

<b>Course ID:</b>	<b>Course Title:</b>	<b>Winter 2020</b>
ZOO 379	Introduction to Marine Biology	Prerequisite: BIO 133 or permission of department
		Credits: 3

**MODULE FORMAT CLASS**

Class Information		Instructor Information		Important Dates	
<b>Days:</b>	Mon-Fri, Feb 17-21 2020	<b>Instructor:</b>	Matthew Morris, PhD	<b>First day of classes:</b>	Mon, Feb. 17
<b>Time:</b>	All day	<b>Email:</b>	<a href="mailto:Matthew.Morris@ambrose.edu">Matthew.Morris@ambrose.edu</a>	<b>Last day to add/drop, or change to audit:</b>	4 pm, Tue, Feb 18
<b>Room:</b>	NA	<b>Phone:</b>	403-410-2000 ext 6932	<b>Last day to request revised exam:</b>	n/a
<b>Lab/ Tutorial:</b>		<b>Office:</b>	A2158	<b>Last day to withdraw from course:</b>	3 pm, Fri, Feb 21
<b>Office Hours:</b>		<b>Office Hours:</b>	NA	<b>Last day to apply for coursework extension:</b>	Monday, March 30
<b>Final Exam:</b>	NA			<b>Last day of classes:</b>	Fri, Feb 21

**Course Description**

This course is a zoology field course to Bamfield Marine Station. It will introduce students to the organisms found in the open ocean as well as the coastal and inter-tidal zones, how these organisms adapt to the environment, and the factors that control their productivity, distribution, and abundance. It will be multi-disciplinary, including aspects of animal biology, physiology, and ecology. It will incorporate lectures and class discussions but emphasize field work with organisms found in the coastal waters off British Columbia. Independent research papers will provide further opportunity to explore specific aspects of the Pacific Northwest oceanography.

**Expected Learning Outcomes**

After completion of this course, students will

- Have hands-on experience with identifying and handling marine specimens
- Be familiar with the biodiversity of the Pacific Northwest
- Gain an appreciation for the different ecosystems of the region
- Understand how an organism's physiology and ecology complement each other
- Compare and contrast ocean and terrestrial environments, and describe the properties of the marine environment that are associated with specific marine adaptations
- Distinguish between different marine zones in terms of their biotic and abiotic characteristics and the factors that affect their communities

- Understand the threats (and consequences) facing many of the marine organisms such as pollution, overfishing, global warming and ocean acidification, and invasive species
- Conduct an experiment on invertebrates and write a formal scientific paper

## Textbooks

Kozloff EN (1993) Seashore life of the Northern Pacific coast. Seattle: University of Washington Press.

## Course Schedule

Feb 17-21, 2020: Bamfield Marine Science Centre

March 16, 2020: Experimental paper due

April 20, 2020: Physiology/ecology of species paper due

The day to day itinerary is as follows:

### Monday, February 17<sup>th</sup> (Low tide of 1.0 m @ 14:11)

16:00 Arrive at BMSC on board Forest Bus. Settle into accommodations.  
 17:00 Tour of the facilities and safety orientation (Meet in Traffic Circle)  
 18:00 Dinner  
 19:00 Lab: Marine invertebrate diversity in Barkley Sound (Whale Lab)

### Tuesday, February 18<sup>th</sup> (Low tide of 0.8 m @ 15:20)

7:30 Breakfast  
 8:30 Lab: Seaweed identification, ecology, and human uses (Seaweed Lab)  
 10:30 Field trip: Temperate rainforest ecology (Meet in traffic circle, wear boots)  
 12:30 Lunch

Divide into two groups. Everyone dress warm and waterproof, you are on boats and outside all afternoon. Group 2, meet at docks a little earlier, around 13:20.

13:20 **Group 1**: Boat trip: Oceanography and plankton collection in Grappler Inlet  
**Group 2**: Boat trip: Ocean sampling aboard the research vessel Alta  
 15:30 **Group 1**: Boat trip: Ocean sampling aboard the research vessel Alta  
**Group 2**: Boat trip: Oceanography and plankton collection in Grappler Inlet  
 17:30 Souvenir sales in Whale Lab (with UBC)  
 18:00 Dinner  
 19:00 Workshop: Marine Conservation Case Studies (Rix A)  
 20:30 Video: At the edge of the sea (Rix A)

### Wednesday, February 19<sup>th</sup> (Low tide of 0.7 m @ 16:17)

7:30 Breakfast  
 9:00 Lab: DNA Barcoding and Microscopic examination of plankton and discussion of oceanographic data – isolate samples to be submitted to BOLD (Rix lower level)  
 12:30 Lunch  
 13:30 Presentation: Future learning opportunities at BMSC (Rix A)

14:00 Field trip: Intertidal explorations and seaweed collections at Eagle Bay  
17:00 Lab: Primary productivity part 1. Set up light and dark Winkler bottles  
18:00 Dinner  
19:00 Lab: Adaptations in marine mammals (Whale Lab)  
20:30 Homework time (Rix and library available)

**Thursday, February 20<sup>th</sup> (Low tide of 0.6 m @ 17:04)**

7:30 Breakfast  
8:30 Lab: Primary productivity part 2, titrations to determine dissolved oxygen  
10:30 Workshop: Ocean plastics: Using seabirds as indicators of ecosystem health  
12:30 Lunch  
13:30 Field trip: Sandy and rocky shores of Brady's beach  
17:30 Shuttle back to BMSC  
18:00 Dinner  
19:00 Nighttime visit to Aguilar Beach for more intertidal exploration –  
\*\*Tide will be rising (1.1m @ 19:00 and 2.2m by 21:00)  
When dark: Field trip: Bioluminescence from the BMSC docks

**Friday, February 21<sup>st</sup>**

7:00 Pack up and move out of accommodations. Stow bags in foyer of Main Building  
7:30 Breakfast, pack yourself a bag lunch  
8:30 Lab: Experimental marine biology (Whale Lab)  
12:00 Wrap-up lab, load bus and prepare to depart.  
12:30 Depart BMSC with bag lunches

**Requirements:**

Attendance, lecture, and laboratory work at Bamfield: 50%

Experimental paper: 25%

Research paper: 25%

**Attendance:**

Attendance at all labs and sessions at the marine station is mandatory.

Attendance at pre- or post-meetings is mandatory.

You will be graded on your field work, attendance, participation, and papers.

## Grade Summary:

Grad	Percent	Grade Point Value	Description
A+	96-100	4.00	Outstanding
A	92-96	4.00	Excellent - superior performance, showing comprehensive understanding of subject matter.
A-	88-92	3.70	
B+	83-88	3.30	
B	78-83	3.00	Good-clearly above average performance with knowledge of subject matter generally complete.
B-	73-78	2.70	
C+	68-73	2.30	
C	64-68	2.00	Satisfactory – basic understanding of the subject matter. Grade point average below 2.00 is not sufficient for promotion.
C-	60-64	1.70	Minimum grade required if needed as a prerequisite course
D+	55-60	1.30	
D	50-55	1.00	Minimal pass – marginal performance; generally insufficient preparation for subsequent courses in the same subject.
F	<50	0	Fail – unsatisfactory performance or failure to meet course requirements.

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

### Other:

For this course, we will travel to Bamfield Marine Science Centre, which borders Pacific Rim National Park on Vancouver Island, BC. We will spend several days doing hands-on activities that will incorporate lecture material in Marine Biology. There will be readings to be completed before the travel portion of the course, as well as papers to be completed when we return. Several weeks of pre-trip lectures will introduce you to the marine species of the region, as well as their physiology and ecology. You will be responsible for completion of your own research project while on site.

### Assignments:

The two papers that you will be required to write will be on:

- 1) A scientific experimental paper analysing and discussing the experiment you conducted while at Bamfield.
- 2) A scientific review paper on a marine-related topic (e.g. sound pollution, adaptation to changing temperatures, physiology of whale blubber, etc.).

## Trip details

- You are responsible for transportation to and from the airport
- Each of you must check in individually using your e-ticket. Make sure you have identification (passport, driver's license). Be at the airport early since security protocols may take time.
- Our flight **leaves at 10:30 am, WS 3171, on Monday Feb 17. This means you need to be at the airport no later than 8:30 am.**
- We are scheduled to return at **9:17 pm, WS 3336, on Friday Feb 21.**
- If you miss your flight, we cannot guarantee your arrival at Bamfield, nor can we refund your air fare, bus fare, or other costs, as these are paid in advance.
- The village of Bamfield has only two small convenience stores at which you can buy snacks and basic toiletries if you wish (it is unlikely you will have the opportunity to visit these). Otherwise, pack your own snacks!
- You will have the opportunity to purchase Bamfield gear on the final day at the station (t-shirts, sweatshirts, postcards, mugs, etc.)
- You will need money for lunch on Feb 17 and supper Feb 21.

## Checklist of personal gear to bring

1. **Photo ID and e-ticket:** airport check-in/security requires either a passport or driver's license in order to board the plane.
2. **Money/debit/credit card:** Debit card readers are available at Bamfield and an ATM is available in one store.
3. **Rain gear:** rain pants and rain jacket with hoods are necessary. A hat is handy.
4. **Rubber boots:** HIGHLY recommended
5. **Warm clothing:** wool sweaters, fleece, long johns, wool socks, etc. Do not bring materials containing down, as it is too heavy when wet. Field trips will last 2-3 hours and if it is windy and 5 degrees, it can feel very cold.
6. **Gloves:** wool or fleece. Also, a pair of rubber gloves are good to use when sorting through dredges.
7. **Change of clothes:** Bring at least **two complete changes of clothes** for each day. You will get wet and will want something to get into. Extra socks are useful. Coin-operated laundry is available if needed.
8. **Daypack:** as water-proof as possible.
9. Pens, pencils, notebooks may be handy.
10. Binoculars if you have them
11. Camera
12. **Personal hygiene:** shampoo etc is not provided
13. **Flashlight** – HIGHLY recommended for evening field trips
14. **Plastic bags** – to store camera, binoculars, spare clothing, etc.

## Emergency contact numbers

Should you need to contact someone at Bamfield

**Phone:** 250-728-3301

**Fax:** 250-728-3452

**Email:** BMSC has many computers with high-speed internet for email.

**Payphone in dining hall:** 250-728-9370

## After hours emergency only:

250-728-3469

The professor's private cell: \_\_\_\_\_

## Late assignment policies

Lab assignments and the dichotomous key cannot be submitted late without cause and approval from the professor. Lab assignments **are due at the end of lab**; the dichotomous key **at the beginning of the lecture**. Anything after the end of lab will be considered late. The penalty for late homework or lab assignments are as follows:

- 5%/day for late assignments that have been communicated to the professor ahead of time.
- 10%/day for late assignments if the professor has to track you down to find out what is going on.
- 0% on any assignments passed in one week after the due date, unless otherwise stated by the instructor. *These assignments will still be "graded" so that you can have feedback before the exam, even if your official grade is 0.*

**If your name is not on the assignment, it will not be graded and you will receive a grade of 0 for failing to submit an assignment.**

Missed midterms or final exams, without cause, cannot be made up. The only acceptable reason for missing an exam is illness, for which a doctor's note will be required, or death of an immediate family member. Give yourself plenty of time to get to school on exam days. Traffic or weather is no reason for missing an exam.

## Plagiarism policy

Some lab assignments will be submitted as a single copy per lab group. It is expected that all members of the group contribute equally to the assignment. This is a good opportunity to help your fellow students understand concepts they may be struggling with. Please ensure all members of the group are named on such assignments. **Group members whose names are not on the submitted assignment will receive a grade of zero.**

All other assignments will be submitted as one original piece of work per person. If you submit an assignment with only your name on it, it is assumed that you are the sole contributor of the work.

See below for Ambrose's statement defining plagiarism and outlining its consequences. In brief, it is your responsibility as a citizen of Ambrose to be aware of the policies of Ambrose and abide by them. Ignorance is no excuse. Plagiarism will not be tolerated.

Examples of plagiarism include, but are not limited, to:

1. Copying an assignment from someone else and submitting it as your own work.
2. Working with a friend and writing down identical answers, whether you understand the content or not, and submitting the assignments separately.
3. Quoting directly from a source without supplying quotation marks or a citation.
4. Quoting directly from a source without supplying quotation marks, even if it is referenced.
5. Copying nearly word-for-word from a source, changing only the occasional word, without providing quotation marks, even if it is referenced.
6. Submitting an assignment in which >30% of the content is properly quoted; that is, at least 70% of the words in an assignment need to be your own. A general rule of thumb: for every line quoted, there should be three lines of your own material explaining that quote.
7. Submitting the same or similar assignment for more than one class, or more than one iteration of the same class.

8. Not citing illustrations used in a paper.

### **Penalties for plagiarism**

For a first offense in any one of my classes, a zero on the assignment with no chance of rewriting it, and a note in your academic file.

For a second offense in any one of my classes, a zero in the class, and recommendation for a note on your transcript.

For a third offense in any one of my classes, a zero in the class and a recommendation for expulsion from the university.

Note that Ambrose has an appeals process in place if you feel that allegations of plagiarism are unfounded; these are for final marks only, and not for individual assignments.

Note that my record of a student's past plagiarism does not reset with each semester.

### **Classroom Etiquette:**

It is expected that students will take an active role in the learning process. This includes: (a) regular class and lab attendance, (b) reading course material in advance of class or labs, and (c) engaging in discussions during class or labs.

In respect to the professor and to your fellow students, we ask that you:

- a) Turn your phone off during class and that you don't use it for texting during lecture or lab;
- b) Not have conversations with the people beside you during lecture – it is very distracting to the people around you;
- c) Use your laptops for lecture material and assignments only – that you are not using the internet or Facebook during class time;
- d) Arrive to lecture and lab on time;
- e) Don't listen to music in class or lab.

These will help to maximize the learning experience for you and your fellow students (and will keep your professor in a good mood).

### **Mental Health Support**

All of us need a support system. We encourage students to build mental health supports and to reach out when help is needed.

On Campus:

- Counselling Services: [ambrose.edu/counselling](http://ambrose.edu/counselling)
- Peer Supportive Listening: One-to-one support in Student Life office. Hours posted at [ambrose.edu/wellness](http://ambrose.edu/wellness).
- For immediate crisis support, there are staff on campus who are trained in Suicide Intervention and Mental Health First Aid. See [ambrose.edu/crisissupport](http://ambrose.edu/crisissupport) for a list of staff members.

Off Campus:

- Distress Centre - 403-266-4357
- Sheldon Chumir Health Care Centre - 403-955-6200
- Emergency - 911

## Sexual Violence Support

All staff, faculty, and Residence student leaders have received *Sexual Violence Response to Disclosure* training. We will support you and help you find the resources you need. There is a website with on and off campus supports – [ambrose.edu/sexual-violence-response-and-awareness](http://ambrose.edu/sexual-violence-response-and-awareness).

Off Campus:

- Clinic: Sheldon Chumir Health Centre - 403-955-6200
- Calgary Communities Against Sexual Abuse - 403-237-5888

## Ambrose University Academic Policies:

### Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

### Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the [my.ambrose.edu](http://my.ambrose.edu) website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

### Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled

final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

### Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period



unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

#### **Appeal of Grade**

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

#### **Academic Integrity**

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

**Note:** Students are strongly advised to retain this syllabus for their records.