OCSC 2000 - *Introductory Biological Oceanography* (Winter 2023)

Course Instructor (CI) and Teaching Assistant (TA):

Name	Office	Phone	E-mail address
Dr. Patrick Gagnon (CI)*	TBA (on campus) OS-4017 (OSC)	864-7663	pgagnon@mun.ca (Do NOT use my Brightspace address)
Verena Alisa Kalter (TA)	--	--	vakalter@mun.ca

*Office hours and availability: 13:00-15:30 on Tuesdays and Thursdays (TBA, on campus) or by appointment. Meetings over the phone or WebEx can be booked by email. Response times for inquiries: every effort will be made to respond to emails within 24h, with the exceptions of evenings, weekends and holidays.

Course Format:

Three hours of lecture per week: Tuesday and Thursday, 10:30-11:45 (Slot 18); SN-3042 when in-person OR WebEx (via Brightspace) if/when remote (online; both synchronous and asynchronous)

Course Description:

Introductory Biological Oceanography provides a general understanding of the biological processes that occur in coastal and oceanic environments. It introduces students to the major groups of bacteria, phytoplankton, invertebrates and fish, emphasizing the biotic and abiotic factors controlling primary production and marine biomass. It shows how the physical, chemical, and geological environments interact with biology to define processes and patterns affecting nutrients and life in marine ecosystems.

Learning Objectives:

- To master the terminology used in the field of biological oceanography;

- To understand and explain interactions among geological, chemical, physical, and biological factors and processes that govern the genesis, maintenance, and alteration of life in major ocean basins and ecosystems;

- To know how dominant organisms of the oceans interact together and with the environment through cellular, morphological, physiological, and behavioral adaptations;

- To understand the impact of natural and anthropogenic disturbances on organisms and the structure and function of ocean ecosystems;

- To know major conceptual and technological advances in the field of oceanography;

- To develop the ability to research, summarize, present, and criticize scientific content in writing and orally.

Prerequisite:
OCSC 1000 *Exploration of the World Ocean*

Tentative Course Schedule:

Lecture	Date	Topic	Chapter
1	Thu. Jan. 5	Syllabus; Introductory documentary + discussion	-
2	Tue. Jan. 10	Review: Organisms, Habitats; Evolution; Nomenclature; Body organization and functioning	-
3	Thu. Jan. 12	QEII Library Instruction Session ***MANDATORY***	-
4	Tue. Jan. 17	Body organization and functioning (end); History of Oceanography; Floor Physiography; Porifera	1 & 2
5	Thu. Jan. 19	Origin and Dynamics of Ocean Basins; Cnidaria	3
6	Tue. Jan. 24	Sedimentation in the Ocean; Annelida (Polychaeta)	4
7	Thu. Jan. 26	Properties of Seawater I; Arthropoda (Crustacea)	5
8	Tue. Jan. 31	Properties of Seawater II; Mollusca	5
9	Thu. Feb. 2	Wind and Ocean Circulation; Echinodermata	6
10	Tue. Feb. 7	Tides	8
---	Thu. Feb. 9	**1st Exam** (20%, Lectures 1 to 7)	-
11	Tue. Feb. 14	Waves	7
12	Thu. Feb. 16	The Ocean Ecosystem I (phytoplankton; zooplankton)	9, 10, 13
---	Tue. Feb. 21	No lecture (Winter semester break)	-
---	Thu. Feb. 23	No lecture (Winter semester break)	-
13	Tue. Feb. 28	The Ocean Ecosystem II (energy flow; productivity; mixing)	9, 10, 13
14	Thu. Mar. 2	The Ocean Ecosystem III (fish and other nekton)	9, 10, 13
15	Tue. Mar. 7	Coastal Habitats I (kelp; seagrass)	12
16	Thu. Mar. 9	Coastal Habitats II (coral reefs)	12
17	Tue. Mar. 14	Special topic presentation (Title TBA); Synthesis	-
---	Thu. Mar. 16	**2nd Exam** (20%, Lectures 8 to 13)	-
18	Tue. Mar. 21	Student Presentations (Term Paper)	-
19	Thu. Mar. 23	Student Presentations (Term Paper)	-
20	Tue. Mar. 28	Student Presentations (Term Paper)	-
21	Thu. Mar. 30	Student Presentations (Term Paper)	-
22	Tue. Apr. 4	Student Presentations (Term Paper)	-
23	Thu. Apr. 6	Student Presentations (Term Paper)	-
Exam period (Apr. 12 to 21)		**Final Exam** (20%, date to be announced)	

Recommended Textbooks (available at MUN bookstore):

Pinet P., 2021 (8th edition) *Invitation to Oceanography*. Jones and Bartlett, e-book: 9781284164718- Navigate 2 Advantage Access for Invitation to Oceanography, Eighth Edition

Brusca, Moore, Shuster, 2016 (3rd edition) *Invertebrates*. OUP, 1104 p. ISBN 978-1-605-35375-3

Note: Additional material for the course will be posted on the course's Brightspace shell as needed. Material to consult will be communicated ahead of lectures.

Evaluation:

- 1st Exam	20% (Thursday, Feb. 9)
- 2nd Exam	20% (Thursday, Mar. 16)
- Final Exam	20% (date and time TBA by Registrar's Office)
- Quizzes	15% (continuous)
- Term Paper (Outline)	5% (Thursday, Feb. 2)
- Term Paper (Report)	10% (see "Term Paper Instructions" for due dates)
- Term Paper (Presentation)	10% (see "Term Paper Instructions" for presentation dates)

The above grades are expressed as a percentage of the total mark for the course. Marks will be deducted for assignments submitted after the due date without legitimate cause. No assignments will be accepted or graded after the last day of lectures in the semester (Apr. 6), unless prior approval has been given and there are documented extenuating circumstances. Students supplying a medical certificate when requesting waivers or other special consideration should review Clause 6.7.5 of the General Academic Regulations (Undergraduate) in the Calendar, and ensure that their documentation meets the standards required by the University.

Suggested strategy to do well in this course:

1) Attend lectures. Important material is regularly discussed that does not necessarily appear in the lecture notes or the material distributed for the lectures;

2) Ask questions. If a question comes to mind chances are that most classmates have the same question. Do not hesitate to ask for clarification;

3) Prepare ahead. Read the lecture notes (posted on the Brightspace course shell) and relevant chapters in the suggested textbook ahead of lectures.

4) Study early, do not delay. We cover a lot of (interesting!) material in this course so do not wait until the week before an exam to start studying. A certain amount on memorization is required to understand and integrate general concepts, which requires that your review your notes regularly;

5) Seek help outside of lectures. If you experience difficulties, meet with the instructor during hours of office and availability (listed above). Contact the instructor (if by email: pgagnon@mun.ca) to set individual appointments if hours of office and availability are not compatible with your schedule.

Instructional Continuity (should course be disrupted) and Use of Visual and/or Audio Recordings:

In case of course disruption, OCSC 2000 will transition to remote delivery, through Brightspace, for the duration of the disruption. Individual topics/lectures/assignments may be altered/cancelled at the discretion of

Patrick Gagnon. Remote lecture delivery may be synchronous or asynchronous, at the discretion of Patrick Gagnon, and may involve the use of previously recorded lecture material. Remotely delivered lectures, unless otherwise notified, will be recorded. Comments and questions by those present in the class may be captured in the audio of the recording. Additionally, student presentations/participation may be captured on video. Recordings will be used only for course delivery and will be available to students until classes end. Questions or concerns about the use of recordings in this course should be directed to Patrick Gagnon.

Absenteeism by Individual Students:

Leniency in the application of evaluation requirements and the enforcement of deadlines will be granted to individual students who are forced to miss classes for reasons including showing COVID-19 symptoms, as specified by MUN regulations, due to the contraction of COVID-19 or the requirement to attend to a family member afflicted. Accommodations will vary on a case-by-case basis and may include extended deadlines for assignments, revisions to the weightings of specific assignments, substitution of assignment types, averaging of quiz results based on a reduced number of quizzes, etc. The discretion to invoke such changes rests with Patrick Gagnon who may consult with the Head of the Department of Ocean Sciences. With regards to group project (Term Paper), where absenteeism and granting of extensions could affect the progress and grades of more than one student, appropriate reweighting/extension/substitution of grades for all students involved will be considered by Patrick Gagnon based on the size, scope, and due dates of group project.

Class Cancellations:

Should Patrick Gagnon miss a small number of individual classes (one week or less) due to illness or as part of COVID-19 protocols, pre-existing recorded lectures may be used as a replacement for missed lectures. If more than a week of lecture has been cancelled due to Patrick Gagnon's absence or compromisingly high levels of absenteeism, a revision of the evaluation methods for the course will be initiated by Patrick Gagnon. In the case of a class disruption or cancellation, and in the case of revisions to evaluation methods, Patrick Gagnon or the Head of the Department of Ocean Sciences will notify all students registered in the course via the course shell in Brightspace. Any necessary revisions to the evaluation methods will be made in consultation with the students registered in OCSC 2000. If a student demonstrates that they would be disadvantaged by the change, then, as per 6.7.4 of the University Calendar, accommodations will be made.

Academic Integrity:

Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

Plagiarism:

As outlined in Section 4.12.4 of MUN's Calendar, plagiarism (the act of presenting the ideas or works of another as one's own) is a form of academic offence. Plagiarism will not be tolerated in this course. Any

student who plagiarizes another's work exposes himself/herself to the disciplinary measures outlined in section 4.12 of MUN's Calendar, including course expulsion. I will provide guidelines on how to avoid this problem.

Copyright:

The lectures and displays (and all material) delivered or provided in OCSC 2000 – *Introductory Biological Oceanography* by Patrick Gagnon, including any visual or audio recording thereof, are subject to copyright owned by Patrick Gagnon. It is prohibited to record or copy by any means, in any format, openly or surreptitiously, in whole or in part, in the absence of express written permission from Patrick Gagnon any of the lectures or materials provided or published in any form during or from the course.

Accommodation of Students with Disabilities:

Memorial University of Newfoundland is committed to fostering equitable and accessible learning environments for all students. Accommodations for students with disabilities are provided in accordance with Accommodations for Students with Disabilities Policy (www.mun.ca/policy/site/policy.php?id=239) and its related procedures. Students who feel that they may require formal academic accommodations to address barriers or challenges they are experiencing related to their learning are encouraged to contact Accessibility Services (the Blundon Centre) at the earliest opportunity to ensure any required academic accommodations are provided in a timely manner. You can contact Accessibility Services by emailing blundon@mun.ca

Other Student Supports and Services:

The Writing Centre:	https://www.mun.ca/writingcentre/
Center for Innovation in Teaching and Learning:	https://www.citl.mun.ca/
Information Technology Services:	https://www.mun.ca/cio/itservices/index.php
Student Wellness and Counselling Centre:	https://www.mun.ca/studentwellness/