Syllabus / ENV-202

Introduction to Environmental Management System

Spring semester 2022

Lecturer: Mairambek Nurgaziev, Associate Professor (PhD)

Email: nurgaziev_m@auca.kg

Lectures / Seminars: 9:25 - 10:40 on Tuesday / 9:25 - 10:40 on Thursday

CONTACT WITH THE INSTRUCTOR:

Students should feel free to keep in touch with me. There are no formal office hours, but I will be available on request, either immediately after the class, or by appointment via the email. There will be several days in the semester during which we will have no classes. I will be available for consultation during these times, unless otherwise specified.

Description of the course:

The history of Environmental Management System, Environmental Management System as a basis for preventive action: the contents of the Standard EN ISO 14001 and EMAS. The introduction and implementation of ISO 14001. Principle of Environmental Management System of ISO14001. Development and setting of environmental policy, environmental management system planning, implementation and operation, checking, management review including management audit etc. Environmental legislation relevant for Environmental Management System. Certification; examples from companies and organizations. Other management systems, e.g., Energy management system. Literature seminars are aimed at a critical analysis of Environmental Management System. Instruction consists of lectures, seminars and exercises.

Course objective:

The general objective of the course is that the students should acquire deeper knowledge about Environmental Management System (EMS), get practice in introducing Environmental Management System, be stimulated to discuss and reflect on the possibilities and limitations of Environmental Management System, and train their critical thinking and writing abilities.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- Be able to describe the aim, development, scope and methods of the Environmental Management System standards ISO14001 and EMAS, and how they are interpreted;
- Be able to describe and discuss prerequisites of and forms for the implementation of ISO 14001 in companies and organizations;
- propose how an environmental management system can be implemented in a given organization;
- explain basic concepts and terminology of project management and how projects are planned and implemented;
- briefly describe how an environmental audit is conducted.

Competences and skills
For a passing grade the student must

- Show ability to independently structure and build up an Environmental Management System, through the preparation of an environmental handbook.
- Show ability to participate in the introduction, operation and internal audit of ISO 14001.
- Be able to critically evaluate methods and possibilities within Environmental Management System from a systems perspective.

Judgment and approach
For a passing grade the student must

- Be able to critically evaluate the possibilities and limitations of Environmental Management System as a tool for sustainable development.

Evaluation and Assessment: The students' performance is assessed on the basis of their participation during the lectures, including the familiarity with the reading material, note-taking, making assignments, oral presentations and written exams. Students are expected to pass all the above in order to obtain a credit for the semester.

Examination: The students will take two exams: the first one is a mid-term test and the second one is an essay-type examination. The test consists of questions on short definitions and multiple-choice questions. Exam papers are composed of essay type questions, which require in-depth answers on the topics studied. No books, papers etc. can be used during the exam. Exam questions are compiled from the questions discussed during the lectures. Evidence of using additional sources of information related to the course content will be marked in the form of additional points for examination paper.

Grading:

Final grades will be based on the following scale:

Assignment Points

Mid-term test and final examination	20 and 30, **total 50** (maximum)
1 presentation and one home or class assignment	10 (maximum for each), **total 30**
Active participation, note-taking	**5** each 2
Bonus for attending classes	**10**

Withdrawal of grades in case of poor attendance without reason

Minus 5 for each failure to attend

A 100-95	**B-** 76-71	**D+** 47-42
A- 94-89	**C+** 70-60	**D** 41-36
B+ 88-83	**C** 59-54	**D-** 35-30
B 82-77	**C-** 53-48	**F** < 30

If you are near the borderline between two grades (generally within 1.5 percentage points), your level of participation in the class will be used to determine if you receive the higher or lower grade.

Online course tools: In a force majeure situation, the course can be conducted mainly using the Zoom program, if necessary, additional tools such as Webex, Whatsapp and Skype will be used.

Course materials: No text required. Most course information will be available on-line at the e-course website.

References

1) ISO 14000 Environmental Management Standards: Engineering and Financial Aspects (2204) Alan S. Morris ISBN: 978-0-470-09077-0;

2) ISO 14001 Environmental Certification Step by Step (2004). Revised first edition, A.J. Edwards. Elsevier Butterworth-Heinemann Linacre House, Jordan Hill, Oxford OX2 8DP 200 Wheeler Road, Burlington MA 01803.

2022 Lecture Schedule (tentative)

1) Introduction to Environmental Management System (definition, aim);
2) Basics of Environmental Management System;
3) Overview of Environmental Standards;
4) Environmental Management Systems (approach, models);
5) Legal and other environmental requirements (key elements, policy);
6) Environmental Aspects and Impacts;
7) Document, Control, Examination Training Matrix;

   Midterm exam
8) ISO_14001- 2005_Environment Management System (EMS);
9) Checking, Corrective Action;
10) Environmental legislation relevant for Environmental Management Systems;
11) Certification; examples from companies and organizations;
12) Energy management systems;
13) EMS in mining sector of economy;
14) EMS in Waste Management.

    Final exam