

**Biology 2581B F/W 2021**

## **1. Course Information**

### **Course Information**

Lecture and tutorial content are asynchronous through the Owl site.

### **List of Prerequisites**

Biochemistry 2280A

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**

### **Instructors**

Dr. Anthony (Tony) Percival-Smith  
Department of Biology  
Lecture instruction

Dr. Patrick McDonald  
Department of Biology  
Tutorial instruction

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

### **Course e-mail protocols**

Do not contact the instructors directly through their e-mail accounts. Please only use [bio2581@uwo.ca](mailto:bio2581@uwo.ca) for all course related queries. E-mails will not be answered when they are sent to the instructors' accounts.

Also in the subject heading you need to put the name of the person in the course your e-mail is addressed to, or the portion of the course that your e-mail is querying.

Example subject headings:

Dr. Percival-Smith or Tony

Dr. McDonald

Lecture 4

Tutorial 2

TA Meg Emmons

### **Office hours for Dr. Anthony (Tony) Percival-Smith**

Thursday at 11:30AM-12:30PM. Zoom meeting.

Friday at 12:30PM-1:30PM. Zoom meeting.

Due to the number of students in the course (>1,000) individual meetings with Dr. Percival-Smith can not be expected to be scheduled. Dr. Percival-Smith will be available for discussions at the end or after the office hours. Dr. Percival-Smith does not discuss private issues (health or mental health) of students that should be discussed with an Academic Counsellors. He is more than willing to discuss other issues like what can I do with a Genetics education.

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

### **Course overview:**

Biology 2581b is an introduction to Genetics. Genetics at its most basic level is the study of genome sequence variation. In this course we will be identifying and classifying genome sequence variation, and using this variation to track transmission of genetic information, to identify important genomic information and to genetically dissect biological processes. The tutorial will apply genetic tools to the human genetic condition of early onset familial Alzheimer's.

### **Course learning outcomes:**

Upon completion of this course students should be able to:

1. apply the principles of the analysis of genomes and genomic sequence variation to problems associated with transmission of genetic information;
2. apply the principles of genetic dissection of biological process to problems associated with expression of genotype into phenotype;
3. utilize early onset familial Alzheimer's as a vehicle for understanding human diseases with single gene (Mendelian) inheritance.

## Course delivery

Lecture material will be delivered asynchronously. The material will be released in two-week blocks. Office hours are available with Dr. Anthony Percival-Smith (see above). Teaching assistants will also be available to answer your questions and clarify content.

Tutorial material will be delivered with asynchronous and synchronous components. First, students will have access to the asynchronous tutorial content. This will come in the form of a tutorial video with the accompanying slides. Following the tutorial content, students have the option (and are encouraged) to participate in the synchronous component. The synchronous component will be led by Teaching Assistants (via Zoom) who will review and discuss the most salient aspects of the tutorial content. Students will also have the opportunity to work together on the posted Application Check questions. Finally, Teaching Assistants will discuss those questions to ensure that student learning outcomes are achieved.

## Schedule:

Week1 Introduction and tree of life. Jan 11

Week 2 How do you sequence a genome? Jan 18  
Test1 10% Jan22 Makeup Jan 25

Week3 Genome annotation and variation. Jan 25  
Tutorial 1 launched in Week 3

Week4 Origin of genome sequence variation and application to pets. Feb 1  
Feb 5 Test 2 10% on lecture 3% on tutorial. Makeup Feb 8

Week5 Allele classification. Feb 8  
Tutorial 2 launched in Week 5

## READING WEEK.

Week 6 Regulation of gene expression in Bacteria and Eukaryotes. Feb22  
Feb 26 Test3 10% on lecture 3% on tutorial. Makeup March 1

Week 7 Genetic screens and making mutants. March 1  
Tutorial 3 launched in Week 7

Week 8 Epistasis and Developmental genetics. March8  
March 12 Test4 10% on lecture 3% on tutorial. Makeup March 15.

Week 9 Epigenetics and microbes. March 15  
Tutorial 4 launched in Week 8

Week 10 Sex and meiosis. March 22

March 26 Test 5 10% on lecture 3% on tutorial. Makeup March 29

Week 11 Chromosomal mutants. March 29

Week 12 Sex determination and Behavioural Genetics. April 5

Final examination 35% on lecture and 3% on tutorial

### **Posting to the Forum**

We encourage students to post questions to the forum. To improve access to the forum, it is broken into sections:

For lectures it is broken down into weeks of material.

The four tutorials are broken down into four units.

The tests are broken down into Tests 1-5.

Please make sure that you post your question to the correct sub-forum. This will help students finding the posts for specific portions of the course and help us answer your queries.

Not reading the syllabus is not a basis for appeal. You are expected to read the syllabus at the beginning of the course.

## **4. Course Materials**

**Textbook:** Benjamin A. Pierce Genetics a conceptual approach 7<sup>th</sup> edition.

### **Notes on Lecture and Tutorial materials:**

Most of the lecture and tutorial content is found in videos. These videos are closed captioned using Microsoft stream and subsequently checked and corrected for mis-spellings by a student. This process is not 100% effective and mistakes may remain in the transcripts. These mistakes may not form the basis of an appeal for hearing able students. If mistakes are found by students in the course, an -e-mail detailing them would be of assistance in their correction. The transcripts of the videos are posted on the OWL site.

The teaching assistants are good resources for information and explanation; however, we do not accept appeals with statements like "but that is what my TA said".

Students are responsible for checking OWL on a regular basis (<http://owl.uwo.ca>). This is the primary method by which information will be disseminated to all students in the class. Not checking your e-mail account is not a basis for appeal.

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, write on-line assessments and download course material.
3. Computer with working microphone and webcam.

Not having the technical requirements may not be used as a basis for appeal.

## **5. Methods of Evaluation**

### **Scheduled Tests and Final examination.**

The Tests and Final are timed to be completed in 45 minutes or less for Tests 1-5 and 1 and ½ hours for the Final examination. To cover accommodations (up to 60 extra minutes for every 60 minutes of regular time) all the tests will be given 1 hour and 40 minutes to complete and 3 hours and 20 minutes for the final (to include breaks as well), that is all students will write an accommodated examination (It is too complicated to assign students to groups that fulfil their specific accommodations). In addition, we are scheduling bi-weekly assessments such that students do not fall behind and are not overwhelmed when coming to study for one or two large midterm tests.

Regularly scheduled tests and final examinations will not be proctored using proctortrack or Zoom. We acknowledge that a large majority of students in the class are not tempted nor engage in cheating; however, we are required to suppress the ability of students to cheat. This is why the tests and final examination are available for a limited window of time and why they will be linear examinations (ie. you will not be able to go back to the previous question(s)). We use linear examinations using a random selection of questions to make cheating more difficult, and therefore, protests on this point will not be received.

We also monitor for methods of cheating and will collect evidence of cheating in order to pursue an accusation of academic misconduct which may be received by the student after completion of the course. Remember that cheating is an academic offence that can lead to expulsion from the university. Also, professional schools often ask you to release your Western academic file upon applying. Although some students may find cheating a tempting option, the downsides of cheating out-weigh any benefits.

### **Makeup Tests and Final examination.**

Makeup tests and final examinations will be proctored using Zoom. The students will be required to show their identification such that we can verify that a substitute, who has written the regularly scheduled test or exam, is not writing the makeup examination.

### **What can you have during the tests and final examination.**

You can have a notepad and pen to work things out on.

You will need a calculator. Most calculators do not have  $\log_2 x$  function but you can calculate it on a calculator by using the formula  $\log_{10} x / \log_2$ . Check it out on-line How to calculate log base 2 using a scientific calculator.

You can have your notes to consult since I can not monitor whether you are looking at your notes or not. The questions will not be memory recall. I would suggest you make up a sheet with things like equations so that you can find them easily.

You must be in a room by yourself.

You are not to contact anyone during the exam or be contacted by anyone.

You can go to the washroom anytime.

### **Mark breakdown:**

Test 1 10%  
Test 2 13%  
Test 3 13%  
Test 4 13%  
Test 5 13%  
Final 38%

### **Academic appeals:**

The dates for receiving appeals of the tests 1-5 follow the Senate guidelines: A request for relief against a mark or grade must be initiated with the instructor as soon as possible after the mark is issued. In the event that the instructor is not available to the student, or fails to act, or if the matter is not resolved satisfactorily with the instructor, a written request for relief must be submitted to the Chair of the department within three weeks from the date that the mark was issued.

List of the last date to receive an appeal on a test result.

Test 1 Feb 18<sup>th</sup>  
Test 2 March 11<sup>th</sup>  
Test 3 March 18<sup>th</sup>  
Test 4 April 8<sup>th</sup>  
Test 5 April 15<sup>th</sup>

## Course grades:

We follow the Senate grade description below.

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

We do not consider appeals based on you not meeting a threshold mark that affects your GPA. The mark you earn in this course is your responsibility and yours alone.

## Accommodated Evaluations

All tests and the final examinations will have proctored Make up examinations. The Makeups are scheduled more than 48 hours after the regularly scheduled test so will not be covered by a self-reported absence made for the regularly scheduled examination. If you miss both the regularly scheduled test and the make-up test, the marks will be reweighted to the final examination. However, to pass the course you must complete 74% of the assessments. If you can not complete the make-up final you will have to take the final when the course is offered next.

## 6. Accommodation and Accessibility

### 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

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)

- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

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 that are not covered by the Self-Reported Absence Policy 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\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.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)

### **Religious Accommodation**

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

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](#)).

## **7. Academic Policies**

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

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, 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.

**Some of the remote learning sessions for this course may be recorded.** The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their private or group study purposes. Please contact the instructor if you have any concerns related to session recordings.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the 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).

Makeup tests and examinations in this course will be conducted using Zoom. You will be required to hold up your student card for identification purposes, turn on your video when requested, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session will **not** be recorded.\*

More information about the use of Zoom for exam invigilation is available in the Online Proctoring Guidelines at the following link:  
<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

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>

\* Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination.

When Zoom is used for exam invigilation, you will be required to keep your camera on for the entire session, hold up your student card for identification purposes, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session using Zoom will not be recorded.\*

Completion of this course will require you to have a reliable internet connection and a device that meets the system and technical requirements for Zoom. Information about the system and technical requirements are available at the following links:  
<https://support.zoom.us/hc/en-us>

\* Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination.

## 8. 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 (519) 661-2147 if you have any questions regarding accommodations.

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>.

## 9. 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.

To watch recorded content, you may want to form a study groups that watches the material together (over Zoom) such that you are accountable to other people. Taking in the material is the first step in learning the material.

### **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.