**Instrument Engineering (INEN) program, "Industrial safety and labour protection" department**

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| **Course Unit Title** | Health Safety and Environment |
| **Course Unit Code** | **VTES-B09-1** |
| **Type of Course Unit** | Compulsory |
| **Level of Course Unit** | 3rd year INEN program |
| **National Credits** | 0 |
| **Number of ECTS Credits Allocated** | 2 |
| **Theoretical (hour/week)** | 2 |
| **Practice (hour/week)** | 0 |
| **Laboratory (hour/week)** | 0 |
| **Year of Study** | 3 |
| **Semester when the course unit is delivered** | 6 |
| **Course Coordinator** | Reyhankhanim Ganiyeva |
| **Name of Lecturer (s)** | Reyhankhanim Ganiyeva |
| **Mode of Delivery** | Face to Face, Seminar. |
| **Language of Instruction** | English |
| **Prerequisites** | - |
| **Recommended Optional Program Components** | - |

**Course description:**

***HSE (HEALTH SAFETY AND ENVIRONMENT)*** is based on the methodology of studying general regularities of negative factors and their impact on people, aimed at developing methods for analysing hazards and creating human protection systems. The main direction of ***HSE*** research is the process of human-environment interaction.

**Objectives of the Course:**

'Health, Safety and Environment' - Decisions and instructions taken at any level of production in modern times should be aimed at organising the main component of an effective management system for workers' health, technical safety and environmental protection.Ensuring healthy and safe working conditions for employees is considered one of the most pressing problems in the world.In the modern era of scientific and technological progress, new technologies are emerging and the occurrence of accidents associated with the use of technology necessitates the development of measures to prevent them. Various parts of the environment and natural and man-made events occurring there have a serious impact on the vital activity of the organism, its business activity and health.

**Learning Outcomes**

| At the end of the course the student will be able to | | Assessment |
|---|---|---|
| 1 | To obtain an understanding about assess the possible risk of local hazards and emergencies, take timely measures to eliminate their consequences | 1,2,3 |
| 2 | To learn the basics of safety measures during emergency situations | 1 |

| | | |
|---|---|---|
| 3 | To learn about possess the methodology of forming psychological stability of behaviour in dangerous and emergency situations, to treat one's health and environment with care | 1,2,3 |
| 4 | To understand the organisation of emergency readiness of the population, rules and planning for emergency readiness of command and control authorities and forces | 1 |
| 5 | To gain an appreciation of methods of organising practical command post exercises and drills. Methods of organising practical facility training, facility object-frame training, integrated facility training. | 1 |
| 6 | To understand the rescue and other emergency operations at sources of damage | 1,2,3 |

Assessment Methods: 1. Final Exam, 2. Presentation, 3.Midterm exam

**Course's Contribution to Program**

| | | CL |
|---|---|---|
| 1 | Ability to solve complex issues and tasks by using the principles of mathematics, physics, chemistry and chemical engineering. | 3 |
| 2 | Ability to execute, coordinate, implement, substantiate laboratory processes while carrying out the experiments and to obtain and extract chemical compounds using standard methods and syntheses. | 3 |
| 3 | Ability to use the basics of mathematics, algorithmic principles and methods of computer engineering in the modeling, to design of chemical engineering systems, analyze and interpret data using statistical methods. | 3 |
| 4 | Ability to use the techniques, materials, skills and modern engineering tools which are used in engineering and to carry out industrial and chemical processes, control them and to apply chemical engineering principles at designing of these processes. | 4 |
| 5 | Ability to choose and use existing technologies, materials while undertaking project tasks and solving these issues in chemical engineering and ability to eliminate malfunctions that may occur in industrial and chemical processes or in laboratory equipment. | 3 |
| 6 | Ability to design systems, components, units and processes that meet the requirements, taking into account natural limitations such as economics, ecology, security and social aspects. | 4 |
| 7 | Ability to use the language skills to exchange and obtain some knowledge gained from the foreign sources. | 1 |
| 8 | Ability to analyze the problem, to identify the basic requirements, to justify the idea and critically evaluate the results and to compare them. | 3 |
| 9 | Ability to understand professional, ethical, legal and security issues and the responsibilities characteristic for engineering. | 5 |
| 10 | Ability to work productively in multidisciplinary groups, especially in projects requiring engineering skills and to carry out all work in accordance with relevant laws, regulations, standards, methods and guidelines. | 3 |

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate, 4: High, 5: Very High)

**Course Contents**

| Week | Chapter | Topics | Exam |
|---|---|---|---|
| 1 | [1] Chapter1 | Reasons for safety management at work, Terminology and concepts | |

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|---|---|---|---|
| 2 | [2] Chapter4 | Identification of hazards and risks. Hazard category | |
| 3 | [1] Chapter3 | Risk assessment and management. Risk control hierarchy | |
| 4 | [1] Chapter8 | Work permit systems. The essence of the work permit form | |
| 5 | [1] Chapter11 | Working at heights. Dismantling and demolition work. Confined space. Safe handling of work equipment | |
| 6 | [1] Chapter12 | Area transport. Lifting operations. Safety in manual transportation of goods | |
| 7 | [1] Chapter13 | Working with hazardous substances. Asbestos and safety when working with it. Microclimate parameters of the working area | |
| 8 | [1] Chapter6 | Hazards of machinery and equipment and their control. Safe working with conveyors. Safe operation of robotic equipment | |
| 9 | [2] Chapter16 | Electrical shock. Static electricity . | |
| 10 | [2] Chapter17 | Fire safety | |
| 11 | [1] Chapter7 | Noise. Vibration | |
| 12 | [1] Chapter7 | Hazards associated with the movement of people. Dangers associated with carelessness. Causes of stress in the workplace and their control | |
| 13 | [2] Chapter28 | Definitions. Purpose of accident and incident investigations. Incidents "minor" accidents. Direct, invisible and major causes of accidents. Investigation of incidents and accidents | |
| 14 | [1] Chapter13 | Fundamentals of an environment. Renewable and non-renewable energy. Environmental protection. Environmental legislation | |
| 15 | [1] Chapter 14 | History of ISO 45001. ISO45001-2018. Success factor and approaches. ISO 45001:2018. Occupational health and safety management system. | |
| 16 | | | Final |

**Recommended Sources**


1. Bülent Arpat, Mete Kaan Namal. Health and Safety at Work, Ankara, 2020.
2. Labour Code of the Republic of Azerbaijan.
3. NEBOSH, International General Certificate in Occupational Health and Safety 2019 - IG1 Division of Occupational Health and Safety.


**Assessment**

| | | |
|---|---|---|
| Attendance | 0% | At least 75% class attendance is compulsory |
| Presentation | 20% | |
| Seminars | 0% | |
| Midterm Exam | 30% | Written Exam |
| Final Exam | 50% | Written Exam |
| Total | 100% | |

**Assessment Criteria**
Final grades are determined according to the Guidelines of Azerbaijan State University of Oil and Industry for Undergraduate Studies

**Course Policies**

- Attendance of the course is mandatory.
- Late assignments will not be accepted unless an agreement is reached with the lecturer.
- Cheating and plagiarism will not be tolerated. Cheating will be penalized according to the Azerbaijan State Oil and Industrial University General Student Discipline Regulations

**ECTS allocated based on Student Workload**

| Activities | Number | Duration (hour) | Total Workload(hour) |
|---|---|---|---|
| **Course duration in class (including midterm)** | **15** | **2** | **30** |
| Presentation | 1 | 10 | 10 |
| Self-study | 15 | 4 | 56 |
| Tutorials | 15 | 1 | 14 |
| Preparation for midterm exam | 1 | 8 | 8 |
| Final Examination | 1 | 3 | 3 |
| Preparation for final exam | 1 | 18 | 18 |
| **Total Workload** | | | **151** |
| **Total Workload/30(h)** | | | **151/30** |
| **ECTS Credit of the Course** | | | **2** |