

**Faculty of Science Course Syllabus
Department of Oceanography
OCEA 2020.03
Tools & Concepts in Ocean Sciences I
Fall 2015**

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Section:	01	11 x 3 hr sessions	Mondays	13:30-16:30	LSC B4012
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Course Description

Students gain practical insights into oceanographic concepts introduced in OCEA 2000.06 through lab exercises. Labs focus on instruments and calibration, ocean optics and acoustics, mapping and remote sensing, particle dynamics, dissolved oxygen and pH. Labs involve data acquisition and analyses to develop quantitative skills. Some familiarity with 'R' programming is recommended.

Prerequisites

- MATH 1000.03
- STAT 1060.03
- PHYC 1280.03/1290.03 (or PHYC 1300.06)
- At least one credit from:
 - BIOL 1010/1011 or (BIOL 1020.03/1021.03)
 - CHEM 1011.03/1012.03
 - EARTH 1080.03/1090.03

Corequisite

- OCEA 2000.06

Course Objectives/Learning Outcomes

This is a laboratory class and focuses on how we study the ocean and interpret data as oceanographers.

1. Demonstrate basic laboratory skills and knowledge of laboratory safety.
2. Operate and calibrate various laboratory instruments.
3. Perform laboratory analyses using common techniques and protocols.
4. Synthesize data and identify trends.
5. Apply concepts introduced in the classroom to interpret data.
6. Present laboratory activities in written format using figures and tables.
7. Compare data collected with data collected by another and/or cited in peer-reviewed journals.
8. Use previous results and calculations to predict outcomes of experiments.
9. Assess efficacy of laboratory activities and offer suggestions for future work.
10. Appreciate the breadth of techniques and instruments used to study the ocean.

Course Materials

This class uses a custom lab manual. The manual is available to download on BbLearn. It is essential that you check BbLearn regularly. BbLearn will be used to make announcements as well as provide lab manuals, assigned readings, presentation notes, and more. Students are responsible for any printing of the supplied material. Students will need a lab notebook for the course.

Personal Protective Equipment (PPE)

The Occupational Health and Safety Act requires that employees/students wear protective equipment based on the hazards to which they are exposed.

- Instructors will inform students of any potential hazards associated with each lab module and recommend use of any PPE needed.
- It is the student's responsibility to wear any recommended PPE and maintain it in good condition.
- Gloves and glasses will be provided when necessary.
- *Students must supply their own lab coat when necessary.*
- No open-toed shoes in the lab.

Course Assessment

Components	Weight (% of final grade)
Lab Notebook:	10 %
Assignments:	90 %
Exercises	60 % (8 x 7.5 % each)
Reports	30 % (3 x 10 % each)

Assignments

Assignments are submitted *in hardcopy* by 17:00 on the due date. Assignments may be submitted during class or to the Oceanography Main Office (open M-F 8:30-16:30). A lab report format and guidelines document is available to students on BbLearn. Late assignments are penalized 10 % per day.

Lab Notebooks

Students are required to use lab notebooks to record relevant notes. Lab notebooks will be checked in-class on four undisclosed dates during the term. A lab notebook format and guidelines document is available to students on BbLearn. There will be no late notebooks checks.

Attendance

Attendance is mandatory; students must attend lab to submit an assignment. Makeup labs are offered for a limited set of circumstances:

1. *Illness* – Notify the instructor ASAP and submit proof of their illness valid for the date of class.
2. *Extracurricular Activities* – Notify the instructor at least two weeks in advance for approval.
3. *Emergencies* – Notify the instructor ASAP. Permission to complete and makeup lab will be granted on a case-by-case basis.

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 Structure

Class meets once a week for three hours. Class begins with a short presentation and discussion of last week's activities. Students receive a brief introduction to the week's topic and then spend the remaining class time completing their lab activities. There is an assignment each week, and students have a minimum of one week to complete each assignment.

Course Content

Section 01 - Mondays

Lab #	Lab Topic	Lab Date	Assignment Due	Assignment Type
1	Introductions	12-Sep	19-Sep	Exercise
2	Sensors I	19-Sep	26-Sep	Exercise
3	Sensors II	26-Sep	03-Oct	Report
4	Optics	03-Oct	17-Oct	Exercise
	NO CLASS	10-Oct	--	--
5	Acoustics	17-Oct	24-Oct	Report
6	GPS & Mapping	24-Oct	31-Oct	Exercise
7	Particle Size & Composition	31-Oct	14-Nov	Exercise
	NO CLASS	07-Nov	--	--
8	Settling Velocity	14-Nov	21-Nov	Exercise
9	Vertical Flux	21-Nov	28-Nov	Report
10	pH	28-Nov	05-Dec	Exercise
11	Dissolved Oxygen	05-Dec	12-Dec	Exercise

ACCOMMODATION POLICY FOR STUDENTS

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie's Student Accommodation Policy can be accessed here:

http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html

Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the **Advising and Access Services Centre (AASC)** prior to or at the outset of the regular academic year. More information and the ***Request for Accommodation*** form are available at www.dal.ca/access.

ACADEMIC INTEGRITY

Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.

The Academic Integrity website (<http://academicintegrity.dal.ca>) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie's ***Policy on Intellectual Honesty*** and ***Faculty Discipline Procedures*** is available here:

http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

STUDENT CODE OF CONDUCT

Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:

"The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect

- the integrity and proper functioning of the academic and non – academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members."

The full text of the code can be found here:

http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

SERVICES AVAILABLE TO STUDENTS

The following campus services are available to help students develop skills in library research, scientific writing, and effective study habits. The services are available to all Dalhousie students and, unless noted otherwise, are free.

Service	Support Provided	Location	Contact
General Academic Advising	Help with <ul style="list-style-type: none"> - understanding degree requirements and academic regulations - choosing your major - achieving your educational or career goals - dealing with academic or other difficulties 	Killam Library Ground floor Rm G28 <i>Bissett Centre for Academic Success</i>	In person: Killam Library Rm G28 By appointment: <ul style="list-style-type: none"> - e-mail: advising@dal.ca - Phone: (902) 494-3077 - Book online through MyDal
Dalhousie Libraries	Help to find books and articles for assignments Help with citing sources in the text of your paper and preparation of bibliography	Killam Library Ground floor Librarian offices	In person: Service Point (Ground floor) By appointment: Identify your subject librarian (URL below) and contact by email or phone to arrange a time: http://dal.beta.libguides.com/sb.php?subject_id=34328
Studying for Success (SFS)	Help to develop essential study skills through small group workshops or one-on-one coaching sessions Match to a tutor for help in course-specific content (for a reasonable fee)	Killam Library 3rd floor Coordinator Rm 3104 Study Coaches Rm 3103	To make an appointment: <ul style="list-style-type: none"> - Visit main office (Killam Library main floor, Rm G28) - Call (902) 494-3077 - email Coordinator at: sfs@dal.ca or - Simply drop in to see us during posted office hours All information can be found on our website: www.dal.ca/sfs
Writing Centre	Meet with coach/tutor to discuss writing assignments (e.g., lab report, research paper, thesis, poster) <ul style="list-style-type: none"> - Learn to integrate source material into your own work appropriately - Learn about disciplinary writing from a peer or staff member in your field 	Killam Library Ground floor Learning Commons & Rm G25	To make an appointment: <ul style="list-style-type: none"> - Visit the Centre (Rm G25) and book an appointment - Call (902) 494-1963 - email writingcentre@dal.ca - Book online through MyDal We are open six days a week See our website: writingcentre.dal.ca