Faculty of Science Course Syllabus
Department of Biology

Environmental Ecology (BIOL 3060)
Fall 2017

Instructor: Rajesh Rajaselvam  Email: Rajesh.Rajaselvam@Dal.Ca  Office: LSC 3082
Office Hours: Tuesday/Friday 14:30 – 15:30 pm, Thursday by appointments

Lectures: Tuesday & Thursday 13:05 – 14:25 hrs (LSC/C238)

Tutorials: 5 tutorials (150 min/tutorial)
Monday 14:35 – 16:25 pm (LSC 234 & P5208, McCain Arts & SS 1116 & 2021)

Course Description
This course highlights the ecological effects of pollution, disturbance, and other stressors, both anthropogenic and natural. Major subject areas are air pollutants, toxic metals, acidification, eutrophication, oil spills, pesticides, forestry, warfare, urban ecology, risks to biodiversity, and resource degradation. The overarching context of the course is ecological sustainability of the human economy.

Course Prerequisites
BIOL 2060.03 or BIOA 3001.03 or instructor’s permission.

Course Textbook

Learning Objectives
- Describe major kinds of disturbances.
- Understand ecological integrity and its indicators.
- Understand sustainability and ecological sustainability.
- Demonstrate a basic knowledge of human population issues.
- Demonstrate a deeper knowledge of a chosen topic through formal group oral presentation and report writing.
- Demonstrate basic environmental ethics.
- Understand environmental impacts of agriculture, forestry, fossil fuels and minerals, and urbanization.
- Understand environmental stressors, both natural and anthropogenic.
- Understand key toxins and pollution (toxic and greenhouse gases, metals, nutrients, petroleum, pesticides).
Course Assessment

<table>
<thead>
<tr>
<th>Assignment, Exam, or Presentation</th>
<th>Marks %</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz 1</td>
<td>08</td>
<td>Oct 05</td>
</tr>
<tr>
<td>Mid-Term Exam</td>
<td>24</td>
<td>Oct 17</td>
</tr>
<tr>
<td>Oral Presentation (group presentation)</td>
<td>10</td>
<td>Nov 14, 16 &amp; 20</td>
</tr>
<tr>
<td>Quiz 2</td>
<td>08</td>
<td>Nov 23</td>
</tr>
<tr>
<td>Lab/Seminar Reports</td>
<td>20</td>
<td>TBA/See Brightspace</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
<td>Scheduled by Registrar</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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Oral Presentation
Students are expected to do a 12 minute power point presentation (Group) on their chosen topic related to Environmental Ecology.

*Evaluation rubric
Evaluate the presentation by checking the grade the student achieved in the following categories:

<table>
<thead>
<tr>
<th>The presentation was relevant and well organized.</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
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<tbody>
<tr>
<td>The topic on ‘Environmental Ecology’ was covered in a clear and understandable fashion.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>The presentation was very well timed.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Presentation resources were incorporated and used effectively.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>The student/group responded effectively to questions posed by the audience.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Main points were effectively summarized at the end of the presentation.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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Overall grade: Total (out of 30) is reduced to out of 10

Grading Scale
Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

<table>
<thead>
<tr>
<th>A+ (90-100)</th>
<th>B+ (77-79)</th>
<th>C+ (65-69)</th>
<th>D (50-54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (85-89)</td>
<td>B (73-76)</td>
<td>C (60-64)</td>
<td>F (&lt;50)</td>
</tr>
<tr>
<td>A- (80-84)</td>
<td>B- (70-72)</td>
<td>C- (55-59)</td>
<td></td>
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Course Policies

Class participation is considered vital.

Tutorial/Seminar sessions are compulsory. Complete attendance of all lectures is highly recommended, since it helps to improve your grade significantly.

Meeting deadlines is mandatory. No late submission without valid reason is accepted for marking.

Brightspace (course web-tool) will be used for regular updates and announcements. TAs are the first point of contact (unless for major issues), and copying the instructor on messages is highly recommended.

Course Content

Schedule (Tentative)

A. Lectures

Week 1
Sep 05 - Course Introduction
Sep 07 - Ecosystems and Humans (Chap 1)

Week 2
Sep 12 - Energy and Ecosystems, Cycles of Nutrients (Chap 4 & 5)
Sep 14 - Biomes and Eco-zones (Chap 8)

Week 3
Sep 19 - Global/Canadian Populations/ Discussion session by TAs (Chap 10 & 11)
Sep 21 - Resources and Sustainable Development/ Panel Discussion (Chap 12)

Week 4
Sep 26 - Renewable vs Non-renewable Resources/ Panel Discussion (Chap 13 & 14)
Sep 28 - Air Pollution/Climate Change (Chap 16 & 17)

Week 5
Oct 03 - Pollution and Disturbance/Environmental Stressors (Chap 15)

Oct 05 - Quiz 1 ...8 Marks

Week 6
Oct 10 - Current Environmental Issues (Movie)
Oct 12 - Midterm Review & Individual Question Period

Week 7

Oct 17 - Midterm Exam (13:00 – 14:20 hrs @ C238)...24 Marks
Oct 19 - Trees and Environment, Introduction to Students’ Oral Presentations

Week 8
Oct 24 - Toxic Elements (Chap 18)
Oct 26 - Oil Spills/Pesticides (Chap 21 & 22)

Week 9
Oct 31 - Forestry and Conservation (Chap 23)
Nov 02 - Agriculture and Environment (Chap 24)

Week 10
Nov 06 – 10 - Fall Study Break

Week 11

Nov 14, 16 & 20 - Students’ Presentation ...... 10 Marks
Week 1
Nov 21 - The Biodiversity Crisis (Based on Chap 26)

Nov 23 - Quiz 2 .... 8 Marks

Week 13
Nov 28 - Water and Conservation/ Guest Lecture
Nov 30- End-Term revision, Final Meeting with TAs (LSC/C236) & Individual Question Period

Final Exam (Scheduled by Registrar) ...30 marks

B. Seminar/Tutorial sessions
Attendance Mandatory, (4 x 5) = 20 marks
Sep 18: Tutorial 1: Serengeti National Park/ Movie (Report required)
Sep 25: Tutorial 2: Paper critique/Preparation
Oct 02: Tutorial 2: Paper critique/Final submission (Report required)
Oct 23: Tutorial 4: Topic/Discussion on oral presentation (group activity)
Oct 30: Tutorial 4: Oral presentation/PPT preparation and submission
Nov 14, 16 & 20: Students’ oral presentations
Nov 27: Tutorial 5: Biodiversity crisis/ Group discussion (Report required)
“Galapagos” The Island That Changed the World/Movie

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Academic Integrity
At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.
Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility
The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).
Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct
Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don’t follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can’t be reached, or would be inappropriate, procedures exist for formal dispute resolution.
Diversity and Inclusion – Culture of Respect
Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness.

Statement: http://www.dal.ca/cultureofrespect.html

Recognition of Mi’kmaq Territory
Dalhousie University would like to acknowledge that the University is on Traditional Mi’kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit the office (Rm 3037, McCain Building), e-mail (elders@dal.ca) or leave message (902-494-6803).

Information: https://www.dal.ca/campus_life/communities/native.html

Important Dates in the Academic Year (including add/drop dates)
https://www.dal.ca/academics/important_dates.html

University Grading Practices
https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: https://www.dal.ca/faculty/science/current-students/academic-advising.html

Aboriginal Student Centre: https://www.dal.ca/campus_life/communities/native.html

Black Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: https://libraries.dal.ca/

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: https://libraries.dal.ca/services/copyright-office.html


Other supports and services

Student Health Services: https://www.dal.ca/campus_life/health-and-wellness/health-services/services.html

Counselling: https://www.dal.ca/campus_life/health-and-wellness/counselling.html

Student Advocacy: https://www.dsu.ca/services/community-student-services/student-advocacy-service

Safety

Research Lab Safety:  

Biosafety:  https://www.dal.ca/dept/safety/programs-services/biosafety.html

Chemical Safety:  https://www.dal.ca/dept/safety/programs-services/chemical-safety.html

Radiation Safety:  https://www.dal.ca/dept/safety/programs-services/radiation-safety.html

Scent-Free Program:  https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html

Questions?
Visit forums on Brightspace and/or send emails via Brightspace.

Rajesh Rajaselvam
Rajesh.Rajaselvam@Dal.Ca
LSC 3082 (902.494.4251)