**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://studio.online.num.edu.mn/course/course-v1:NUM+ENVI802+2022> |
| 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):

1. 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 | 1. Introduction: Basic concepts and goals of nature conservation 2. Mankind and the environment they create. Human-nature relationship. 3. The biosphere is a human habitat. The theoretical and methodological   basis of nature conservation   1. Natural resources are an important object of nature use. Appropriate use   of natural resources   1. Basic tools and incentives for nature conservation Natural resources are   an important object of nature use   1. Impact of economic activities on the environment. Atmosphere, air   quality and its protection   1. Use of water and land resources and their protection. 2. Use of mineral resources and their protection 3. Use and protection of forest and biological resources. Special protected   areas as an effective way for nature protection   1. Special protected area management 2. Urbanization and infrastructure. Waste management 3. 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 (40%):   * Attendance and academic activity (20%) * Progress test (20%)   Final assessment (30%):   * Homework and teamwork report (30%): The students will be divided into groups of 4-5 students and choose 1 topic from the given 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

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| --- | --- | --- | --- |
| 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 tools and incentives for 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 | Seminar |
| 7 | 2 | * Use of water and land resources and their protection | Lecture |
| 2 | * Management of water resources and land use in PA | 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 | * Legal environment and planning of PA | Seminar |
| 10 | 2 | * Special protected area management-2: Management effectiveness evaluation | Lecture |
| 2 | * Methodology for evaluation of PA management efficiency | 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:**

1. H. Monkhbayar and M. Monkhbaatar, (2006) "Simplified Ecology", Admon Press, pages 154, ISBN:9789992907657 0.00, in Mongolian
2. 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