

**Department of Chemistry
CHEM 6361
Sustainable Materials Issues
Summer 2018/19**

Instructor: Dr. Mark Obrovac, *email:* Mark.Obrovac@Dal.Ca, *office:* Chemistry room 315

Lectures: Fridays 10:35-11:25, Room 540

Laboratories: None

Tutorials: None

Course Description

This course will provide a quantitative coverage of matters concerning eco-informed choices of materials for applications, with an emphasis on energy and sustainability.

Course Prerequisites

Permission of the instructor

Course Objectives/Learning Outcomes

This class offers an introduction to the sustainable use of materials with emphasis on advanced materials for consumer products. Topics include a quantitative overview of global energy issues, resource consumption and its drivers, eco-audits and eco-audit tools, life-cycle analysis, eco-informed materials selection and sustainable approaches to development of advanced materials. Students will be obtain an understanding of the sustainability of common materials and elements taking into account their entire life cycle. In addition they will be able to undertake a complete and quantitative Life Cycle Assessment of new materials, products or processes. This will enable them to evaluate their environmental impact and make informed choices regarding their utilization.

Required Course Materials

None.

Course Assessment

Component	Weight (% of final grade)	Date
<i>Assignments</i>		
<i>Homework</i>	<i>50 %</i>	<i>Assigned Weekly</i>
<i>Term Paper</i>	<i>50 %</i>	<i>Friday, June 7, 2019, 4:25pm</i>

Description of Term Paper:

Independent work. The topic of the paper must be approved by the instructor. Maximum 30 pages double spaced, not including references and formatted according to the guidelines of American Physical Society journals.

The term paper should give a complete and fully referenced description of topics relating to the sustainability of a specific resource. Suitable resources can include those derived from non-living sources such as chemical elements and minerals, as well as those from living sources, such as oil, wood, cotton, etc. The report can include details regarding the sourcing, processing, use, waste, and possible recycling of the resource. As a conclusion, the paper must provide a detailed projection of the resources future use (e.g. years of use left before the resource is lost) and possible ways of mitigating loss of the resource (e.g. recycling, use of substitute materials).

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 Policies

In the case of a weather-related closure of the University, notification will be on the Dalhousie website and on local radio stations. If a class needs to be cancelled in another emergency, every attempt will be made to contact students via email. It is the responsibility of students to read their Dalhousie email regarding class announcements.

Course Content

1. Sustainability, resource availability, depletion and drivers
 2. Quantification of life cycle inputs and emissions
-

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. **Student Accommodation Policy:** http://www.dal.ca/campus_life/student_services/academic-support/accessibility.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.

Policy on Intellectual Honesty and Faculty Discipline Process:

https://www.dal.ca/dept/university_secretariat/academic-integrity.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.

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

COPYRIGHT

All members of the Dalhousie community are expected to comply with their obligations under Canadian copyright law. Dalhousie copyright policies and guidelines, including our Fair Dealing Guidelines, are available at <http://www.dal.ca/dept/copyrightoffice.html>.

SERVICES AVAILABLE TO STUDENTS

The following campus services are available to all Dalhousie students. Unless noted otherwise, the services 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 Bissett Centre for Academic Success	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 - e-mail Coordinator at: sfs@dal.ca or - 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 a tutor to discuss writing assignments (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 Writing Centre in the Killam Learning Commons (Rm G40) and book an appointment - Call (902) 494-1963 - e-mail writingcentre@dal.ca - Book online through MyDal We are open six days a week See our website: writingcentre.dal.ca