University of Victoria
Department of Biology

BIOL 336 – Biology of Algae

Term 202501

Course Information:

Units: 1.5
Hours: 3 (Lecture) + 3 (Lab) – Students must be officially registered in the Lecture (A01 CRN 20358) and a Lab section (B01 CRN 20359, B02 CRN 20360 or B03 CRN 20361).
Prerequisites: BIOL 215 and BIOL 225

Course Description and Learning Outcomes:

This course will examine aquatic and terrestrial algal diversity, with a special emphasis on marine algae. You will:

- learn about the ecology, physiology, cell biology and evolution of algae,
- learn to identify microscopic and macroscopic algal specimens in the laboratory, hone your presentation skills, learn how to conduct a field project in a coastal environment and learn how to analyze and interpret data collection from the field,
- be able to critically reflect, through discussions in this course, on current and future effects of climate change on algal eco-physiology and therefore, on biological systems, and
- be exposed to artistic activities and technological applications that use algae for inspiration or as a subject.

We aim to deliver an enjoyable course experience and provide you with the opportunity to become knowledgeable about the diversity and importance of algae on Earth. We are committed to providing and protecting a supportive and respectful learning environment for all of you. We care about your learning and will provide you with the necessary tools to help you succeed in the course. At the same time, you must understand the course expectations and requirements (see below). We welcome feedback regarding any aspect of the course during the term.

Course Instructor:

Dr. Diana Varela
Office: Bob Wright Centre A333
Contact information: Email: dvarela@uvic.ca (preferred), Office phone: 250-472-5425
Office hours: By appointment

Laboratory Personnel:

Laboratory Coordinator and Teaching Assistant: Viktorie Kolatkova; vkolatkova@uvic.ca
Teaching Assistant: Daniel Lucyrio de Lima; flaviodaniel.200@gmail.com

Delivery Mode and Access to Course Materials:

- Lectures, laboratories and exams are delivered in a Face-to-Face mode.
- Lecture and laboratory presentations will not be recorded, but lecture notes and lab materials, results from exams, general announcements and others will be posted on the course **Brightspace site** regularly. Students are responsible for checking the Brightspace site for postings and updates before coming to all lectures and labs.
- We kindly ask students to request prior authorization if they intend to record an instructor.

Lectures:

- Monday and Thursday, 11:30 AM – 12:50 PM, Cornett (COR) Building, Room B108
- Face-to-Face lectures in this course start on Monday January 6, and end on Thursday April 3.
- The lecture schedule can be found at the end of this document.
- Relevant information related to the lecture component of the course is provided in this syllabus and will be discussed during the first lecture.

Laboratories:

- Monday, Tuesday and Wednesday, 2:30 PM **–** 5:20 PM, Petch Building, Room 109
- Face-to-Face labs start on the week of January 13, and end on the week of March 31.
- You can only attend the lab section in which you are officially registered.
- There is no printed laboratory manual for purchase. Sections of the manual required for each weekly lab will be posted in the Brightspace site during the week prior to the lab. It is important that you download and read the documents/files before the start of each lab.
- The lab schedule can be found at the end of this document and in the General Introduction of the lab manual.
- Relevant information related to the lab component of the course is provided in this syllabus, the lab manual and will be discussed during the first lecture and the first lab.

Textbook:

We will use ***Algae****, by* ***Graham, Graham, Wilcox and Cook*** (**4th Ed**) **2022**, which is available digitally through the UVic library using your Netlink ID and password here (click on 'view full text').

Please note that, as a UVic student, you are permitted to view and download the PDF for the purpose of education and research without cost, but due to copyrights you cannot share this PDF with anyone or post it in file-sharing websites. For anyone else who wishes to purchase a digital copy of this book, the e-book is available through the author's website.

Hardcopies of the 1st and 2nd Ed., and a PDF copy of the 3rd Ed of this book are also available in the lab.

Course Evaluation:

Lecture Component:

***Midterm Exam* 1 (February 10th)** …….. **15%**
***Midterm Exam 2* (March 17th)** …….. **15%**
***Final Exam* (during Final Exam Period, date TBD)** …….. **30%**

Laboratory Component:

Lab Exam (week of March 3rd) …….. **15%**
Weekly Labs and Individual Assignments (*Labs 1-7* @ 2% each) …….. **14%**
Field Trip and Individual Report (*Lab 8*) …….. **5%**
Oral presentations (*Lab 9*) …….. **6%**

Final Course Mark …….. **100%**

Grading:

Check here the official grading system for the University of Victoria.

Course Expectations and Requirements:

We hope that the following information clarifies the course rules and how to succeed in the course. Please read carefully and ask the course instructor if you have any questions; it will be assumed that you understand these rules.

- *As indicated in the UVic Undergraduate Calendar under Laboratory Work in Evaluation of Student Achievement, students are required to achieve satisfactory standing in the lecture and laboratory component of the course, i.e.* ***a passing grade (≥50%) in BOTH the lecture and the laboratory components must be obtained to pass this course****.* Furthermore, students who fail the laboratory component will not be permitted to write the Final course examination and will not receive any credit for the course (F grade).
- ***You are expected to be engaged in every component of this course: participate in lectures, write all exams and attend/complete lab work.***
- To complete this course, **you are required to complete the *Integrity in Practice* course** in Brightspace and submit the completion certificate to the Brightspace BIOL 336 site by January 31st.
- To complete the lecture component (and get credit for the course), **you are required to write the Lecture Final Exam** during the Final Exam Period. **Failure to complete the Final Exam will result in an incomplete grade (N) for the course.**
- If you must miss one or both of the Lecture Midterm Exams, you must notify Dr. Varela as soon as possible and provide a *valid reason* according to the Academic Concession regulations (see below). If excused, the 15% of the missed Midterm will be re-distributed in the following manner: 5% to the other Midterm (which will be worth 20%) and 10% to the Final Exam (which will be worth 40%). If you are excused from missing both Midterm Exams, your Final Exam will be worth 60% of the total course grade. If you are not excused from the missed Midterms, you will receive a zero for the missed Exams.
- If you must miss or expect to miss the Final Exam *for a valid reason*, please notify Dr. Varela as soon as possible. When you are able to do so, you can request a deferral for the Final Exam (see below under Academic Concessions).
- To complete the laboratory component (and get credit for the course), **you are required to (a) attend and complete at least 6 out of the 8 face-to-face labs # 1-8 (i.e. you cannot miss more than 2 of the weekly labs # 1-8 and their assignments, *even for valid reasons*), (b) give the oral presentation, and (c) write the Lab Exam. Failure to complete one or more of these requirements (a, b or c) will result in an incomplete grade (N) for the course.**
- If you must miss a weekly lab (including the field trip), the lab exam or the oral presentation, for a *valid reason*, you must notify the Laboratory Coordinator (Viktorie Kolatkova) and Dr. Varela as soon as possible
- If you are excused from any missed weekly labs # 1-8 (not more than 2) for a valid reason, your final lab mark will be re-calculated (i.e. you will not be penalized). *Missed weekly labs cannot be completed earlier or later when the course is in session, and cannot be deferred after the course is finished*.
- If you must miss the oral presentation date, you still need to give the presentation before the date of the Final Exam. You need to request an in-course extension.
- If you must miss the Lab Exam, you must request an in-course extension. A *single date* for the deferred lab exam will be set (between March 3rd and the last day of classes on April 4th) for all students who missed it for valid reasons. Due to conflicts with running weekly labs, the deferred lab exam will likely have to be scheduled outside regular class/lab hours. **Students will only**

have one chance to defer a lab exam; failure to complete the one deferred lab exam will result in an incomplete grade (N) for the course. The lab exam cannot be deferred for any reason after the end of classes on April 4th.

- Exams (lecture midterms, lecture final and lab exams) cannot be written early under any circumstances.
- No supplemental exams or assignments are offered in this course. In other words, you cannot rewrite any exams or complete extra assignments in order to improve your grade.
- Personal travel plans are not a valid reason for missing labs, exams or any assignment deadlines. The date for the BIOL 336 Final Exam will not be known until the final exam schedule is posted later in the term. The UVic final exam period runs between April 7th and 25th in 2025. You are safe to make travel arrangements for *after* that period.
- *Please read carefully the Academic Concession Regulation and Guidelines (links below).*
- All exams may be of mixed format (definitions, multiple choice, short answer, and longer multi-part or essay questions). All lecture course materials *(e.g.* instructor commentaries, class discussions and figures, posted notes, and assigned readings from papers from the primary literature) are fair game for lecture exams. The textbook readings will help you to supplement the lecture material and provide you with additional insight and illustrations, and in-depth explanations. The Final Lecture Exam is cumulative. The Lab Exam will include visual identification of specimens and/or their parts that were studied during the prior weekly lab sections, and materials included in the documents posted in Brightspace for each lab.
- Students who require accessibility arrangements in this course should obtain a referral from the Centre for Accessible Learning (CAL), which must be sent to Dr. Varela at the beginning of the term (first 10 days).

Changes due to Unforeseen Circumstances:

Lecture and laboratory schedules, course evaluation and requirements in this course are subject to change in the event of extenuating circumstances. In the event of significant changes, a revised outline will be posted/circulated and announced to all students.

Academic Policies and Regulations:

Undergraduate policies and academic regulations are described in the UVic Undergraduate Calendar. Please read the appropriate parts of the 2024-25 University Calendar (January edition), regarding your rights and obligations. Specifically, read very carefully the Academic Concession Regulation/Guidelines, the Policy on Academic Integrity, and Academic Important dates:

- Academic Concessions Regulation and Academic Concession Guidelines

The university recognizes its responsibility to offer academic concessions to students whose ability to complete course requirements is interrupted by: 1) **unexpected and unavoidable circumstances** or 2) **conflicting responsibilities**. Please refer to these Calendar sections when determining what is a '*valid reason'* to request an Academic Concession and the process for requesting a concession. In the following link you will find a summary of the academic concession process and the required forms.

- Policy on Academic Integrity

It is every student's responsibility to be aware of the university's Policy on Academic Integrity, including policies on cheating, plagiarism, unauthorized use of an editor, multiple submission, and aiding others to cheat. Other helpful resources that can help you to ensure that academic integrity is maintained are found in the UVic Library's plagiarism guide and the UVic Learning and Teaching Support and Innovation site.

Please be advised that you are not authorized to use any form of generative Artificial Intelligence (AI) tools (such as ChatGPT, Grammarly, among others) for content generation or editing.

Please note that all lecture and lab notes, course materials, and exams are the intellectual property of the instructor/university, and are made available to registered students in this course for instructional purposes only. Distributing lecture or lab notes or exams without the instructor's permission through note-sharing sites or other means may violate the Policy on Academic Integrity.

Academic integrity is intellectual honesty and responsibility for academic work that you submit individually or as group work. It involves commitment to the values of honesty, trust, and responsibility. It is expected that students will respect these ethical values in all activities related to learning, teaching, research, and service. Therefore, plagiarism and other acts against academic integrity are serious academic offences.

The responsibility of the institution

Instructors and academic units have the responsibility to ensure that standards of academic honesty are met. By doing so, the institution recognizes students for their hard work and assures them that other students do not have an unfair advantage through cheating on essays, exams, and projects.

The responsibility of the student

Plagiarism and cheating sometimes occurs due to a misunderstanding regarding the rules of academic integrity, but it is the responsibility of the student to know them. If you are unsure about the standards for citations or for referencing your sources, ask your instructor. Depending on the severity of the case, penalties include a failing grade for the work or for the course, a record on the student's transcript, or a suspension.

Academic Important Dates:

Check **here.** It is the student's responsibility to attend to Add/Drop dates published in the Calendar. Students must not assume they will be dropped automatically from any course they do not attend. It is also the students' responsibility to check their records and registration status. In addition, students need to check the Calendar course descriptions for all currently registered courses and transfer credits to check for duplicate or mutually exclusive (DUP or M/X) courses that would result in denial of course credit and/or influence eligibility for student loans and/or athletics.

Student's Resources (not an exhaustive list):

- UVic Learn Anywhere
- Academic Advising Centre for the Faculties of Humanities, Science and Social Sciences
- Accessibility
- Equity and Human Rights
- Sexualized Violence Prevention and Response
- Student Wellness Centre

  If you need to book an appointment to meet with a counsellor, nurse, physician or spiritual care provider, call 250-721-8563, or book in-person at the Student Wellness Centre (HWB).
- Office of Student Life
- Resources for International Students
- Resources for Indigenous Students
- Office of the Ombudsperson
- Student code of contact

We acknowledge and respect the Lək̓ʷəŋən (Songhees and Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱SÁNEĆ Peoples whose historical relationships with the land continue to this day.

LECTURE SCHEDULE

BIOL 336 - 202501

Face-to-Face lectures and Midterm Exams are held in the
Cornett (COR) Building, Room B108

LECTURE TOPICS (January 6 to April 3)**:**

- Introduction to Course Content and Requirements, Presentations by Course Staff
- Introduction to Algae and Algal Diversity
- Origins of Photosynthetic Organisms
- Algae and Nutrient Cycles
- Prokaryotic Algae: Cyanobacteria
- Evolution of Eukaryotic Algae
- Euglenoids
- Cryptomonads
- Haptophytes
- Dinoflagellates
- Photosynthetic Stramenopiles I: Diatoms
- Photosynthetic Stramenopiles II: Chrysophyceans, Raphidophyceans and Xantophyceans
- Photosynthetic Stramenopiles III: Phaeophyceans (Brown Algae)
- Red Algae
- Green Algae
- Phytoplankton Eco-Physiology
- Seaweed Eco-Physiology
- Harmful Algal Blooms
- Technological Applications of Algae
- Algae in Extreme Environments and in Biotic Associations
- Current Topics in Climate Change

In the event of changes to the lecture schedule, these changes will be announced in advance during lecture and/or the Brightspace site. Please check Brightspace for announcements throughout the term.

LECTURE EXAMS and READING BREAK:

February 10	**LECTURE MIDTERM EXAM 1**
Week of February 17	*READING BREAK – No lectures or labs*
March 17	**LECTURE MIDTERM EXAM 2**
Date (and Room) TBD **(Final Exam period, between April 7- 25)**	**LECTURE FINAL EXAM**

LABORATORY SCHEDULE

BIOL 336 - 202501

Face-to-Face labs and Lab Exam are held in the **Petch Building, Room 109** (except when specified*)

Lab #	Date (Week of)	Lab Topic
1	Jan 13	Introduction, Review and Classification
2	Jan 20	Cyanobacteria
3	Jan 27	Euglenoids, Haptophytes and Dinoflagellates
4	Feb 3	Photosynthetic Stramenopiles Part 1 (Diatoms, Chrysophytes, Xanthophytes)
5	Feb 10	Photosynthetic Stramenopiles Part 2 (Phaeophytes) and Kelp Biomechanics
-	*Feb 17*	*READING BREAK - No labs or lectures*
6	Feb 24	Rhodophytes, Chlorophytes and Streptophytes
-	**Mar 3**	**LAB EXAM**
-	Mar 10	*No formal labs (attendance not required) – Preparation for presentations*
7	Mar 17	Phytoplankton Eco-Physiology
8*	Mar 24*	Seaweed Intertidal Field Trip*
9	Mar 31	Oral Presentations

*Lab #8 will <u>not</u> take place in Petch 109, but in a local intertidal area (details will be provided later in the term).

In the event of changes to the laboratory schedule, these changes will be announced in advance in the laboratory, during lecture and/or the Brightspace site. Please check Brightspace for announcements throughout the term.