Study program: Ecological Engineering

Course title: Protection Against Noise and Vibrations

Professor/assistant: Grubiša Miodrag

Type of course: Elective

ECTS credits: 7

Prerequisites: none

Aims of the course:

Students acquire expert knowledge in the field of operation and protection of living and working environment from the impact of noise and vibration, industrial noise and vibration and noise and vibration caused by traffic.

Learning outcomes:

After completing the course, the student will be trained to actively participate in programs of living and working environmental protection from harmful effects of noise and vibrations.

Syllabus:

Theoretical part:

1. Noise and vibrations as a consequence of development (causes, occurrence, quality and phenomena of vibration and noise; the effects of noise and vibration and current tasks.
2. System quality and environmental management (new concepts, quality of life, state of protection and development of standards for environmental management)
3. Vibration and noise characteristics (movement and transmission of noise and vibration, sound and noise and their permissible levels)
4. The analysis of options for noise protection.
5. Industrial noise, noise in the working environment and noise control methods.
6. Design, implementation and verification of the noise and vibration protection system.
7. Roadway noise, motor vehicles noise and effects of motor vehicle noise on man.
8. Sources of the automotive noise (engine noise, suction, blow out noise, cooling …)
9. Noise reduction possibilities (the use of vibration-absorbent materials, absorbent, damping and insulating)
10. Measurement of the outside noise levels according to the UN/ECE 51.02 Regulation
11. Possibilities for reducing the harmful impact of industrial noise and traffic noise on the working and living environment.

Practical part:

Auditory exercises

Literature:

1. M. Praščević, Buka u životnoj sredini Fakultet zaštite na radu, Niš ,2005.
2. R. Uzunović, Zaštita od buke i vibracije, Lola institut, Beograd 1997.
3. Milošević,S., Čovek i saobraćajna buka, Saobraćajni fakultet Beograd,2005.
4. Stručni radovi iz oblasti buke i vibracije.

Total number of active classes: 6	**Lectures:** 3	**Practical classes:** 3

Teaching methods:

Lectures, video presentations, writing term paper, consultations

Grading system (maximum 100 points)

grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51- 60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91- 100 points.

Pre-exam obligations:	**Points:**	**Final exam:**	**Points:**
Activity during lectures	5	Written exam	50
Practical training	5		
Written tests	20		
Term papers	20		
Minimum requirement for the final exam	30		