

BIOL 2040.03 Evolution ~ Online
Winter Semester 2020-2021

Lecture Instructors:

Mark Johnston e-mail: Mark.Johnston@Dal.Ca

Robert Latta e-mail Robert.Latta@Dal.Ca

Lab Instructor:

Elizabeth Welsh e-mail: Elizabeth.Welsh@dal.Ca

LECTURES: Lectures will be available *asynchronously* on the course Brightspace site and will include PowerPoint slides with recorded audio and captioning.

LABORATORIES: You need a functional camera and audio for your computer or laptop. These are *mandatory and in real time (synchronous)* for one-hour every other week during the lab time that you registered for. There will be alternating weeks of required lab time and optional help session times.

- a) The *required synchronous lab times* will be to work together with your lab mates, lab instructor and TA, to collect data and go through the in-lab exercises that are needed for your take-home assignment. Check the schedule for the required lab weeks and times. **Important – the times are based on Halifax time.** It is your responsibility to find the corresponding time where you are living and attend. You will join into the lab sessions through your BIOL 2040 Evolution specific lab section “Team” using the Microsoft teams app.
- b) The open, *optional synchronous drop-in help sessions* (again, based on Halifax time) are available seven or eight times during the week for any questions about the lab assignments. You can attend during your usual lab time for the optional help sessions or at any other time (or several times) that week, what ever you like. Check the schedule and Brightspace site for the optional lab weeks and times available. You will join into the lab time help sessions during those weeks through the **BIOL 2040 Evolution help session “Team”** using the Microsoft teams app.
- c) The synchronous labs will be held virtually using Microsoft Teams during the following days:

B01	Tuesday	1135-1225	B06	Wednesday	0935- 1025	B05	Thursday	1435-1525
B02	Tuesday	1435-1525	B03	Wednesday	1235-1325			
			B04	Wednesday	1535-1625			

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.

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

KEY KNOWLEDGE OR SKILLS 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/browse/course>.

REQUIRED TEXTBOOKS:

- 1) Herron J, Freeman S. 2014. *Evolutionary Analysis*. 5th ed. Glenview (IL): Pearson Education. 850 p. These are available to purchase in electronic or print format from the [Dalhousie bookstore](#).
- 2) Knisely, K. 2017 *A Student Handbook for Writing in Biology*. 5th ed. Sunderland (MA): Sinauer Associates. 288 p. Note; this book is recommended for other Biology courses. The bookstore as of August 1 is only selling printed versions, but you can buy the electronic version elsewhere.

LABS:

The lab documents for BIOL 2040.03 Evolution, are available on the course Brightspace site in the weekly content modules, in pdf and word formats.

COURSE WEBSITE:

Go to www.dal.ca and then *Brightspace*.

COURSE ASSESSMENT:

LAB Assessments: Total = 30%

Five Assignments worth 5% each (25 of the 30 lab marks)

Best five out of six Prelab Quizzes based on the prelab information (5 of the 30 lab marks)

Lecture Assessments: Total = 70%

Midterm 25%, Tentatively Thursday, February 25th, 2021, 10-11:30 AM Halifax time but with additional times to accommodate other time zones if needed.

Final 45%, Scheduled by the Registrar's Office during the Dalhousie university 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

ATTENDANCE GUIDELINES

The midterm exam will be held on the date and time specified in the schedule unless otherwise communicated. Adjustments may be considered for those living outside of the Halifax time zone. If you cannot write the midterm at the scheduled date and time, you must notify [Robert Latta](#) *as soon as possible* and no later than the time of the midterm exam. 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 [Mark Johnston](#) and [Robert Latta](#) *as soon as possible* and no later than the day of the exam. Permission to write a makeup final exam is at the discretion of the professor.

Please consult the [university regulations regarding exams](#) .

Laboratory attendance is required. It is mandatory that you attend the labs and work with your small lab group (see schedule). An **unexcused lab absence means you cannot hand in the assignment for that lab** and will receive a grade of zero for that assignment. See the schedule for the synchronous mandatory dates.

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

- Contact [Elizabeth Welsh](#) prior to your regular laboratory time.
- Check the lab schedule and arrange to attend another lab time that week (unless excused by Elizabeth).
- 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, Elizabeth.
- To maintain fairness for *all* students in the course - a busy academic workload is not a valid excuse for an assignment extension for individual students.
- Please note that Student Declaration of Absence (SDA) forms *are not used* in BIOL 2040.

LAB ASSIGNMENT GUIDELINES ~ Commonly asked Questions:

➤ What about the Pre-lab quizzes?

Pre-lab quizzes are

- worth 5% of your final grade in total (5 of the 30 lab marks) and we will take the best five out of six quizzes.
- based on the background information about each lab (posted on Brightspace), and open book.
- **due** before the end of the day (11:59 pm Halifax time) the **day before your regular lab day** (see schedule).
- available on the course website for about six days. Read over the lab background information before you begin.
- you will have **one attempt** and usually **ten minutes** to answer the questions and submit your quiz.
- report any technical difficulties to Elizabeth well in advance of the due date to have your quiz reset.

➤ When are the lab assignments due?

Before the end of the day (11:59 pm Halifax time) **on** your regular **lab day**. Check the schedule for due dates.

➤ Should I use a word template for the assignments?

Yes. There will be a word document template posted on the course Brightspace site under the LABS icon. It will include the questions and any tables, so all you need to do is fill in your answers, 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 word template with your completed answers **as a pdf** for submission to Brightspace. We have found that this works best and is readable for all the Teaching Assistants no matter what computer they have. For example, documents created in “Pages” can only be read by those using a Mac product. If you use another format you will have 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.

Check the Brightspace assignment drop box for that assignment and make sure the file you submitted was the correct one.

You can submit multiple copies, but only the most recent version will be graded.

- ### ➤ Can I still hand in an assignment after the due date and time?
- Yes, late assignments will be accepted but there are consequences. There is a penalty of **10% per day** including weekends. Late assignments will only be accepted for grading for five days from the original due date.

➤ 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.

- ### ➤ Can I e-mail my assignment for grading?
- No. Submit the assignment to the course Brightspace site. If you have any issues submitting your assignment, contact Elizabeth immediately.

Plan ahead! Start and complete your assignments ahead of time! Save your work in several places! The following are *examples* of **excuses that do not** qualify for an extension for a lab assignment. In extreme situations, contact the Lab Instructor.

1. Forgetting to submit the assignment
2. Studying for a midterm
3. Completing other assignments
4. Submitting the wrong file
5. Internet issues
6. Computer issues

ACADEMIC INTEGRITY

Do **NOT COPY** or **SHARE** answers to any questions submitted for marks for any assignment, quiz or exam. 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 Elizabeth or the TA, 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 offence. 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. Your work will be submitted into Urkund when you submit your assignments. See [Student Submission of Assignments & Use of Originality Checking Software Policy](#)

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://www.dal.ca/academics/important_dates.html

University Grading Practices

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

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

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/academic-advising.html>

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

Black 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

Stay on Track student program: https://www.dal.ca/campus_life/academic-support/On-track/stayontrack.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/services-support/student-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

Research Lab Safety https://www.dal.ca/content/dam/dalhousie/pdf/dept/safety/lab_policy_manual_2007.pdf

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>

IMPORTANT TELEPHONE NUMBERS









FOR ALL EMERGENCIES call 4109 from any Dalhousie phone, or dial 494-4109 from an outside (non-Dalhousie) line (for fire, police, ambulance, Dal Security Emergency).





Emergency (4109) calls are routed through Security Office. Security Personnel then coordinate the notification and direction of the various emergency services.

NON - EMERGENCY NUMBERS: Dal Security & Maintenance after hours 494-6400

Health Services: Howe Hall 2171, QE II Emergency 9-428-2043, Poison Control Ctr Info 9-428-816

BIOL 2040 Evolution ~ Online
Tentative lecture, lab, and assessment schedule. *WINTER semester, 2020-2021*

Week # & Date	Lecture # and Topic <i>Asynchronous</i>	Read	Quizzes <i>due before your lab day</i> Assignments <i>due on lab day</i>	Laboratory Asynchronous	Online Laboratory Synchronous activities
1 January 4-8	L1 Intro	Ch 1		<i>Intro, what you need before the labs begin, syllabus</i>	 <i>Optional attendance</i> Drop-in Help sessions to check your camera etc.
2 January 11-15	L2 Overview and Evidence L3 Mutation & variation	Ch. 2 Ch. 5	Intro QUIZ Syllabus and AI	<i>Background – syllabus info and academic integrity info</i>	Required attendance Intro lab 
3 January 18-22	L4 Natural Selection L5 Genetic Drift	Ch. 6 Ch. 7	QUIZ 1 Pop Gen	<i>background on HW, NS and GD</i>	Required attendance LAB 1 Population Genetics 
4 January 25-29	L6 Migration L7 Phylogeny	Ch. 7 Ch. 4	ASSIGNMENT 1: Population Genetics	discussion board	 <i>Optional attendance</i> Drop-in Help sessions for lab assignment.
5 February 1-5	L8 Phylogeny L9 Adaptation & Molec evolution	Ch. 4 Ch. 8	QUIZ 2 Phylogenies	<i>background on phylogenies</i>	Required attendance LAB 2 Phylogenies 
February 1st – last Day to drop winter term courses with a “W” but check with Assistant Dean (Student Affairs) scieasst@dal.ca it may be extended					
6 February 8-12	L10 Dev & Evolution L11 Origin novel characters	Ch. 19 Ch. 19	ASSIGNMENT 2: Phylogenies	discussion board	 <i>Optional attendance</i> Drop-in Help sessions for lab assignment.
7 February 15-19	<i>Winter Study Break!</i>	<i>Winter Study Break!</i>
8 February 22-26	L12 Midterm Q & A L13 MIDTERM EXAM		QUIZ 3 Molecular Evolution	<i>background on purifying selection, transcription & translation, NSyn, Syn</i>	Required attendance LAB 3 Molecular Evolution 
9 March 1-5	L14 Multiple loci: why sex? L15 Multiple loci: why sex/ Quant Genetics	Ch. 8 Ch. 8,9	ASSIGNMENT 3: Molecular Evolution	discussion board	 <i>Optional attendance</i> Drop-in Help sessions for lab assignment.

<i>Tentative lecture, lab, and assessment schedule - continued</i>					
Week # & Date	Lecture # and Topic	Read	Quizzes <i>due before your lab day</i> Assignments <i>due on lab day</i>	Laboratory Asynchronous	Laboratory Synchronous
10 March 8-12	L16 Quant Genetics L17 Quant Genetics	Ch. 9 Ch. 10	QUIZ 4 Beetle Lab	<i>background on correlated evolution, R, S, HN</i>	Required attendance LAB 4 Beetle 
11 March 15-19	L18 Studying Adaptation L19 Adaptation; Sexual Selection	Ch. 10 Ch. 11	ASSIGNMENT 4: Beetle Lab	discussion board	 <i>Optional attendance</i> Drop-in Help sessions for lab assignment.
12 March 22-26	L20 Life-History evolution L21 Life-History evolution	Ch. 13	QUIZ 5 Duck Lab	<i>background on PICs</i>	Required attendance LAB 5 Duck 
13 March 29- April 2	L22 Speciation L23 Speciation	Ch. 16	ASSIGNMENT 5: Duck Lab	discussion board	 <i>Optional attendance</i> Drop-in Help sessions for lab assignment.
14 April 5-8	L24 Macroevolution	Ch. 16 & 18
<i>Saturday, April 10th – Friday, April 23rd Dalhousie University Examinations</i>					



Open drop-in Help sessions. Camera and audio are needed. This symbol indicates that **BIOL 2040 Evolution help sessions are going on this week.** Anyone in the Biology 2040 class can drop in to any one of the posted help session times by going into the BIOL 2040 Evolution help session Team (Galápagos Beagle II ship avatar) to ask questions about the lab assignments, or on Fridays and Monday (see posting on Brightspace) also to ask about the lecture material.

You should get a Dalhousie email notification that you have been added to the BIOL 2040 Evolution help session Team. Please let Elizabeth know if you cannot access this team by Tuesday morning of week 1.



Synchronous Labs occurring this week, are indicated by the green bird symbol. **Camera and audio are needed.** Participation at the labs is required for you to hand in your lab assignments. You will need to attend during your regular lab day and time. However, contact Elizabeth immediately to arrange attending another lab if you have to miss your regular lab time. Also, even though labs are officially scheduled for an hour, your lab team will be staying for an hour and a half, so you have the option of taking more time if you like!

You should get an email notification that you have been added to a lab section Team (Galápagos bird avatar) before the beginning of week 2.