

Biology 2290F Course Outline

1. Course Information

Course Information

Biology 2290F/G is a teaching laboratory course in the UWO Biology program dedicated to enabling students to apply sound experimental investigation and analyses to biological questions. Selected technical, analytical, and communication skills are introduced in diverse biological contexts as students rotate through four areas of study.

The course is comprised of 3hrs of in-person laboratory/week plus 3 hrs of asynchronous online learning modules (OLMs)/week. The molecular biology/instrumentation unit is held in and field work/writing unit is held in. **See schedule posted on OWL for more details.**

List of Prerequisites

A grade of at least 60% in Biology 1201a/1202b/1001a/1002b (Old 1222/1223) is a prerequisite for this course. Unless you have either the prerequisite for this course or written special permission from the academic counsellors in your faculty to enrol in it, you will be removed from the 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 the course for failing to have the prerequisites.

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	Email	Office	Office Hours
Dr. Michelle Belton (Course Coordinator)	mharris7@uwo.ca		By appointment
Dr. Tim Hain	thain@uwo.ca		By appointment
TAs: TBD			

- When communicating with instructors and TAs, use your @uwo.ca email account only. We will not respond to emails originating from non-uwo email accounts. Not checking your UWO account is not a valid excuse for missing essential communication.
- Include 2290F plus your lab section number in the subject line of any emails that you send. Address professors with appropriate salutation.**

- All emails will be responded to within 48 hours during weekdays (not including weekends and holidays). Emails will usually be addressed during regular work hours (9:00 am to 5:00 pm). We may choose, at our discretion, to respond outside these hours, depending on availability.

3. Course Syllabus, Schedule, Delivery Mode

A laboratory course designed to promote understanding of the scientific method by acquainting students with selected technical and conceptual tools that will enable them to generate, analyze and communicate data from experimental investigations of their own design in the areas of cell biology, population biology and genetics

Learning Outcomes:

- Perform proper pipetting technique
- Utilize and understand the operation of basic scientific instruments using proper technique
- Understand the process of bacterial cloning and purpose of each step of the cloning process.
- Explain downstream applications of bacterial cloning
- Describe the purpose of different controls used in experiments
- Analyze data derived from experiments
- Create tables and figures appropriate for scientific communication
- Design an experiment that uses ecological field methods, employing appropriate controls.
- Describe and analyze the variation that exists within species and ecological communities.
- Present the findings of an experiment as a poster.
- Perform a literature review and summarize the findings.
- Write a scientific review describing an evolutionary process.

Lab Schedule and Delivery Mode:

Section	Day/Time	Mode of Delivery
200, 201, 202, 203		3 hours in-person lab
204, 205, 206, 207		
208, 209, 210, 211		
212, 213, 214, 215		3 hours asynchronous online learning
216, 217, 218, 219		
220, 221, 222, 223		

Rotation Schedule

All sections will begin the course with the intro week which is 100% online, asynchronous learning. Following the intro week, students will move through two rotations (Molecular Biology/Instrumentation or Field Work/Writing) which consist of in-person labs and online learning modules. Half of the sections will begin with Molecular Biology/Instrumentation and the other half will begin with Field Work/Writing. See rotation schedule below for more details.

Rotation #	Unit	AM/PM	Tuesday	Wednesday	Thursday
Foundation Week	Intro	AM	200, 201, 202, 203	208, 209, 210,211	216, 217, 218, 219
Foundation Week	Intro	PM	204, 205, 206, 207	212, 213, 214, 215	220, 221, 222, 223
Rotation 1	Mol Bio Inst	AM	200 201	208 209	216 217
Rotation 1	Mol Bio Inst	PM	204 204	212 213	220 221
Rotation 1	Ecology Writing	AM	202 203	210 211	218 219
Rotation 1	Ecology Writing	PM	206 207	214 215	222 223
Rotation 2	Mol Bio Inst	AM	202 203	210 211	218 219
Rotation 2	Mol Bio Int	PM	206 207	214 215	222 223
Rotation 2	Ecology Writing	AM	200 201	208 209	216 217
Rotation 2	Ecology Writing	PM	204 205	212 213	220 221

Key Sessional Dates:

Classes begin: September 7, 2023

Reading Week: October 30 – November 5, 2023

Classes end: December 8, 2023

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, affected 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.

4. Course Materials

Lab coats and safety glasses are required for all classes conducted in the NCB labs. Lab coats will be available to borrow from the prep room if you forget. If you forget your lab coat more than 2X, you will lose 1% of your final mark.

Students are responsible for checking the course OWL site (<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.

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

If students need assistance with the course OWL site, 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

Biology 2290F/G requires that you have the following:



Stable internet connection



Laptop or computer



Working microphone



Working webcam

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Molecular Biology/Instrumentation unit assignments	35%
Field Work/Writing Unit assignments	35%
Final Exam	30%

Introductory Week:

Lab Safety – quiz (-1% if not complete by Sept 18th, 11:55 pm)
Library Resources – quiz (-1% if not complete by Sept 18th, 11:55 pm)
Communicating Research – quiz (-1% if not complete by Sept 18th, 11:55 pm)
Academic Integrity and Plagiarism – quiz (-1% if not complete by Sept 18th, 11:55 pm)

Molecular Biology/Instrumentation Unit Topics:

Week 1: Pipetting and Bacterial Cloning

Lab book check (1%)

Week 2: Transformation, plating and miniprep OR pHing and Microscopy

Lab book check (2%)

Week 3: Transformation, plating and mini prep OR pHing and Microscopy

Lab book check (2%)

Quiz (5%)

Lab Report Outline (2%)

Week 4: Restriction mapping OR Spectrophotometry, standard curve and plate reader

Lab book check (2%)

Plating assessment OR pipetting assessment (2%)

Week 5: Restriction mapping OR Spectrophotometry, standard curve and plate reader

Plating assessment OR pipetting assessment (2%)

Lab book check (2%)

Lab Report –Oct 24-26th (15%)

Field Work/Writing Unit Topics:

Week 1: Experiment planning OR Writing 1 (online lesson)

Lab book check for experiment planning group (1%)

Week 2: Experimentation OR Writing 2 (online peer review)

Lab book check for experimentation group (1%)

Written assignment due 10 days after your scheduled lab (15%)

Week 3: Data collection and analysis in hours 2 and 3 OR Experiment planning in hour 1

Lab book check for both groups (1%)

Poster presentation due 10 days after your scheduled lab (15%)

Week 4: Writing 1 (online lesson) OR Experimentation

Lab book check for experimentation group (1%)

Week 5: Writing 2 (online peer review) OR Data collection and analysis in hours 1 and 2

Lab book check for data analysis group (1%)

Written assignment due 10 days after your scheduled lab (15%)

Poster presentation due 10 days after your scheduled lab (15%)

Successful completion of knowledge check quizzes during this rotation is worth 2%. There are 3 quizzes during this rotation – two during the writing component (Intro to Communication and Language Arts), and one during the field component (Fieldwork equipment). They can be found in the Online Preparation tabs, or under the Tests & Quizzes tab.

6. Course Policies:

In Biology 2290F/G participation/attendance will be required for in-person activities.

- Students missing more than 2 in-person labs per unit will receive a **grade of "F" for the entire course**. Students who miss the first two in-person sessions for the Fieldwork component are expected to attend the third session, but the grade value for the poster will be shifted to the final exam.

- This “F” may be revised to “INC” (incomplete) only upon recommendation from the academic counsellors in your Dean’s Office in cases of documented health or compassionate concerns. If an INC is granted by the academic counsellors, then the INC will be completed at the next offering of the course provided that the course is not full.
- Course material (i.e. **lecture slides, videos, and other supplementary material** posted on OWL), **team projects, assignments, quizzes, tests, and exams** are the intellectual property of your instructor (**items bolded are shared with the student and the University**) and are for your personal use only.

Statement on Use of Generative AI (ie. ChatGPT):

Students are permitted to make use of available technological tools, including generative AI tools as supplementary resources in this course. When leveraging these technologies, students are encouraged to critically evaluate the generated content and to integrate it with their own understandings to produce original work. Students are responsible for all text they submitted, and are expected to be knowledgeable of all material in their assignments. In exceptional circumstances, students may be asked to demonstrate their knowledge of their work with an in-person meeting. Please note that large language models may make up incorrect facts and fake citations. Students should ensure that proper referencing of original sources are always included.

7. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

Students missing an in-person assessment will have the weight of that assessment moved to the final exam without needing to submit documentation. A maximum of two in-person assessments/unit can be moved to the final exam to a maximum total of 9%.

Students missing a submitted assignment will be granted an extension on the assignment to a maximum total of 9% without needing to submit documentation. The extension will be for 1 week after the original deadline. Submissions after this time will receive a mark of 0.

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://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Students missing an assessment of 10% or more will be granted an extension on the assignment. The assignment will be submitted 1 week following the original deadline. Late penalty of 25%/day after that.

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](#)).

Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.

8. 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/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>.

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.

9. 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,

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.

The use of non-programmable scientific calculators at the final exam is permitted.

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.

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>).

10. 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.

To connect with a case manager or set up an appointment, please contact 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

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/>.

This course is supported by the Science Student Donation Fund. If you are a BSc or BMSc student registered in the Faculty of Science or Schulich School of Medicine and Dentistry, you pay the Science Student Donation Fee. This fee contributes to the Science Student Donation Fund, which is administered by the Science Students' Council (SSC). One or more grants from the Fund have allowed for the purchase of equipment integral to teaching this course. You may opt out of the Fee by the end of September of each academic year by completing the online form linked from the Faculty of Science's Academic Counselling site. For further information on the process of awarding grants from the Fund or how these grants have benefitted undergraduate education in this course, consult the Chair of the Department or email the Science Students' Council at ssc@uwo.ca.