**Environmental, Health, Safety and Ergonomy**

Code: MK3EHSAK04RX17-EN

ECTS Credit Points: 4

Evaluation: exam

Year, Semester: 2nd year, 2nd semester

Its prerequisite(s): -

Further courses are built on it: Yes/No

Number of teaching hours/week (lecture + practice): 2+2

**Topics**:

The subject covers three main topics:

Environment (E): In connection with environment protection the most important topics are introduced to the students. The subject includes air quality, noise protection, water protection, soil protection, and waste management side topics.

Health (H): Basics of labor and health are discussed. The impact of work on health and the health impact on working ability is also a side topic. The fundamentals of occupational health and work hygiene are also involved.

Safety (S): It involves the basics of labor safety and fire protection. The lectures discuss the personal, material and organizational requirements for safe work, ergonomic fundamentals, personal protective equipment, work safety reviews, employer checks, and workplace risk assessment. Industrial safety and security is also a side topic.

The lectures introduce the most important aspects and the practices focus on examples and plant visits.

**Literature:**

*Recommended:*

* Gilbert M. Masters, Wendell P. Ela: Introduction to Environmental Engineering and Science, Pearson New International Edition, 3/E, Pearson, 2013, ISBN: 9781292025759
* David L. Goetsch, Occupational Safety and Health for Technologists, Engineers, and Managers, 8th Edition, Pearson, 2015, ISBN: 9780133484175
* Richard T. Wright, Environmental Science, Pearson, 2017, ISBN: 9780134011271

**Schedule**

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| **1st week Registration week** | |
| **2nd week: Basics of Environmental Protection and Environmental Management**  **Lecture:** Introduction to environmental protection  **Practice:** Global issues on environmental protection | **3rd week: Air Quality Control**  **Lecture:** Basics of air pollution control, processes in the atmosphere, greenhouse gases, ozone layer, smog, acid rain  **Practice:** Exercises in connection with air pollution |
| **4th week: Environmental Noise**  **Lecture:** The basics of environmental noise  **Practice:** Noise measuring devices and techniques | **5th week: Water Protection**  **Lecture:** Water protection and quality, pollutants  **Practice:** Practice in connection with water protection (plant visit: wastewater treatment plant) |
| **6th week: Soil Protection**  **Lecture:** Protection of soil quality  **Practice:** Practice in connection with soil protection | **7th week: Waste Management**  **Lecture:** Waste management, possibilities, disposal, techniques and hazardous waste  **Practice:** Practice in connection with waste management (plant visit) |
| **8th week: 1st drawing week** |  |
| **9th week: Basics of labor safety and fire protection**  **Lecture:** Personal, material and organizational requirements for safe work, ergonomic fundamentals  **Practice:** Practice in connection with labor safety I. (plant visit) | **10th week: Occupational Safety**  **Lecture:** Personal protective equipment, work safety reviews, employer checks, workplace risk assessment  **Practice:** Practice in connection with labor safety II. (plant visit) |
| **11th week: Labor and Health**  **Lecture:** The impact of work on health and the health impact on working ability  **Practice:** Practice in connection with occupational health I. | **12th week: Occupational Health and Work Hygiene**  **Lecture:** Fundamentals of occupational health and work hygiene  **Practice:** Practice in connection with occupational health II. |
| **13th week: Industrial Safety and Security**  **Lecture:** Main goals of industrial safety and security  **Practice:** Practice in connection with industrial safety and security | **14th week:**  **Lecture:** Mid-semester TEST  **Practice:** Mid-semester TEST |
| **15th week: 2nd drawing week** | |

**Requirements**

**A, for a signature:**

Attendance at practice classes (absence up to the permissible level)

**B, for a grade:**

Test grade (2: from 50%)