SYLLABUS:

Sustainable Development

Course name: Sustainable Development / Sustainability
Course index: ENVI502
Number of credits: 6 ECTS/3 MCTS
Period: Fall/Spring semester

Host institution	National University of Mongolia, School of Engineering and Applied Sciences
Lecturers	Ph.D. N. Oyunchimeg, Ph.D. Davaadorj
Level	BSc, MSc course
Course type	Major course
Course duration	16 weeks
New/Revised	A newly developed
E-course link	https://online.num.edu.mn/courses/course-v1:NUM+ENVI502+2022_T1/about

Summary

This course introduces the introduces the origin and key concepts of sustainability. It will explore the concepts, applications, and tools for analysis and decision making in support of environmentally sustainable, socially responsible, and economically prosperous development. It consists of 16 videos of lectures, 8 videos for seminars and supplementary study materials that use in classes. The following contents are included in the lecture: concept of the sustainable development, sustainability for ecology and biodiversity, sustainable development goals and Mongolian policy for SDG and climate change impact on economic and social, other supporting socio-economic impacts for sustainable development issues. the seminar classes area focusing to analyze theoretical and practical issues based on case studies. In particular, it aims to introduce students to international events, Mongolian economic and political perspectives and research trends.

Target student audiences and Prerequisites

~ Bachelor students who are majoring in environmental science, environmental management.
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Prerequisites

Pre-required courses:

1. Environmental science ENVI200

Parallel course (only suggestion):

1. Green development policy and strategy ENVI618

Aims and objectives

The main goal of this course is to provide policies for sustainable development at the international level, to observe and evaluate the progress of the global development of the strategy and the environment. It is to train a national expert with knowledge and high communication skills to optimally use the global multilateral cooperation mechanism in the field of MU to ensure sustainable development and green development strategy. Interdisciplinary research methods will be introduced in the context of international relations and inter-state conflict, sustainable development.

COURSE CONTENT

This subject is contained to compare the historical events of XX and XXI with global cooperation. The development strategies are different, based on the similar goal, values, concepts, and development models are becoming more and more aligned through globalization and cooperation. Climate change,

global warming, air pollution, international marine and space resources will be considered in connection with the common desire to share. It will compare the implementation of policies and international cooperation projects and programs to identify and implement the environmental problems in Mongolia within the framework of the 17 Sustainable Development Goals

The authentic tasks

The actual tasks are:

- ~ Read the given materials and answer the key questions to reinforce their understanding of the topic covered in the lectures.
- ~ Independently complete the tasks of the seminar and to complete the homework
- ~ To develop holistic interdisciplinary understanding of sustainability problems and solutions

General learning outcomes:

By the end of the course, successful students will:

Knowledge	~ Examine critically the 17 newly minted UN Sustainable Development Goals ~ Understand the historical evolution, key theories, and concepts of sustainable development. ~ Articulate the major issues affecting sustainable development and how sustainable development can be achieved in practice.
Comprehensive	~ Explore the challenges the society faces in making transition to renewable resource use. ~ Discover the science, technology, economics, and politics underlying the concepts of sustainability. ~ Understand the implications of overuse of resources, population growth and economic growth and sustainability.
Application	~ Apply critical thinking skills to evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources. ~ Identify and apply methods for assessing the achievement of sustainable development
Analysis	~ Analyze arguments, similarities, and disagreements in the sustainability debate.
Synthesis	~ Communicate effectively in both oral and written forms, applying appropriate thetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.) ~ Develop skills that will enable students to understand attitudes on individuals, society and their role regarding causes and solutions in the field of sustainable development.

Overview of sessions and teaching methods

The course will make most of interactive and self-reflective methods of teaching and learning and, where possible, avoid standing lectures and presentations.

Learning methods	~ Video presentations ~ Interviews, surveys, fieldtrip, group work, written articles/essay ~ Project Based Learning ~ Literature review ~ Case studies

- ~ Understand the practice and policy of sustainable pathways to development.
- ~ Appreciate some of the scientific underpinnings of sustainability practice and how policy makers are trying to apply it for better governance of scarce resources.
- ~ Apply relevant aspects of the science and policies of sustainable development to your own practice as a development leader.

- ~ Understand how various attributes of sustainability (environmental, economic and social) can be applied by development leaders.
- ~ Gain additional scientific knowledge regarding planetary boundaries and their influence on international economic development.
- ~ Be aware of the current international policy landscape for the Sustainable Development Goals

Course workload

The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Workload (hours)
In-class activities			
Lectures	Understanding theories, concepts, methodology and tools	Class participation	36
Moderated in-class discussions	Understanding various policy and management contexts and common problems in communication in environmental governance	Class participation and preparedness for discussions	4
In-class assignments, field assignment	Understanding various policy and management contexts and common problems in communication in environmental governance	Class participation and preparedness for assignments	3
Reading and discussion of assigned papers for seminars and preparation for lectures	Familiarity with and ability to critically and creatively discuss key concepts, tools and methods as presented in the literature	Class participation, creative and active contribution to discussion	3
Group presentation	Ability to interpret data, to analyze audience, and to use the concepts, tools, and methods for communicating the EDP	Quality of group assignments and individual presentations	4
Independent work			
Group work: - Contribution to the group case-study projects - Contribution to the preparation and delivery of individual presentation - Contribution to the web-application	Ability to interpret data, to analyze audience, and to use the concepts, tools, and methods for communicating information to all participants Plan and develop a energy development plan (EDP), be aware of information visualization tools and methods	Quality of group assignments and individual presentations	40
Course group assignment	Ability to conceptualize and frame an environmental governance problem, find related literature and data, interpret data, use the concepts, tools and methods covered in the course, and draw policy/management relevant conclusions	Quality of developed EDP and their presentation	30
Group presentation	Ability to interpret data, to analyze audience, and to use the concepts, tools, and methods for communicating the EDP	Quality of group assignments and individual presentations	30
Total			**150**

Grading

The students' performance will be based on the following:

Assessment	Progress assessment (40%): ~ Exercise (20%): students have to complete the quiz or exercise of each topic. ~ Homework (20%): 1. Environmental data and indicators of EDP (10%), one essay for selected paper reading (10%). Final assessment (30%): ~ Group report (30%): The students will be divided into groups of 4-5 students and choose 1 topic among 6 topics and complete the group project report according to the specific requirements of each topic. Final examination (30%)				
Evaluation EU system	A (8,5 – 10) B (7,0 – 8,4) C (5,5 - 6,9) D (4,0 – 5,4)	Evaluation MN system	95-100 90-94 85-89 80-84 75-79 70-74 65-69 60-64 0-59	A A- B B- C C- D D- F	4.0 3.6 3.1 2.7 2.3 1.9 1.4 1.0 0.0

Course schedule

Week	In-class hours	Topics	Type
1	2	The concept of sustainable development: Origin and development of ideas and concepts of sustainable development and trends	Lecture
	2	What is sustainable development? Re-thinking the development in 21th century. Jennifer A. Elliot (2013) "An Introduction of Sustainable Development", 4th edition. 8-55 pp	Seminar
2	2	Sustainable development: Sustainable consumption and sustainable Production	Lecture
	2	Question of population, resource demand and consumption. Poverty and the environment. Jennifer A. Elliot (2013) "An Introduction of Sustainable Development", 4th edition. 77-103 pp	Seminar
3	2	Sustainable development and ecological footprint	Lecture
	2	The importance of sustainable consumption in the implementation of the SDGs. Use the following site to calculate your ecological footprint and prepare a presentation. Your presentation will highlight how your lifestyle and consumption impacts your ecological footprint. https://www.footprintnetwork.org/	Seminar
4	2	Environmental goals of sustainable development	Lecture
	2	Sustainable development and nature conservation.	Seminar
5	2	Basic understanding of environment	Lecture
	2	The noosphere – the challenge of the Anthropocene	Seminar
6	2	Biodiversity	Lecture
	2	Climate change impact	Seminar
7	2	The food supply and environmental quality	Lecture
	2	Environment pollution issues	Seminar
8	2	UN SDGs and Mongolia's SDG policy	Lecture
	2	Sustainability outlook of Mongolia (2018). Page 25, table 1 (Dashboard of SDG targets: How far will Mongolia be from achieving the SDGs) is explained.	Seminar

9	2	Resources to meet the Sustainable Development Goals: Mongolia	Lecture
	2	Jennifer A. Elliot (2013) "An Introduction to Sustainable Development", 4th edition. Read pages 57-76 and make a comparison with Mongolia.	Seminar
10	2	Environmental Policy and Green Development Strategy in Mongolia	Lecture
	2	Jennifer A. Elliot (2013) "An Introduction to Sustainable Development", 4th edition. Read pages 57-76 and make a comparison with Mongolia.	Seminar
11	2	Climate change impact on economy and social	Lecture
	2	Demographic Issues for development	Seminar
12	2	A modeling of sustainable environmental development	Lecture
	2	Urbanization and Megacities	Seminar
13	2	International environmental organizations	Lecture
	2	Blue economy for marine and space economy	Seminar
14	2	International environmental legalization	Lecture
	2	Economic support and international cooperation	Seminar
15	2	Education for sustainable development	Lecture
	2	Education for sustainable development	Seminar
16	2	Future of the sustainable development	Lecture
	2	Vision 2030-2050	Seminar
Lecture 32 Seminar 32			

Course assignments/tests

Students will design the individual research project that addresses to the sustainable development challenges, which are involving in the green development strategy. The focus of the research project can be any topic that will promote sustainable practices.

Literature

Compulsory:

1. Jennifer A. Elliot (2013) "An Introduction to Sustainable Development", 4th edition.
2. Jennifer Elliott, 2013. An introduction to Sustainable Development". Routledge.
3. Pamela Matson, William C. Clark, Krister Anderson, 2016. Pursuing Sustainability. A Guide to the Science and Practice.
4. Margaret Robertson, 2021. Sustainability Principles and Practice.

Recommended:

1. Parlament of Mongolia. Resolution No. 52 of 2020, "Vision-2050" Mongolia's long-term development policy.
2. Mongolian Government. Resolution No. 209 of 2018, "National Program for Sustainable Development Education"
3. John Blewitt (2018) "Understanding Sustainable Development", Third edition. Abingdon, Oxon; New York
4. https://sdg-action.org/