Subject Description Form

Subject Code	ABCT1D15
Subject Title	Our Endangered Earth
Credit Value	3
Level	1
Pre-requisite	Nil
Co-requisite	Nil
Exclusion	ABCT2014 Our Endangered Earth
Objectives	To provide basic knowledge to students how human activities led to the deterioration of this planet, their consequences and possible remediation measures, and outlook of various scenarios based on differences of our everyday life choices.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) apply their knowledge and principles on general environmental science to analyze everyday issues; b) identify key environmental problems and solution options; c) know the limitations of nature and how natural balances are maintained; d) be aware of the latest scientific developments in our society and their likely environmental impacts; and e) understand consequences of their everyday life actions on the environment and become ethical members of the society.
Subject Synopsis/ Indicative Syllabus	We will begin with exploring the beauty of our natural environment and what it provides for us. Then we will move into some major environmental topics and look at each of them in details, discussing their causes and consequences, distinguishing genuine crisis from false ones based on scientific reasoning and evidence, and what each of us can do to combat them. **Our green inheritance and limited planet (6h)** • Guardians of the environment – Is it our mission? • Our daily bread –Importance of solar energy, fertile soil and water to provide for us • Green medicine – Potential medicinal use of living organisms and their conservation • Maintenance of natural resources – Changes in ecosystems by human activities, e.g. desertification and deforestation **The crisis (27h~~; 3hr on each topic~~)** • Natural catastrophes – Asteroid impact, earthquake, tsunami, volcanic

<table>
<tr><td></td><td>eruption, typhoon, tornado, flood, severe drought and landslide- how likely are they, and should we be afraid?
• Energy supply – How much do we use and how much do we have? What is the problem? Any possible solution?
• Wastes, chemicals and environmental pollution – Reuse, reduction, recycle and disposal of waste, natural and artificial recycling of materials, health hazards of improper disposal.
• Disease – Diseases in human history and future. Use and misuse of antibiotics and other drugs, the origins of zoonotic diseases and public health crisis.
• Threats on wild-life – Extinction of species and its many causes. How to assess vulnerability of species and what we can do to help.
• Biotechnology and the environment – What have we achieved? What are the possible consequences of genetic manipulation? Is GM food really bad for us?
• Global climate change –What are the causes and consequences? Can it be prevented?

Examples of concepts and ideas to be covered in this course

o Green and environmental labeling
o Green capitalism
o Ecological footprint, carbon footprint, carbon credit
o Eco-tourism</td></tr>
<tr><td>Teaching/Learning Methodology</td><td>Lectures and tutorials will be the main tool to deliver teaching. We will choose course materials based on its importance to the topic and relevance to students' daily lives. Lecture notes, videos, Blackboard and other teaching tools will be used.

During tutorials, materials such as recent environmental news or case study will be provided. Students will participate in group discussion to evaluate the material.

In addition, some tutorials will be assigned to help students on their course paper writing.

Students are also expected to study reference materials distributed in class, from the library or any other sources (e.g. films, newspaper and magazine clippings and information available on the Internet).</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="7">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td></td><td></td></tr>
<tr><td>1. Short quiz</td><td>15%</td><td></td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>2.Group Presentation</td><td>35%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
<tr><td>4. Course paper</td><td>50%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td><td></td><td></td></tr>
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Total	100 %	

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Course assessment:
Short quiz 15% ~~30%~~ ~~Reflective essay~~ Group presentation 35% Course paper 50%

10% from feedbacks on two drafts (by ELC staff) 40% from final paper

Three post-lecture quizzes are aimed to encourage active participation and concentration in learning. A case study will be given to the students during each quiz and students will need to apply the key concepts covered in the lectures for analysis and to answer questions. The aim of these quizzes is to encourage students' active participation in learning and allow the lecturers to closely monitor the learning progress of the students. Feedback to quizzes will be provided to students to clarify any misunderstanding.

Students will be asked to give a group presentation at the end of the course. Students are encouraged to form groups and gather materials to make a presentation on given topics about recently environmental crisis. Through group presentation, students can consolidate their higher order thinking, such as problem identification and solving skill, analytical mind, as well as critical and creative thinking for conducting experiments and report writing. Creative ideas can be solicited through the preparation of group presentation and discussion among the students. For group presentation, the students can apply their lifelong learning skill and can draw conclusion and recommendation. In this subject, students are required to do extensive reading (such as published literatures, reference books and government reports/websites and internet) and analyze information for possible action formulation via self-study and group communication.

The course paper will require students to present an environmental issue of their choice and to discuss its cause, consequence and how the issue can be tackled, based on available scientific evidence. In this exercise, students will need to apply their knowledge and concepts of general environmental science and critical thinking skills for analysis. In addition, students' awareness on environmental issues and new scientific development can be enhanced.

Students are allowed to use GenAI tools to support their writing of and essays. If GenAI tools are used to support their essay writings, students must declare the use of such tools and how they have been used in the assessments. It should be noted that submitting a work generated by GenAI, in part or in whole, as your own (even in paraphrased form) constitutes an act of academic dishonesty; it is no different from asking another person to write your assignment or claiming others' ideas as yours.

<table>
<tr><td rowspan="3">Student Study Effort Expected</td><td>Class contact:
▪ Lecture
▪ Tutorial
▪ Meeting with ELC staff</td><td>
26 hours
12 hours
1 hours</td></tr>
<tr><td>Other study effort:
▪ Voluntary tutorial with ELC teachers and viewing of online materials
▪ Reading reference materials and preparation of presentation
▪ Writing course paper</td><td>
1 hours
30 hours
35 hours</td></tr>
<tr><td>Total study effort:</td><td>105 hours</td></tr>
<tr><td>Reading List and References</td><td colspan="2">Required reading

1. Intergovernmental Panel on Climate Change (IPCC) (2013) Fifth Assessment Report, Summary for Policymakers.
www.climatechange2013.org/images/uploads/WGI_AR5_SPM_brochure.pdf

(32 pages)

2. Meadows DH (2004) Limits to Growth: the 30-year Update. Chelsea Green Publishing, White River Junction, VT, USA. ISBN 1-931498-58-X. Chapters 7, 8 and Appendices 1 and 2. (50 pages)
3. Wilson EO (2002) The Future of Life. Vintage Books, New York, USA. ISBN 978-0679768111. Chapters 1 and 7. (50 pages)

Recommended reading

1. Food, Inc. (Documentary), directed by Robert Kenner, distributed by Magnolia Pictures, USA.
2. The Day After Tomorrow (Film), directed by Roland Emmerich, distributed by 20th Century Fox, USA.
3. Blue Gold: World Water Wars (Documentary), directed by Sam Bozzo, distributed by Public Broadcast Service, USA.
4. An Inconvenient Truth (Documentary), directed by Davis Guggenheim, distributed by Paramount Classiscs, USA.
5. Jared Diamond (2005) Collapse, How Societies Choose to Fail or Succeed, Viking Press, New York, NY, USA. ISBN 978-0143117001. Chapters 14-15.
6. Charles Fishman (2011) The Big Thirst: The Secret Life and Turbulent Future of Water, Free Press, New York, NY, USA. ISBN 978-1-4391-0207-7. Chapter 10.
7. Paul Hawken, Amory Lovins, Hunter Lovins (2010) Natural Capitalism: the Next Industrial Revolution (Revised edition), Earthscan, New York, NY, USA. ISBN 978-0-316-35316-8. Chapters 6 and 13.
8. Tristram Stuart (2009) Waste: Uncovering the Global Food Scandal, W.W. Norton & Company Inc, New York, NY, USA. ISBN 978-0-393-</td></tr>
</table>

	06836-8. Chapters 6 and 17. 9. Spellberg B (2009) Rising Plague: the global threat from deadly bacteria and our dwindling arsenal to fight them. Prometheus Books, Amherst, NY, USA. ISBN 978-1-59102-750-8. Chapters 2 and 9. 10. A History of infectious diseases and the Microbial. Praeger Publisher Inc. ISBN 9780275995041. **Additional 2-3 topical references from peer-reviewed literature will be provided for students after each lecture or during tutorial.**