SYLLABUS:

Nature conservation and special protected area management

Course name: Nature conservation and special protected area management
Course index: ENVI802
Number of credits: 3 ECTS/6 MCTS
Period: Fall/Spring semester

Host institution	National University of Mongolia, School of Engineering and Applied Sciences
Lecturer	Associate professor Namsrai Oyunchimeg
Level	Ph.D. course
Course type	Major compulsory course
Course duration	12 weeks
New/Revised	Revised course. The previous course was developed in 2015
E-course link	https://online.num.edu.mn/courses/course-v1:NUM+ENVI802+2022/course/
Language	Available in Mongolian language only

Summary

In addition to introducing the basic concepts of nature conservation and the main tools of nature conservation, this course will explore in depth the management of special protected areas, a classic method of nature conservation. It consists of 12 video lecturers, 12 video seminars, and supplementary study materials that use in the seminar classes. The following contents are included in the lecture: the basic concepts of nature conservation, the relationship between humankind and nature, ecological crises and their causes, human needs and their ecological impact, the theoretical and methodological basis of nature conservation, natural resources and their use, Special protected area and its management issues, urbanization and waste management, sustainable development and adaptation to the climate change. During the seminar, students will get to know the concepts learned in the lecture more deeply, while studying the reality of the topic in the Mongolian case, they will conduct practical exercises, evaluate the management effectiveness of special protected areas and develop a management plan using the tools of the European Union (EU).

Target student audiences

- Ph.D. students who are majoring in environmental science, nature conservation and protected areas management.
- Open for lifelong learners who are interested in nature conservation and special protected area.

Prerequisites

Pre-required courses:

1. Environmental science ENVI200
2. Sustainable development and green development policy ENVI312

Parallel courses (suggestion):

3. Strategy and policy of green development ENVI618

Aims and objectives

This course examines traditional and modern methods of environmental protection, human-caused environmental problems, and human actions for conservation/rehabilitation, including science, politics, business, the role of people, and sustainable development. It aims to provide students with a broad understanding of development issues and gives them extensive knowledge on environmental

issues facing humanity, such as global climate change, from the perspective of ecological science and nature conservation.

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.
~ Install MIRADI software and download the management effectiveness tracking tool (METT) for the seminar classes
~ Independently complete the tasks of the seminar and learn to use the methods and tools of nature conservation and nature conservation planning.

General learning outcomes:

By the end of the course, successful students will:

Knowledge	~ basic laws in the "man-nature" system ~ the meaning of modern problems of interaction between society and nature ~ classification of natural resources, features of their use, consequences of overspending, and irrational use of natural resources ~ finding and labeling data ~ selecting appropriate resources
Comprehensive	~ working in team ~ making analysis ~ practical learning ~ self-learning ~ identifying the problems ~ summarizing and stating the main ideas
Application	~ solving the problems ~ developing a management plan for nature conservation ~ evaluating threats to biodiversity ~ practical application ~ interviewing people
Analysis	~ analyzing human, market and scientific positions and rationales in nature conservation practices and environmental management ~ open-source data analysis ~ test for the accuracy of information
Synthesis	~ critically approach the current practice and basic theoretical concepts of nature conservation ~ compiling information together in a different way by proposing alternative solutions

Overview of sessions and teaching methods

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

Learning methods	~ Video presentations ~ Interviews, surveys, group work, written articles/essay ~ Project Based Learning ~ Literature review ~ Stakeholder analysis/client consultancy
Course outline	Week 1: Introduction: Basic concepts and goals of nature conservation Week 2: Mankind and the environment they create. Human-nature relationship.

Week 3: The biosphere is a human habitat. The theoretical and methodological basis of nature conservation
Week 4: Natural resources are an important object of nature use. Appropriate use of natural resources
Week 5: Basic tools and incentives for nature conservation Natural resources are an important object of nature use
Week 6: Impact of economic activities on the environment. Atmosphere, air quality and its protection
Week 7: Use of water and land resources and their protection.
Week 8: Use of mineral resources and their protection
Week 9: Use and protection of forest and biological resources. Special protected areas as an effective way for nature protection
Week 10: Special protected area management
Week 11: Urbanization and infrastructure. Waste management
Week 12: Sustainable development and nature conservation. Adaptation to climate change

Course workload

The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Workload (hours)
In-class activities – 40 hours			
Lectures	Understanding theories, concepts, methodology and tools	Class participation	26
Moderated in-class discussions	Understanding the possibilities and ways of reducing the use of natural resources and their negative impact on the environment	Class participation and preparedness for discussions	3
In-class assignments, homework assignments	Understanding the possibilities and ways of reducing the use of natural resources and their negative impact on the environment	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 the discussion	4
Examination	Measure students knowledge and understanding at the end of a course	Individual assessment	4
Independent work – 110 hours			
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, analyze audience, and use the concepts, tools, and methods for communicating information to all participants Development of NCP and being aware of information visualization tools and methods	Quality of group assignments and individual presentations	8
Assignment	Ability to conceptualize and frame a nature conservation 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 NCP and their presentation	15
Group presentation	Ability to interpret data, analyze audience, and use the concepts, tools, and methods for communicating the NCP	Quality of group assignments and individual presentations	10

Management plan development	Ability to analyze data, develop nature conservation management plans, to apply theoretical knowledge to the practice	Adequacy of a management plan	20
Exam preparation	Measure students' knowledge and understanding at the end of a course	Individual assessment	7
E-learning	Ability to learn individually	Answers to key questions	50
Total			**150**

Grading

The student's performance will be based on the following:

Assessment

Progress assessment (25%):

~ Attendance and academic activity (10%)
~ Progress test (15%)

Final assessment (55%):

~ Homework and teamwork report (55%): After each lecture, students will complete tasks such as reading a book chapter and writing a review, writing a paper review on academic articles, conducting a discussion on the given topic, developing a management plan for a specific area using the methodology of special protected area management planning.

Final examination (20%)

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	A	4.0
90-94	A-	3.6
85-89	B	3.1
80-84	B-	2.7
75-79	C	2.3
70-74	C-	1.9
65-69	D	1.4
60-64	D-	1.0
0-59	F	0.0

Course schedule

Week	In-class hours	Topic	Type
1	2	~ Basic concepts and goals of nature conservation. Mankind and the environment they create. Human-nature relationship. Ecological crises in human history	Lecture
	2	~ Nature conservation tradition of Mongolians. Man-made environment. Human needs and their types	Seminar
2	2	~ The biosphere is a human habitat. The theoretical and methodological basis of nature conservation	Lecture
	2	~ Ecosystem services	Seminar
3	2	~ Natural resources are an important object of nature use. Appropriate use of natural resources.	Lecture
	2	~ Current conditions and future trends of natural resource utilization in Mongolia.	Seminar
4	2	~ Basic methods and tools of nature conservation	Lecture
	2		Seminar
5	2	~ Impact of economic activities on the environment. Atmosphere, air quality and its protection	Lecture
	2		Seminar

6	2	~	Use of mineral resources and their protection	Lecture
	2	~	The natural resource curse. Adverse effects of illegal mining. Mongolia's mining industry	Seminar
7	2	~	Use of water and land resources and their protection	Lecture
	2	~	Management of water resources	Seminar
8	2	~	Use and protection of forest and biological resources. Special protected areas as an effective way for nature protection. Network of special protected areas of Mongolia	Lecture
	2			Seminar
9	2	~	Special protected area management-1: Planning	Lecture
	2	~	Installation of MIRADI programm and preparation for developing of PA's management plan	Seminar
10	2	~	Special protected area management-2: Management effectiveness evaluation	Lecture
	2	~	Practical work on developing a management plan for protected areas	Seminar
11	2	~	Urbanization and infrastructure. Waste management	Lecture
	2			Seminar
12	2	~	Sustainable development and nature conservation. Adaptation to climate change	Lecture
	2			Seminar

Course assignments/tests

Course assignments will constitute of questions, teamwork, reading, writing scientific paper reflection, presentations, etc.,

Supplementary materials

The following study materials will be used for the course.

~ MIRADI software
~ Management effectiveness tracking tool (METT)

Literature

Compulsory:

1. Daniel. D and et al, (2014) "Natural Resource Conservation: Management for a Sustainable Future", 10th edition, Pearson New International, USA, pages 663, ISBN 13: 978-1-292-04098-1, in Mongolian
2. Titova V. I and Dabakhova E. V, (2003) ""Environmental conservation", Textbook, Publishing House of the Volga-Vyatka Academy of Civil Service, Nijny Novgorod," ISBN: 5-85152-344-1, pages 213, ISBN 5-85152-344-1, in Russian.

Recommended:

3. H. Monkhbayar and M. Monkhbaatar, (2006) "Simplified Ecology", Admon Press, pages 154, ISBN:9789992907657 0.00, in Mongolian
4. Ministry of Environment and Tourism of Mongolia, (2019) "Report on the state of the environment in Mongolia", editors Enkhbat. A, Tsogtsaikhan. P and Nyamdavaa. G, Ulaanbaatar, pages 186, in Mongolian