

Faculty of Science Course Syllabus (Section A)
Department of Biology
BIOL 2040.03
Evolution
Fall 2022

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

We acknowledge the histories, contributions, and legacies of the African Nova Scotian people and communities who have been here for over 400 years.

The Evolution Teaching Team supports an open, respectful, and safe learning environment for all students. We respect and encourage equity, diversity, inclusion, and accessibility.

Instructor(s): Lectures: Dr. Mark Johnston (he/him) LSC 7132 Mark.Johnston@dal.ca
Student Support* Hours: by appointment

Laboratories: Dr. Jen Frail-Gauthier (she/her) LSC 3130 jfrail@dal.ca
Student Support Hours: Mondays 1-2 PM or by appointment

**Student Support Hours (also known as Office Hours) = these are when the instructors are available to talk with you about course material or other course-related concerns/questions you may have.*

Lectures: Tuesdays and Thursdays, 10:05AM-11:25AM, Dunn Building 117

Laboratories: 2 hours per week (see schedule) LSC 4012

Course delivery: In-person (lectures, labs, tests)

The in-person labs are held in the LSC Room 4012. Labs occur the following days and times:

B01	Tuesday	1135-1325	B03	Wednesday	1235-1425	B05	Thursday	1235-1425
B02	Tuesday	1435-1625	B04	Wednesday	1535-1725	B06	Thursday	1535-1725

BIOL 2040 will be in-person for the fall of 2022. As per university guidelines, you are required to wear masks when participating in in-person activities (lectures, labs, office hours), and we hope that you continue to follow good public health practices such as staying home when sick. We expect a respectful teaching and learning environment for all, especially during these challenging times. We encourage you to consult the student code of conduct (https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

***NOTE: What to do if you feel sick.** Students experiencing COVID-19 symptoms should follow public health guidelines as outlined at <https://novascotia.ca/coronavirus/symptoms-and-testing/>. These public health guidelines list the common symptoms of COVID-19 and advise what to do if you experience these symptoms, To accommodate any students who may need to self-isolate while sick, lectures are live-recorded and will be made available. If you need to stay home in a lab time, please contact Jen to see your available accommodations.

Course Description

A thorough overview of the process of evolution. Genetic variation and changes in genetic composition of populations, the relationship between genetic and phenotypic change. Adaptation at various levels of

organization (DNA to species), speciation, phylogeny, and macroevolutionary patterns. Introduces the full breadth of evolutionary concepts, preparatory to more advanced courses.

Course Prerequisites

A grade of C or higher in BIOL 1010.03 or BIOL 1020.03 or BIOL 1031.03 or BIOA 1002.03 and BIOA 1003.03, or SCIE 1506.09 and SCIE 1507.09, or equivalent. **Recommended:** SCIE 1111.03 Writing for the Sciences

Learning Objectives

What is expected* of students coming into the course, and course student learning outcomes, can be found at this link: <https://biology.academics.cs.dal.ca/daedalus/manage/course/BIOL/2040>

**we understand that for many students, learning outcomes of first-year courses were modified due to online and blended delivery from 2020-2022, therefore, many expected hands-on skills may be new to BIOL 2040 students.*

Course Materials

NOTE: There are also copies of the textbooks for you to borrow for a short period of time in the Killam Library.

1) Herron J, Freeman S. 2014. Evolutionary Analysis. 5th ed. Glenview (IL): Pearson Education. 850 p.

NOTE: This can be purchased (reduced price compared to hardcover book) through the Brightspace page (through Willo)

2) Knisely, K. 2021. A Student Handbook for Writing in Biology. 6th ed. Sunderland (MA): Sinauer Associates. 288 p. (NOTE; this is also required for other Biology courses; 5ed is fine to use, too!).

3) **Electronic** (Brightspace): the lab activities, pre-lab materials, and assignments

Course Assessment

The marks will be assigned as follows:

Assessment	Value	Date
Midterm	25 %	in class Tuesday October 18 th
Labs	35 %	throughout the term; see schedule (2% Evolution Reflection; 12% The Fly Lab; 21% Lab Assignments)
Final Exam	40 %	3 hours, during final exam period

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Policies on Missed or Late Academic Requirements

The midterm exam will be held in-person during the lecture time on Tuesday October 18th. If you cannot write the midterm at the scheduled date, you must notify Professor Johnston before the time of the midterm exam and be prepared to provide appropriate documentation that clearly explains your absence within three (3) calendar days. Permission to write a makeup midterm exam is at the discretion of the professor.

The final exam will be held during the formal exam period scheduled by the registrar. Students are expected to be available throughout the final exam period. If you cannot write the final exam at the scheduled date, you must notify Professor Johnston on or before the day of the exam and be prepared to provide official documentation that clearly explains your absence within three (3) calendar days. Permission to write a makeup final exam is at the discretion of the professor. You can look at the exam schedule and/or policies about final exams at dal.ca/exams.

Laboratory attendance is mandatory – online or in-person. An unexcused lab absence means you cannot hand in the assignment for that lab and will receive a grade of zero for that assignment. Accommodations will be made for students who need to miss an in-person lab due to COVID-19 regulations.

If you must miss a lab due to illness, COVID exposures, sports event, or another major event;

- Contact Jen prior to your regular laboratory time.
- Check the lab schedule and plan to attend another lab time that week (unless excused by Jen).
- You are still responsible for the lab assignment at the usual time, extensions for lab assignments are only given at the discretion of the lab Instructor, Jen.
- In fairness for all students in the course - a busy academic workload is not a valid excuse for an assignment extension for individual students.

LAB ASSIGNMENT GUIDELINES

➤ **When are the lab assignments due?**

Before the start of your regular lab time. Check the schedule for due dates. We do NOT use Student Declarations of Absences in BIOL 2040 – you must contact Jen.

➤ **Should I use a template for the assignments?**

Yes. There will be a word document template posted on the course Brightspace site under the LABS content folder. It will include the questions and any tables, so all you need to do is fill in your answers, properly format, save your file and submit the completed assignment (as a pdf) to the appropriate Dropbox on Brightspace.

➤ **In what type of file should lab assignments be submitted?**

Save the template with your completed answers **as a pdf** for submission to Brightspace. We have found that this works best. If you use another format you may be asked to resubmit your assignment before grades are recorded.

➤ **How do I know if my assignment was submitted correctly?**

Check that you get a confirmation email from Brightspace *and* check your submitted file before assuming your assignment was submitted correctly. You can submit multiple copies, but only the most recent version will be kept.

➤ **Can I still hand in an assignment after the due date and time?**

Yes, late assignments will be accepted but there are consequences. **Unless given an excused extension from Jen**, there is a penalty of **10% per day** including weekends. Before midnight the same day it was due is -5%. Be mindful that, although Jen is understanding for if you need an extension for an assignment, you have assignments most weeks, and it's an important time management skill to not fall too far behind, in all of your courses. We aim to complete grading before the following week's lab.

- **I have most of my assignment finished but just have one question left. Can I submit what I have completed and just incur a late deduction on the late section?**

No, late deductions are based on the total value of the assignment. You may want to compare the value of the uncompleted question(s) and the value of the late deduction when choosing what to do. Please contact Jen if you need an extension.

- **Can I e-mail my assignment for grading?**

No. Submit the assignment to the course Brightspace site.

- **Can I skip a fly transfer lab?**

No. Attendance is mandatory at all labs *including* transfer labs at your scheduled lab time. An **unexcused** absence of a transfer lab will result in a 10% deduction off your final fly report.

Please reach out to Jen throughout the course if you are having any difficulties. We understand that for some of you, this is a new experience. It has been a challenging 2+ years, and we want to make your learning experience goes as smoothly as possible.

Course Policies related to Academic Integrity

Do NOT COPY or SHARE answers to any questions submitted for marks.

See the questions and answers below and also this link, [Academic Integrity](#) for more information.

Honesty in BIOL 2040 Evolution and at Dalhousie University is highly valued. It is expected that students submit their own intellectual work to be assessed.

Thinking of using CHEGG or Course Hero or any other similar site?

Think again!

You should know that the administrators of these sites cooperate fully with faculty at universities, providing names and information on students who post questions or look up answers. We can see when you accessed the site, what files you looked at, and what and when you posted anything. Interestingly, even if you use a fictitious name, you can be identified.

The penalty? Besides knowing you have disappointed your peers, your teachers, your family and yourself, anyone using these sites for exams this past year at Dalhousie **received an F** in the associated course and a **note on their transcript**, and *for those students who posted exam questions, suspension from the university.*

- **Since we work in groups, can we hand in the same assignments?**

No. You are encouraged to collaborate on data collection or broad general concepts with fellow students especially during the lab time. However, you must produce independent reports written in your own words that are submitted for grading.

- **Another student asks to see what I have written on an assignment. Should I give them my assignment to look at?**

Absolutely not. If that student intentionally or unintentionally copies your work, your name will go to the Academic Integrity Officer for the Faculty of Science and you can be found guilty of an academic offence. You may receive the same consequences as the person who copied your work.

The better option - give some general ideas on how to answer a question or send them along to the Lab Instructor or attend Jen's weekly Student Hours-- we are happy to help with any questions.

➤ **If, after I have completed this course, a student asks to use my assignments should I pass them along?**
 No. If that student copies your work and submits it as their own, your name also goes to the Academic Integrity Officer with a charge of an academic offense. You can be found guilty and face the same consequences as the person who copied your work.

➤ **What if someone obtains my assignments and uses them?**
 You are responsible to keep your work safe.

➤ **What is Urkund?**
 This is a software program that Dalhousie University has adopted to detect for originality of written work. Be very careful with your answers on assignments. Your work will be submitted into Urkund when you submit your assignments. Please see [Student Submission of Assignments & Use of Originality Checking Software Policy](#)

Course Content

BIOL 2040 Evolution Fall 2022 – Dalhousie University

Tentative in-person course schedule (subject to change; COVID-19 protocols)

Date	Lecture	Read	Assignment Due before lab time	Laboratory
September 6-9	L1 Introduction and overview L2 Evidence for evolution	Ch 1 Ch. 2	No Labs this week
September 12-16	L3 Natural selection L4 Reconstructing Phylogeny	Ch. 3 Ch. 4	Evolution Intro Lab! Lab 1(a): Fly lab Practice
September 19-23	L5 Reconstructing Phylogeny L6 Mutation and Genetic variation	Ch. 4 Ch. 5	Fly Lab: Materials & Methods (2%)	Lab 2: Phylogeny Lab
September 26-30	L7 Population Genetics L8 Population Genetics	Ch. 6 Ch. 6	Phylogeny Assignment (4.2%)	Lab 1 (b): Fly Lab Culture (F0) Set-up
October 1 – exam schedule posted; last day to drop fall term courses without a “W”				
October 3-7	L9 Population Genetics L10 Population Genetics	Ch. 7 Ch. 7	Fly Lab: Introduction (3%)	Lab 3: The Marble Lab (Fly lab: remove adults)
October 10-14	L11 Multiple loci: why sex? L12 Multiple loci: why sex?	Ch. 8 Ch. 8	Marble Assignment (4.2%)	Fly Lab: 1 st Transfer (F1)
October 17-21	L13 MIDTERM EXAM L14 Multiple loci: Quantitative Genetics	Ch. 9	Midterm! So, no assignments due!	Lab 4: DNA Sequences Lab (Fly Lab: Remove Adults)

October 24-28	L15 Multiple loci: Quant. Genetics L16 Multiple loci: Quant. Genetics	Ch. 9 Ch. 9	DNA Sequences Assignment (4.2%)	Fly Lab: 2 nd Transfer (F2)
October 31 – November 4	L17 Studying Adaptation L18 Studying Adaptation	Ch. 10 Ch. 10	No assignments yay!	Lab 5: Beetle Lab (Fly Lab: remove adults)
November 1 – last day to drop fall term courses with a “W”, Last day to drop X/Y courses without a “W”				
November 7-11	Fall Study Break ~ no classes	Any time BEFORE the end of Study Break – Evolution-in-the-News/ Evolution-Hot-Topic Reflection (2%)	no labs (Fly Lab: Jen and Doug will transfer adults to prepare for final F3 counts)
November 14-18	L19 Sexual Selection L20 Why do we get old?	Ch. 11 Ch. 13	Beetle Lab Assignment (4.2%)	Lab 6: Duck Lab (Fly lab: Final F3 Counts; record data)
November 21-25	L21 Life-History evolution L22 Speciation	Ch. 13 Ch. 16	Duck Lab: Assignment (4.2%)
Nov 28- Dec 2	L23 Speciation L24 Macroevolution	Ch. 16 Ch. 18	Fly Lab: Abstract, Results, Discussion (7%) due for everyone Dec. 2nd
December 5-7	No lectures; Final Q&A TBA			
Friday December 9 th – Tuesday December 20 th Dalhousie University Examinations				

Faculty of Science Course Syllabus (Section B) (revised April-2022)

Fall/Winter 2022-23

BIOL 2040 Evolution

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&chapterid=-1&topicgroupid=31821&loadusercredits=False>

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Faculty of Science Course Syllabus (Section C) (revised April-2022)

Fall/Winter 2022-23

BIOL 2040 Evolution

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

Dalhousie COVID-19 information and updates: <https://www.dal.ca/covid-19-information-and-updates.html>