine.

Setting up a regular workspace or office will also help you stay organized. Knowing exactly where important dates, files, syllabi, books and assignments are will help keep you on track.