

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Fall 2026

BI1080 (A2): Introduction to Biological Diversity – 3 (3-1-3) 105 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation, and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR:	Dr. Jessie Zgurski	PHONE:	780-539-2863
OFFICE:	J221	E-MAIL:	JZgurski@nwpolytech.ca
OFFICE HOURS:	Walk-in, or by appointment. My teaching schedule is posted on my office door.		

CALENDAR DESCRIPTION: This course examines the major lineages of life on Earth. It provides an overview of evolutionary principles and classification, the history of life, and the key adaptations of prokaryotes, protists, fungi, plants, and animals. Laboratories survey the diversity of biological form and function and introduce students to data collection and scientific writing.

PREREQUISITE(S)/COREQUISITE: Biology 30 (Prerequisite)

REQUIRED TEXT/RESOURCE MATERIALS:

1) Clark, M. A., Douglas, M., & Choi, J. (2018). *Biology 2e*. OpenStax.
<https://openstax.org/details/books/biology-2e> (Available Online)

2) Biology 1080 Lab Manual (Required)

3) Binder for Biology 1080 Lab Manual (and other lab handouts) – It should be able to hold about 200 pages.

DELIVERY MODE(S): Lectures (Tuesday and Thursday, 10:00 – 11:20 AM in J204), Laboratory (Tuesday or Thursday, 2:30 – 5:20 PM in J130), Seminars (Monday 11:30 AM – 12:20 PM in A213 or Friday 10:30 – 11:20 AM in A305).

LEARNING OUTCOMES: By the end of the course, students should:

- Understand how to use the scientific method to test biological hypotheses.
- Be able to describe the process of natural selection and provide examples of the evidence for evolution via natural selection.
- Be able to use current phylogenetic and taxonomic nomenclature to discuss the evolution of life on Earth.
- Be able to list the characteristics that define the major clades of life, including the eukaryotes, fungi, land plants, vascular plants, seed plants, flowering plants, chordates, and amniotes.

Note: More detailed learning outcomes will be provided for each topic covered.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page <http://www.transferalberta.alberta.ca>.

**** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions.**

Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.

EVALUATIONS:	Laboratory	42% (Labs start September 8 or 10, 2026)
	Seminar	8% (Seminars start September 14 or 18, 2026)
	Midterm	20% (In class, October 29, 2026)
	Final Exam	30% (During exam week, exact time and place TBA)

The final exam period is from December 12 to 19, 2026, and the precise time and place of the exam will be determined by the registrar's office. Please be available to write final exams on campus during exam week.

The 40% laboratory mark will be broken down as follows:

Assignment	Weighting	Due Date*
Lab Biosafety Online Mini-Course	1%	Sept. 8 or 10
Lab 2 Sketches	1%	At the end of lab Sep. 15/17*
Isopod Lab Assignment	3%	Sept. 25
Lab 4 Questions	1%	At the end of lab Sep. 29 or Oct. 1*
Museum Questions	2%	Oct. 2
<i>Brassica</i> Experiment Lab Report Part I (Introduction and Materials and Methods)	3%	Oct. 16
Plant Quiz	2%	In lab, Oct 20 or 22*
Fungi Quiz	2%	In lab, November 3 or 5*
Invertebrate Quiz	2%	In lab, November 17 or 19*
<i>Brassica</i> Experiment Lab Report Part II (Results and Discussion)	4%	Nov 20
Rat/Perch Diagrams	2%	Nov 24 or 26
Lab Final	19%	December 1 or 3*

* This due date will depend on which lab section you are registered in.

The 8% seminar mark will be based on participation and activities that you can work on during the seminar period.

GRADING CRITERIA

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

All marks will be assigned according to the criteria outlined in this syllabus. I do not give out extra credit assignments or arbitrary “grade bumps.”

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	67-69
A	4.0	85-94		C	2.0	63-66

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Lecture Schedule – Fall 2026		
LECTURE TOPIC	Readings (Biology 2e, Openstax)	
	Dates (Approximate)	Textbook Chapter
Introduction to BI1080	September 3	-
1. Introduction to Biology and the Scientific Method	September 3, 8	Chapter 1
2. Natural Selection	September 8, 10, 15	Chapter 18, Section 1
3. Population Genetics	September 15, 17, 22	Chapter 19
4. Speciation	September 22, 24	Chapter 18, Section 2
5. Phylogenetics	September 29, October 1, 6	Chapter 20
6. Origin of Life, and the History of Life on Earth	October 6, 8, 13	N/A
7. Protists	October 15, 20, 22	Chapter 23
Midterm	October 29	Covers Topics 1 – 6.
8. Seedless Plants	October 22, October 27	Chapter 25
9. Seed Plants	November 3, 5	Chapter 26
Fall Break – No Class	November 10, 12	N/A
9. Fungi	November 5, 17, 19	Chapter 24
12. Animals – Invertebrates	November 19, 24, 26	Chapter 28

Lecture Schedule – Fall 2026		
LECTURE TOPIC	Readings (Biology 2e, Openstax)	
	Dates (Approximate)	Textbook Chapter
13. Animals – Chordates/Vertebrates	December 1, 3, 9	Chapter 29
Final Exam	TBA – Exam Week	All

Laboratory Schedule – Fall 2026		
Date	Lab	Assignment or Quiz Due?
September 8 or 10	Lab 1: Habitat Selection in Terrestrial Isopods	Lab Biosafety Online Mini-Course. Complete <u>before</u> lab.
September 15 or 17	Lab 2: Introduction to Microscopy	Hand in lab drawings at end of period.
September 22 or 24	Lab 3: Phillip Currie Museum	Hand in Isopod assignment (electronically) by Sept 25.
September 29 or October 1	Lab 4: Population Genetics Explorer	Hand in Museum Questions (electronically) by October 2.
October 6 or 8	Lab 5: Plants Part I – The Vegetative Anatomy of Vascular Plants	No
October 13 or 15	Lab 6: Plants Part II – Reproduction in Land Plants	Hand in <i>Brassica</i> report Part I by October 16.
October 20 or 22	Lab 7: Kingdom Fungi	Botany Quiz at start of lab.
October 27 or 29	Lab 8: Biology of Invertebrates Part I (Porifera, Cnidaria, Platyhelminthes, Mollusca, and Annelida)	Fungi Quiz at start of lab.
November 3 or 5	Lab 9: Biology of Invertebrates Part II (Nematoda, Arthropoda, and Echinodermata)	No
November 10 or 12	Fall Break! No Lab.	No
November 17 or 19	Lab 10: Phylum Chordata	Invertebrate Quiz at start of lab.

Laboratory Schedule – Fall 2026		
Date	Lab	Assignment or Quiz Due?
		Part II of <i>Brassica</i> Lab Report Due by November 20.
November 24 or 26	Lab 11: Review, and Reptile presentation	Rat and Perch Dissection Diagrams Due by start of lab.
December 1 or 3	Lab Exam	Lab Exam this week

Seminar Schedule – Fall 2026	
Date	Activity
September 14 or 18	Statistics tutorial I (Chi-Square Test), Hypothesis testing
September 21 or 25	Finding and citing primary and secondary sources
September 28 or October 2	Population genetics exercises
October 5 or 9	Phylogenetics exercises
October 12 or 16	No Seminar – Thanksgiving
October 19 or 23	Earthviewer exercise
October 26 or 30	No Seminar – Midterm Week
November 2 or 6	Statistics part II (t-test) and writing results and discussion sections
November 9 or 13	No Seminar – Fall Break
November 16 or 20	Protista exercises
November 23 or 27	Lab Exam Preparation

STUDENT RESPONSIBILITIES: For our first laboratory (on September 8 or 10, depending on your lab section), please bring a copy of the lab manual, a binder, and something to write with. Please wear closed-toe shoes. We will provide lab coats and gloves.

Because of the Labour Day holiday on September 7, seminars start during the third week of class, so the first seminars will be held on September 14 or 18, depending on your section. Please

bring paper and something to write with. During seminars, you will learn skills that will be necessary to write lab reports, such as how to conduct the required analytical statistical tests. You will also work on questions and problems related to the lecture material. The mark is based primarily on attendance and participation, but everyone gets one “free” seminar absence. In other words, if you miss one seminar, it will not affect your mark. Students must also participate in the seminar exercises to earn full participation marks.

Students are responsible for completing and submitting work on time. Late assignments will typically be docked 5% of the mark per day late. No assignments will be accepted if they are more than one week late. Assignments not handed in will receive a mark of zero.

The midterm will be conducted in class on October 29 and the laboratory final will be delivered during the last laboratory period on December 1 or 3. A calculator will be permitted during the midterm and the laboratory final; otherwise, electronic devices are prohibited during exams. Students who cannot write the midterm or laboratory exam during the scheduled time due to a serious illness or another compelling reason must arrange to write it later. The final exam will be held during exam week. Failure to write the final exam will result in a grade of zero unless the exam was missed for a compelling reason (such as an illness). In such a case, the exam will be deferred.

Phones should be put away during this class (including during labs or seminars), and tablets and computers should only be used for taking notes. Using electronic devices to play games, watch videos, shop, or browse social media is distracting to other students and inconsiderate to the instructor. Except in cases of approved accommodations from Accessibility Supports and Disability Services, students are not permitted to take photos or make audio/video recordings during class.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

****Note:** all Academic and Administrative policies are available on the same page.

Please note that all assignments completed for this class, except for the rat and perch dissection diagrams, must be completed individually.

Assignments must be completed exclusively within Google Docs, and you must do the writing yourself. You can use the spelling & grammar checker that comes with Google Docs, but you may not use large language models (LLMs, *i.e.* “artificial intelligence”) to generate your work. Note that I do not use “AI Detectors” to judge whether work was generated using an AI. However, typical first-year undergraduate work differs

significantly from AI-generated work, and I can typically tell the difference. I will also be able to see your document's version history in Google Docs. If I suspect your work was generated by an AI, I will ask you to orally defend it. Students who submit AI-generated work will be reported for an academic integrity violation.

ACCESSIBILITY SUPPORTS AND DISABILITY SERVICES: If you require disability-related accommodations and support, please contact the Accessibility Supports and Disability Services office. Their Email address is AS@nwpolytech.ca and their website is <https://libguides.nwpolytech.ca/learningcommons/AccessibilityServices>