**OCCUPATIONAL HEALTH AND SAFETY (non-thesis) MSc PROGRAMME**

(AFTER 2016-2017 FALL)

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| **First Year** | | | | | | | | | | | |
| **I. Semester** | | | | | | | | | | | |
| Code | | | Course Title | ECTS | T+P | | Credit | | C/E | Language | |
| 506501601 | | | [OCCUPATIONAL SAFETY](#EN16) | 5 | 3+0+0 | | 3 | | **C** | Turkish | |
| 506501604 | [SECTORAL OCCUPATIONAL HEALTH AND SAFETY](#EN19) | | | 5 | 3+0+0 | 3 | | | **C** | Turkish |
|  | | | Elective Course-1 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-2 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-3 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Total of I. Semester | 25 |  | | 15 | |  |  | |
| **II. Semester** | | | | | | | | | | | |
| Code | | | Course Title | ECTS | T+P | | Credit | | C/E | Language | |
|  | | | Elective Course-4 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-5 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-6 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-7 | 5 | 3+0+0 | | 3 | | E | Turkish | |
|  | | | Elective Course-8 | 5 | 3+0+0 | | 3 | | E | Turkish | |
| 506502001 | | [TERM PROJECT](#EN1) | | 10 | 0+2+0 | | - | **C** | | Turkish |
|  | | | Total of II. Semester | 35 |  | | 15 | |  |  | |
|  | | | TOTAL OF FIRST YEAR | 60 |  | | 30 | |  |  | |

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| **Elective Courses** | | | | | | | | | | | | | |
| Code | Course Title | | | | ECTS | | T+P | Credit | | | C/E | | Language |
| 506501610 | [ERGONOMICS](#EN2) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501602 | | | [FIRST AID](#EN14) | 6 | | 3+0+0 | | | 3 | **C** | | Turkish | | |
| 506501558 | [HAZARDOUS MATERIALS AND WASTE MANAGEMENT](#EN12) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506502555 | [LABORATORY SAFETY](#EN10) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501603 | [LABOUR LAW](#EN7) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501608 | | [OCCUPATIONAL DISEASES](#EN17) | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501609 | [OCCUPATIONAL HEALTH AND SAFETY](#EN3)  [MANAGEMENT SYSTEMS](#EN3) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501555 | | [OCCUPATIONAL HEALTH AND SAFETY REGULATIONS](#EN15) | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506502554 | [OCCUPATIONAL HYGIENE](#EN6) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501611 | [OFFICE ERGONOMICS](#EN11) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501607 | [RISK MANAGEMENT](#EN18) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501559 | [STATISTICS](#EN4) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501556 | [THE EPIDEMIOLOGY OF OCCUPATIONAL HEALTH](#EN9) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501552 | [WORK ACCIDENT AND SAFETY](#EN8) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |
| 506501612 | [WORK PHYSIOLOGY](#EN5) | | | | 6 | | 3+0+0 | 3 | | | E | | Turkish |

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502002 | **TITLE** | Term Project |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 0 | | 2 | 0 | | | 0 | 30 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
|  | |  | | | | 2 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 20 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 30 |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | The students taking this course are expected to perform a literature search to determine the topic of his/her term project under the guidance of the advisor. The student also begins for an applied project using the theoretical knowledge gained under the supervision of the advisor. Upon completion of the project, a term report is written according to the thesis writing rules. This course is intended for the non-thesis option students. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | 1. To learn about literature search  2. Writing a report using the information obtained  3. To transform a written report into a presentation format | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | |  | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. Determining, defining and solving problems related with occupational health and safety.  2. Defining and applying methods to solve solving problems related with occupational health and safety.  3. Manufacturing system/Information management system/Service system/and related subsystem design by considering occupational health and safety.  4. Developing abilities to work individually and in a multi disciplinary groups. | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Literature review fort he project |
| 2 | Determining the problem |
| 3 | Determining possible methods to solve the problem |
| 4 | Selecting the appropriate methods |
| 5 | Modelling the problem by considering the constraints |
| 6 | Midterm Examination 1 |
| 7 | Collecting data |
| 8 | Collecting data |
| 9 | Collecting data |
| 10 | Project report assessment and presentation |
| 11 | Midterm Examination 2 |
| 12 | Assessing the results obtained |
| 13 | Assessing the application |
| 14 | Reporting the results |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Course Lectures | **Date:** | 8.7.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **INDUSTRIAL ENGINEERING (MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501503 | **TITLE** | ERGONOMICS |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | TURKISH |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 30 |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 40 |
| **PREREQUISITE(S)** | | | | | - | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Description and objectives, energy requirements, fatigue and break, times environmental factors (climate, noise, vibration, lighting), display and control elements, ergonomics layout design, check list | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The main objective of the course, is to introduce the methods to be aligned with people related to work place conditions , tools and equipment | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Workplace, tools, equipment factors and ensuring the alignment of human factors in the workplace, protection of human health and increase productivity | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. To identify problems in the workplace, develop alternative solutions in order to improve the physical conditions of the workplace..  2. To design experiments for workplace conditions (noise, heat, dust, etc.), taking measurements, analyzing the results and interpretation  3. To gain ability to effectively work in team | | | | | | | |
| **TEXTBOOK** | | | | | Babalık, F.C., 2011, Mühendisler İçin Ergonomi İşbilim, Üçüncü Baskı, Dore Yayıncılık Bursa, 585s. | | | | | | | |
| **OTHER REFERENCES** | | | | | Sabancı, A. ve Sümer, S.K., 2011, Ergonomi, İkinci Basım, Nobel Yayıncılık Ltd.Şti., Ankara, 472s. | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Course scope, execution, evaluation  definition of ergonomics, the importance of ergonomics, the classification of jobs |
| 2 | Jobs based on energy |
| 3 | Energy requirement |
| 4 | Fatigue and break times |
| 5 | The effects of environmental factors -Climate |
| 6 | Midterm Examination 1 |
| 7 | Noise and Vibration |
| 8 | Other factors (Lighting, Harmful materials etc.) |
| 9 | Display and control elements |
| 10 | Ergonomic workplace arrangements |
| 11 | Midterm Examination 2 |
| 12 | Office ergonomics |
| 13 | Special topics in ergonomics (monotony, shift working, etc.) |
| 14 | Check lists |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE INDUSTRIAL ENGINEERING MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Industrial Engineering, ability to evaluate, interpret and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through scientific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Industrial Engineering practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to industrial engineering and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 8** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 9** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 10** | To be informed of social, environmental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 11** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Associate Prof. Dr. Berna ULUTAŞ | **Date:** | 01/07/2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506401510 | **TITLE** | Occupational Health and Safety  Management Systems |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( X ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definitions related to OHS management system, Who should be included in the OHS Management system, Determination of goals, Trainings and documentation | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Giving information about OHS management system to OS craft and helping to establish TS 18001 OHS management system. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Teaching OS craft about OS management system, satisfying information increment about OS. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Systematic approach, risks associated with the organization's OHS is under control.  With the principle of continuous improvement  directs agencies to develop OHS issues.  ISO 9001 and / or ISO 14001 in an integrated system of established.  Shall ensure compliance with the current laws and regulations  Employees on occupational accidents, occupational diseases and loss of labor decreases.  Lost and reduced accident costs.  İncreases motivation in employees. Strengthen the company's image | | | | | | | |
| **TEXTBOOK** | | | | | 1.MESS ISG Yönetim Sistemleri eğitim ders notları2.TSE ISG Yönetim sistemleri eğitim ders notları3. TS 18001 | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction and history of OHS Management system |
| 2 | Definitions related to OHS management system |
| 3 | Why OHS Management System? |
| 4 | Who should be included in the OHS Management system |
| 5 | The creation of policy and risk management |
| 6 | Midterm Examination 1 |
| 7 | Stages of the OHS management system |
| 8 | Planning and implementation |
| 9 | Check it |
| 10 | Prevention |
| 11 | Midterm Examination 2 |
| 12 | Determination of goals, Trainings and documentation |
| 13 | Emergencies in the planning and control of the field |
| 14 | Certification |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Assoc.Prof.Dr.Seyhan ONDER | **Date:** | 13.05.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506401509 | **TITLE** | Statistics |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | - | - | | | 3 | 7.5 | COMPULSORY  (   ) | | ELECTIVE  ( X ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| 2 | | 1 | | | |  | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 2 | | 50 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 15 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 35 |
| **PREREQUISITE(S)** | | | | | --- | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definition of probability and basic terms, Random variables and probability functions, some discrete and continuous distributions, definitions osf statistics and basic terms, descriptive statistics, data analysis, sampling and sampling distributions, confidence intervals, tests of hypotheses, one way analysis of variance, linear regression and correlation analysis. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The basic aim of the course is to introduce the basics of probability and statistics, probability distributions, statistical methods and their applications. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | The student will be able to use probability and statistics knowledge and techniques in the professional studies. In this context, the student will ;  1. Learn the basics of probability,  2. Learn and be able to apply some important discrete and continuous probability distributions  3. Learn basics of statistics,  4.Be able to gather data and analyze them,  5.Learn sampling and sampling distributions,  6.Infer about the population from where the data were gathered,  7. Learn and apply the testing of hypotheses procedure,  8. Learn Analysis of Variance and multiple comparisons,Learn and apply 9. 9. Linear Regression and Correlation Analysis | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Knowledge related to the basics of probablity and statistics, able to apply important probability distributions and statistical methods in professional studies. | | | | | | | |
| **TEXTBOOK** | | | | | ÇİL, Burhan (2008) , İSTATİSTİK, Detay Yayıncılık. | | | | | | | |
| **OTHER REFERENCES** | | | | | ÖZDAMAR, K. (2011) : PASW ile Biyoistatistik; Kaan Kitabevi, EskişehirDEVORE, J. L. (2004): Probability and Statistics for Engineering and the Sciences, Thomson;•BELLE, Gerald van [et al.] (2004): Biostatistics : a methodology for the health sciences; / 2.Basım, J. Wiley, NJLE, Chap T., (2003): Introductory Biostatistics;Wiley Interscience, NJ•ER, F., PEKER, K. Ö., (H. Sönmez, ed.) (2009) Biyoistatistik / , Anadolu Üniversitesi Yayınları No: 1932, Eskşişehir•KOCAÇALIŞKAN, İ., BİNGÖL, N. A. (2008) :Biyoistatistik; Nobel Yayın Dağıtım Tic. Ltd. Şti, Ankara | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Basics of probability |
| 2 | Random variables, probability and probability density functions |
| 3 | Distribution functions and Expexted value |
| 4 | Some important discrete distributions |
| 5 | Some important continuous distributions |
| 6 | Midterm Examination 1 |
| 7 | Basics of statistisc |
| 8 | Descriptive statistics |
| 9 | Sampling Distributions and Confidence intervals |
| 10 | Basics of tests of hypotheses |
| 11 | Midterm Examination 2 |
| 12 | Single sample hypothesis tests |
| 13 | Double sample hypothesis tests |
| 14 | Linear Regresion and Correlation |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Prof. Dr. Nimetullah BURNAK | **Date:** | 30/06/2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502506 | **TITLE** | WORK PHYSIOLOGY |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( x ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| 1 | |  | | | | 2 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 60 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | This course examines the study of human physiological responses and adaptations to acute and chronic exercise or work, with particular focus on cardio-respiratory, cellular, and metabolic adaptations. We cover how the body accommodates the increased demands associated with exercise or work, the mechanisms and consequences of adaptation to repeated bouts of exercise or work training, how the body's responses to exercise or work require a coordinated integration of physiological systems, the effects of environmental factors on the physiological responses to exercise or work, and how to assess the physical demands of exercise or work. Using interactive teachings in a series of lectures enriched visual and written documents and -provoking group discussions, students of this course come away with a strong understanding of human body functions to exercise or work , | | | | | | | |
| **COURSE OBJECTIVES** | | | | | By the end of the course, students will be able to Discuss topics in human factors relating to human physiology in work environments. A broad and foundational look at the function and adaptation of the systems of the human body in response to exercise. or work. To develop an understanding of the structure and function of the human body. Homeostasis, body fluid compartments and transport mechanisms, muscular physiology, cardiovascular physiology, respiratory physiology, neurological system and mechanisms of physiological control will also be covered. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Study of worker's physiological responses (cardiovascular, pulmonary, muscular) to work applicable to task design and evaluation, employee selection and placement, and work-rest scheduling. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Overview of the human body systems and evaluation of the physiological response of the human body to occupational activities with emphasis on task design.so that human capabilities are maximized, physical stress is minimized, and workload is optimized. | | | | | | | |
| **TEXTBOOK** | | | | | 1.Guyton AC. and Hall JE. Textbook of Medical Physiology.2.Ganong WF. Review of Medical Physiology.3.Tortora G and Grabowski S. Principles of Anatomy and Physiology.4. Berne, R.M. and Levy, M.N. Principles of Physiology5. McArdle, W. D., Katch, F. I. And Katch, V. L.Essentials of Exercise Physiology. | | | | | | | |
| **OTHER REFERENCES** | | | | | Astrand,P.-O., Rodahl, K., Dahl, H. A. & Stromme, S. B. (2003). Textbook of Work Physiology:Physiological Bases of Exercise (4th ed.). Stockholm: Human Kinetics | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction and Overview of the course : Homeostasis |
| 2 | Cell Structure and Function cells: membranes, transport, diffusion osmotic and ionic equilibrium |
| 3 | Bioenergetics Energy for Muscle Contraction |
| 4 | Membrane Potential and Cellular Excitation action potentials intra- and inter-cellular communication |
| 5 | Nervous system: organization, somatosensation vision audition autonomic function I |
| 6 | Midterm Examination 1 |
| 7 | Nervous system: organization, somatosensation vision audition autonomic function II |
| 8 | Muscular System Muscle Architecture: Physiology of Muscle Contraction Motor system: organization, contractile mechanism of skeletal, smooth, and cardiac muscle |
| 9 | Cardiovascular system |
| 10 | Pulmonary system: structure-function and gas exchange |
| 11 | Midterm Examination 2 |
| 12 | Renal system: kidney function and the nephron, fluid and electrolyte balance acid-base balance hypertension, |
| 13 | Fatique |
| 14 | Thermoregulation |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Prof. Dr. Kubilay UZUNER | **Date:** | 08.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** |  | **TITLE** | Occupational Hygiene |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 705 | COMPULSORY  (   ) | | ELECTIVE  ( X ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| X | |  | | | |  | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 60 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Encountered in the working environment, of physical (noise, heat, radiation, vibration, etc.) and biological factors (germs, bacteria, viruses, riketsia, sproketler, etc.), the health risks and the measures to be taken to protect against these factors.  The health risks of chemical substances (gases, vapors, dusts, etc.) encountered in the workplace, measures to be taken to protect against these factors. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Students can identify workplace hazards and risks related to health and receive the necessary hygiene measures. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | |  | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. Knowledge of health risks caused by physical, biological and chemical substances encountered in the workplace.  2. Knowledge of measures to be taken to protect against these factors  3. Application of measures to be taken to protect against these factors  4. To analyze the studies in the literature for the measures taken to get rid of the factors that create health risks | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of Hygiene, Definition of Hygiene, Occupational Health Team and The importance of Occupational Health Team |
| 2 | Recognition of the Working Environment Hazards and Risks, Evaluation of the security |
| 3 | Identification of Hazards: Biological Business Environment and Health Effects of the Biological Business Environment (Industrial Dermatoses, etc.) |
| 4 | Identification of Hazards: Chemical Business Environment and Health Effects of the Chemical Business Environment (Solvents, etc.) |
| 5 | Identification of Hazards: Physical Business Environment and Health Effects of the Physical Business Environment (Particles, Industrial Noise, Extreme Values of Heat, Thermal Comfort, Ergonomic, Ionizing Radiation and Nonionizing radiation etc.) |
| 6 | Midterm Examination 1 |
| 7 | Industrial Toxicology and Evaluation Methods |
| 8 | Evaluation of Hazards, Microscopic Scale, Microbial Growth, Cross Contamination |
| 9 | Control of Hazards: Methods, Industrial Ventilation, General Ventilation (Specimen Collection of Air, Monitoring of Gas and Steam, etc.) |
| 10 | Mechanism of the Body Protection: Useful pathogens, etc. |
| 11 | Midterm Examination 2 |
| 12 | Personal Protection/Business Environment Hygiene: Personal Hygiene, Effective Hand Washing Procedures |
| 13 | Protectors for Processing/ Business Environment Hygiene: Tools, Materials, Hygiene of Protective Equipment |
| 14 | Investigation and Evaluation of Work Accidents, Occupational Diseases and Protection Paths |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | | | **CONTRIBUTION LEVEL** | | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | | | **3**  High | | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. | | |  | |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. | | |  | |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. | | |  | |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. | | |  | |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. | | |  | |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. | | |  | |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. | | |  | |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. | | |  | |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. | | |  | |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. | | |  | |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. | | |  | |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. | | |  | |  |  |
| **Prepared by :** | | Assoc.Prof.Özlem ÖRSAL | **Date:** | | 07.07.2015 | | | |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502503 | **TITLE** | LABOUR LAW |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( x ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| 1 | |  | | | | 2 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 50 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Introduction to labour law, basic labour law terms, worker, employer, work place, employer's representative, subcontractor, labour contract, contents and termination of labour contract, obligations of employer, obligations of employee, condition of work, working hours, annual holidays with pay, overwork, health and safety at work, dismissal and it's kinds, redundancy payment, collective labour contract, benefits of collective labour contract, strike and lockout, concept of trade union, membership to trade union, the legal organs of trade union, union activities, benefits of collective labour contract. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To give knowledge about the concept, history, properties, organizations of labor law and individual labor law. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | |  | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Upon successful completion of the course, the students will be able to :  learn information about law and application fields of labour law.  learn information about İndividual labour law service contract, working periods and relaxation periods  have information about unions.  have information about Collective agreements, disagreements and solution stages | | | | | | | |
| **TEXTBOOK** | | | | | İş Kanunları, Fatma Burcu Savaş, A.Can Tuncay, Şebnem Kılıç. Beta Yayınları, 2013 | | | | | | | |
| **OTHER REFERENCES** | | | | | İş Kanunları; Ali Güzel, Ercüment Özkaraca, Saim Ocak, Beta Yayınları, 2012 | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Concept of labour law and its historical background. |
| 2 | The features and sources of labour law. |
| 3 | Coverage of labour law. |
| 4 | Scope of labour law and elements of labour contract. |
| 5 | The parties of employment contract. |
| 6 | Midterm Examination 1 |
| 7 | Types of employment contract. |
| 8 | Termination of of employment contract. |
| 9 | Termination for good cause by employee and employer. |
| 10 | The ends of termination and seniority indemnity. |
| 11 | Midterm Examination 2 |
| 12 | Working hours, vacation and job security. |
| 13 | Trade unions, their foundation, organs, running, activities of trade unions and to benefit from them. |
| 14 | Membership of trade unions and collective labour contract, collective labour conflicts and solutions of them. |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Proff. Adnan KONUK | **Date:** | 08.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501502 | **TITLE** | Work Accident and Safety |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
|  | |  | | | | 3 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definition and importance of occupational accidents, Performance criteria, Occupational accident and safety at some machines and workshops, Sample cases, Investigations. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teach the methods of prevention of occupational accidents in the workplace. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Knowing the possible precautions against accidents in the workplace to protect human health and improve the efficiency of labor | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. To improve the physical conditions of the workplace, develop alternative solutions and solving.  2. Design of the Workplace conditions (noise, heat, dust, etc.), taking measurements, analyzing the results and interpretation.  3. Potential risks in the workplace, assessment and development of solutions to protect human health | | | | | | | |
| **TEXTBOOK** | | | | | 1. İş Sağlığı ve Güvenliği Kurs Notları, 2013, ESGO Ltd.Şti., Eskişehir.2. Metal Sektörü İşyerlerinde İş Sağlığı ve Güvenliği Rehberi, 2009, Çalışma ve Sosyal Güvenlik Bakanlığı İl teftiş Kurulu Başkanlığı, Ankara. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Course scope, execution, evaluation - Work Accidents - Factors, Types |
| 2 | Performance criteria |
| 3 | Work accident at workshops - Basic security rules |
| 4 | Work accident at workshops - Some workshops |
| 5 | Safety in electrical and mechanic works |
| 6 | Midterm Examination 1 |
| 7 | Safety in maintenance |
| 8 | Heavy and dangerous works. |
| 9 | Working in the closed places |
| 10 | Working in high |
| 11 | Midterm Examination 2 |
| 12 | Prevent Policies |
| 13 | Sample cases |
| 14 | Investigations |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Proff. Emin KAHYA | **Date:** | 08.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** |  | **TITLE** | The Epidemiology of Occupational Health |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( x ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| x | |  | | | |  | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | |  | |  |
| Quiz | | | | | 2 | | 15 |
| Homework | | | | |  | |  |
| Project | | | | | 5 | | 55 |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 30 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definitionof the concepts of occupational health and epidemiology | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Be informed of occupational diseases and gain knowledge and skills for the prevention of occupational diseases.  Ensure applicability for this knowledge and skills in workplace conditions. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | 1. know the general principles of occupational health and safety epidemiological methods  2. Understanding the differences epidemiological methods  3. Epidemiological research techniques can be applied in one of the occupational health and safety field  4. To analyze the epidemiological studies in the literature occupational health and safety field | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Please write minimum four learning outcomes for the course. | | | | | | | |
| **TEXTBOOK** | | | | | İş Sağlığı ve Güvenliği (Nazmi BİLİR, Hacettepe Yayınları)Endüstri Sağlığı ve Meslek Hastalıkları (Sıtkı VELİCANGİL) | | | | | | | |
| **OTHER REFERENCES** | | | | | İSGÜM yayınları | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and historical development of epidemiology, epidemiological concepts |
| 2 | Epidemiological data sources and health measures |
| 3 | Areas of epidemiology |
| 4 | Descriptive studies and features |
| 5 | Case-control studies and features |
| 6 | Midterm Examination 1 |
| 7 | Cross-sectional studies and features |
| 8 | Cohort studies and features |
| 9 | Experimental and methodological research |
| 10 | Research, reporting and questionnaire |
| 11 | Midterm Examination 2 |
| 12 | Presentation of research reports |
| 13 | The epidemiology of occupational accidents |
| 14 | Current issues in occupational health |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Assoc.Prof.Özlem ÖRSAL | **Date:** | 07.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502505 | **TITLE** | Laboratory Safety |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7.5 | COMPULSORY  (   ) | | ELECTIVE  ( X ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| 1 | |  | | | | 2 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 30 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 40 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | The importance of laboratory safety; general rules in the lab, risk factors in the lab; laboratory accidents and precautions; first aid; the personal safety and hygiene in the laboratory; personal protective equipments in laboratory, fire safety; legal regulations in the country. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach basic principles of work safely in the laboratory, providing knowledge to students about risks and dangers in the lab, safety working rules, personal protective equipment etc. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Students learn chemical, physical and biological risks in the laboratory environment, learn how to take precautions against those risks, work safely in the lab. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. Obtain basic information about lab safety.  2. Recognize the risks that may occur in the lab.  3. Explain the importance of safety in the lab.  4.Apply the rules of safe operation of the laboratory. | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | | 1. Ulusal Mikrobiyoloji Standartları, Laboratuvar Güvenliği Rehberi, Türkiye Halk Sağlığı Kurumu, Sağlık Bakanlığı Yayın No: 937, Ankara, 2014.2. Yeni Mevzuat Işığında İş Sağlığı ve Güvenliği Temel Bilgileri, RİSKMED Akademi Yayınları, 2012/1.3. Merck Laboratuvar El Kitabı, II. Baskı, Anonim, 2011.4. Laboratory Biosafety Manual, Third Edition, WHO, Geneva, 1994. | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Importance of lab safety, general rules in the laboratory, examples of laboratory accidents |
| 2 | Lab of risk factors; physical risks |
| 3 | Rules of safety working with laboratory equipments and instruments; electrical safety |
| 4 | Lab of risk factors; chemical risks |
| 5 | Safe operation of chemical substances; chemical material safety data sheet, label hazard symbols |
| 6 | Midterm Examination 1 |
| 7 | Lab of risk factors; biological risks |
| 8 | Laboratory accidents and measures, first aid measures |
| 9 | Personal hygiene and safety in the laboratory; personal protective equipment |
| 10 | Fire safety; fire extinguishers, fire extinguisher types, proper use of fire extinguisher |
| 11 | Midterm Examination 2 |
| 12 | Laboratory design; ventilation, eyes shower, emergency shower etc., hazard communication |
| 13 | Risk analysis in laboratory, importance and benefits |
| 14 | Lab safety -related institutions, legal regulations in our country |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Assoc. Prof. Dr. Belgin Karabacakoğlu | **Date:** | 11.5.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **INDUSTRIAL ENGINEERING (MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** |  | **TITLE** | OFFICE ERGONOMICS |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( x ) | TURKISH1 |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | | 1 | | 30 |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 40 |
| **PREREQUISITE(S)** | | | | | - | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Classifying the duties at offices, knowledge on office equipments, right postures of the office workers, human and body measures (antropometry)  antropometrical data banks, statistical analysis of data, compatability of office equipments and body measures. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Introducing the methods to optimize office environments by considering office equipments and tools to be compatible with workers. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Optimizing offices to fit to workers and protecting worker’s health and improving efficiency. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. Determining current problems, generating alternative solutions and optimizing physical conditions of office environments  2. Design of experiments for office environments by considering noise, temperature, dust etc., measuring, analyzing the resuts and interpretation  3. Conducting a project and gaining the skills to work in a group  4. Working in a multidisiplinary environment and developing communication skills | | | | | | | |
| **TEXTBOOK** | | | | | Su, B.A., 2005, Ergonomi, Atılım Üniversitesi Yayınları, Ankara | | | | | | | |
| **OTHER REFERENCES** | | | | | Reese, C.A., 2004, Office building safety and health, CRC Press, London.Grandjean, E., 1987, Ergonomics in computerized offices, Taylor & Francis Babalık, F.C., 2011, Mühendisler İçin Ergonomi İşbilim, Üçüncü Baskı, Dore Yayıncılık Bursa, 585s.Ltd., London.Erkan, N., 2001, Ergonomi, 6.Baskı, MPM Yayın No:373, Ankara.Relevant papers | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction of the course  Definitions of ergonomics, importancemi, classification of work |
| 2 | Physcial office environments |
| 3 | Office equipments |
| 4 | Office environmental factors and effects to the worker - Climate |
| 5 | Office environmental factors and effects to the worker - Noise |
| 6 | Midterm Examination 1 |
| 7 | Office environmental factors and effects to the worker – Illımination and other |
| 8 | Human body measures |
| 9 | Antropometry |
| 10 | Ergonomical office layout |
| 11 | Midterm Examination 2 |
| 12 | Work station arrangement in offices |
| 13 | Posture analysis |
| 14 | Risk analysis for the offices |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE INDUSTRIAL ENGINEERING MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Industrial Engineering, ability to evaluate, interpret and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through scientific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Industrial Engineering practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to industrial engineering and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 8** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 9** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 10** | To be informed of social, environmental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 11** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Associate Prof. Dr. Berna ULUTAŞ | **Date:** | 01/07/2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501508 | **TITLE** | Hazardous materials and waste management |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  (   ) | | ELECTIVE  ( X ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
|  | |  | | | | 3 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 30 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 40 |
| **PREREQUISITE(S)** | | | | | - | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Chemicals in workplaces, health risks of chemicals, labeling, storage and transfer of chemicals, hazardous waste and hazardous wastes management, homework presentation. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To teach chemicals in workplaces, health risks of chemicals, labeling, storage and transfer of chemicals, hazardous wastes and hazardous wastes management. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Students learn  •chemicals in workplaces and properties of chemicals, health risks of chemicals,  •labeling, storage and transfer of chemicals,  •Hazardous materials and classification  •Hazardous waste management  •Student recognize on regulation about this subject in our country. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. Students explain chemicals and properties and effect of chemicals on health. They know and use material safety data sheets.  2. They know storage of chemicals.  3. They explain and classified hazardous materials. They know symbols for labeling.  4. They classified hazardous wastes. They know hazardous waste management methods.  5. They recognize regulations in our country about working chemicals and hazardous waste management.  6. Students examine, define, collect data, estimate, discuss, defend, comment, select, evaluate and present by preparing homework. Please write minimum four learning outcomes for the course. | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Yeni Mevzuat Işığında İş Sağlığı ve Güvenliği Temel Bilgileri, RİSK MED Akademi Yayınları, 2012/1.2.Dizdar E.N., (2008). İş Güvenliği, Murathan Yayınevi.3.Merck Laboratuvar El Kitabı, 2007.4.Hazardous chemicals in human and environmental health, World Health Organization, 2000. | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Chemicals, properties of chemicals and effect of chemicals on human health |
| 2 | Chemicals, properties of chemicals and effect of chemicals on human health |
| 3 | Material safety data sheets (MSDS), Storage of chemicals |
| 4 | Storage of chemicals, Labeling and transfer of chemicals |
| 5 | Law and regulations on working chemicals |
| 6 | Midterm Examination 1 |
| 7 | Protection from chemicals risk |
| 8 | Hazardous materials and classifications |
| 9 | Law and regulations on hazardous waste management |
| 10 | Law and regulations on hazardous waste management, responsibilities |
| 11 | Midterm Examination 2 |
| 12 | Hazardous waste management |
| 13 | Homework presentation |
| 14 | Homework presentation |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Prof.Dr.Neşe Öztürk | **Date:** | 13.5.2015 |

**Signature**:

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**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501507 | **TITLE** | Occupational Health and Safety for Different Sectors |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 2 | | 50 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 10 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 40 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Occupational accidents and diseases for different sectors, protector, Risk assessment, the relevant legislation | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teach the methods of prevention of occupational accidents and diseases in the workplace. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Knowing the possible precautions against accidents and occupational diseases in the workplace to protect human health and improve the efficiency of labor | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. To improve the physical conditions of the workplace, develop alternative solutions and solving.  2. Design of the Workplace conditions (noise, heat, dust, etc.), taking measurements, analyzing the results and interpretation.  3. Potential risks in the workplace, assessment and development of solutions to protect human health | | | | | | | |
| **TEXTBOOK** | | | | | 1. İş Sağlığı ve Güvenliği Kurs Notları, 2013, ESGO Ltd.Şti., Eskişehir. 2. Bayır, M. ve Ergül, M., 2006, İş Güvenliği ve Risk Değerlendirme Uygulamaları, Bursa. 3. Dizdar, E.N., 2008, İş Güvenliği, 4.Baskı, Murathan Yayınevi,Trabzon. 4. Esin, A., 2006, Yeni Mevzuatın Işığında İş Sağlığı ve Güvenliği, TMMO MMO Yayın No:MMO/363/2, Ankara. | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Course scope, execution, evaluation Occupational Safety for a sector |
| 2 | Occupational Safety Culture for related sector |
| 3 | Work Accidents and safety at the sector related workshops |
| 4 | Work Accidents and safety at the sector related workshops |
| 5 | Work Accidents and safety at the sector related machines |
| 6 | Midterm Examination 1 |
| 7 | Work Accidents and safety at the sector related machines |
| 8 | Occupational Diseases |
| 9 | Risk Assessment |
| 10 | Protectors |
| 11 | Midterm Examination 2 |
| 12 | Related Safety Law |
| 13 | Sample cases practices |
| 14 | Project presentations |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Prof.Dr. İlker ÖZDEMİR  Prof.Dr. Osman PARLAKTUNA  Assoc.Prof.Dr. Seyhan ÖNDER  Assist Prof.Dr. Ramazan UĞURLUBİLEK | **Date:** | 09.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501504 | **TITLE** | First Aid |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
| 1 | |  | | | | 2 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 60 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | In this course, teaches to first aid knowledge and skills which contains sick or injured person until medical help to save lives, maintain safety of the injured person. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | This course aim is to teach first-aid knowledge and skills to healthy individuals which may experience a sudden health problems (Cardiac and respiratory arrest, bleeding, drowning, poisons, burns, fractures etc.) in their daily lives and workplace. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | This course has a directly related to which may a sudden health problems and occupational accidents in workplace. Personnels perform must first-aid knowledge and skills in workplace. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Identify term to first aid and first aider  Identify briefly anatomy and physiology of the human body  Assessment of the injured and scene of accident  Perform basic life support (Cardio-pulmoner resuscitation)  Know a foreign object blocking the airway by removing the object first aid procedure  Know to practises of first aid in near drowning  Know to practises of first aid in bleeding  Know to practises of first aid in shock  Know to practises of first aid in injuries  Know to practises of first aid in poisons  Know to practises of first aid in insect and animal to bite and stings  Know to practises of first aid in burns  Know to practises of first aid in heat stroke and frostbite  Know to practises of first aid in fractures, dislocations and sprains  Know to practises of first aid in a foreign object to eyes, nose and ears  Know to practises of first aid in other emergencies (Fainting, Hyperglycemia, Hypoglycemia, epilepsy seizures, heart attack fever etc.) | | | | | | | |
| **TEXTBOOK** | | | | | Erdil F, Bayraktar N, Çelik SŞ (2009) Temel İlk Yardım. Eflatun Yayınevi, Ankara. | | | | | | | |
| **OTHER REFERENCES** | | | | | Kocatürk C (2005) İlk Yardım El Kitabı. Ohan Matbaacılık, İstanbul.Tabak S, Somyürek İ (2008) Temel İlk Yardım ve Acil Bakım. Palme Yayıncılık, Ankara.American Heart Association Guidelines CPR and ECC (2010). http://www.heart.org/HEARTORG/CPRAndECC/Science/2010-AHA-Guidelines-for-CPR-ECC\_UCM\_317311\_SubHomePage.jsp/ | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Introduction to the course, information about the content and process / Term to first aid and first aider |
| 2 | Briefly anatomy and physiology of the human body |
| 3 | Briefly anatomy and physiology of the human body / Assessment of the injured and scene of accident |
| 4 | Basic life support (Cardio-pulmoner resuscitation) |
| 5 | A foreign object blocking the airway by removing the object first aid procedure (Heimlich Manoveur) / Practises of first aid in a foreign object to eyes, nose and ears |
| 6 | Midterm Examination 1 |
| 7 | Practises of first aid in bleeding and shock |
| 8 | Practises of first aid in injuries |
| 9 | Practises of first aid in poisons and near drowning / Practises of first aid in insect and animal to bite and stings |
| 10 | Practises of first aid in burns |
| 11 | Midterm Examination 2 |
| 12 | Practises of first aid in fractures, dislocations and sprains |
| 13 | Practises of first aid in other emergencies (Fainting, Epilepsy Seizures, Hyperglycemia, Hypoglycemia) |
| 14 | Practises of first aid in other emergencies (Heart Attack, Hypothermia, Hiperthermia, Fever Convulsion) |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Ass. Prof. Neşe ÇELİK | **Date:** | 08.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501505 | **TITLE** | OCCUPATIONAL HEALTH AND SAFETY REGULATIONS |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Regulations Related to Occupational Health and Safety Law No.6331 | | | | | | | |
| **COURSE OBJECTIVES** | | | | | The purpose of this course is to ensure knowledge of the relevant regulations about Occupational Health and Safety for engineer, architect or technical staff which will work as Occupational Safety Specialist | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | To ensure Occupational Health and Safety in the workplace and to improve health and safety conditions existing duties, powers, responsibilities, rights and obligations mentioned in laws and regulations about OSHA, | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | At the end of this course, participants can define the nature of legal norms in the constitution, laws, rules, regulations, directives, circulars and directives, define the concepts, define the fundamental purposes and principles of labor law, define national regulations on OSHA and describe the existing legal regulations related to OSHA in our country, | | | | | | | |
| **TEXTBOOK** | | | | | Printed books, lecture notes and visual materials relevant to OSHA laws, rules, regulations, notifications and circulars | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Occupational Health and Safety Law No.6331 |
| 2 | Occupational Health and Safety Law No.6331 |
| 3 | Occupational Health and Safety Law No.6331 |
| 4 | Occupational Health and Safety Law No.6331 |
| 5 | Regulations Related to Occupational Health and Safety |
| 6 | Midterm Examination 1 |
| 7 | Regulations Related to Occupational Health and Safety |
| 8 | Regulations Related to Occupational Health and Safety |
| 9 | Regulations Related to Occupational Health and Safety |
| 10 | Regulations Related to Occupational Health and Safety |
| 11 | Midterm Examination 2 |
| 12 | Regulations Related to Occupational Health and Safety |
| 13 | Regulations Related to Occupational Health and Safety |
| 14 | Regulations Related to Occupational Health and Safety |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Assoc.Prof.Dr.Seyhan ONDER | **Date:** | 13.05.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506501501 | **TITLE** | Occupational Safety |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
|  | |  | | | | 3 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | | 1 | | 10 |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definition of occupational safety , occupational accidents, occupational diseases, occupational safety in workplaces, Risk assessment, Guards, Fire, the relevant legislation | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teach the methods of prevention of occupational accidents and diseases in the workplace. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Knowing the possible precautions against accidents and occupational diseases in the workplace to protect human health and improve the efficiency of labor | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. To improve the physical conditions of the workplace, develop alternative solutions and solving.  2. Design of the Workplace conditions (noise, heat, dust, etc.), taking measurements, analyzing the results and interpretation.  3. Potential risks in the workplace, assessment and development of solutions to protect human health | | | | | | | |
| **TEXTBOOK** | | | | | Kahya, E., 2014, İş Güvenliği, ESOGÜ Yayın No :246, Eskişehir. | | | | | | | |
| **OTHER REFERENCES** | | | | | 1.Yiğit, A., İş Güvenliği, 2013, Dora basım-Yayın Dağıtım Ltd. Şti, Bursa.2.Bayır, M. ve Ergül, M., 2006, İş Güvenliği ve Risk Değerlendirme Uygulamaları, Bursa.3.Dizdar, E.N., 2008, İş Güvenliği, 4.Baskı, Murathan Yayınevi, Trabzon. | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Course scope, execution, evaluation  Occupational Safety (defines, importance, etc.) |
| 2 | Occupational Safety Culture |
| 3 | Work Accidents |
| 4 | Work Accidents |
| 5 | Occupational diseases |
| 6 | Midterm Examination 1 |
| 7 | Factors Affecting Business Environment |
| 8 | Security in workshops |
| 9 | Security in workshops |
| 10 | Risk Assessment |
| 11 | Midterm Examination 2 |
| 12 | Protectors |
| 13 | Fire |
| 14 | Occupational Safety Law |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Proff. Emin KAHYA | **Date:** | 7.7.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502501 | **TITLE** | Occupational Diseases |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
|  | |  | | | | 3 | | | | | | |
| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 40 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 60 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Definition and general characteristics of occupational disease, occupational diseases caused by chemical, physical and biological factors | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To be informed of occupational diseases and gain knowledge and skills for the preventions | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | To know required preventions about occupational diseases. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Knowing general characteristics and prevention methods of occupational diseases | | | | | | | |
| **TEXTBOOK** | | | | |  | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Definition and general characteristics of occupational diseases |
| 2 | Statistics of Occupational diseases |
| 3 | Occupational diseases from chemical reasons |
| 4 | Occupational diseases from chemical reasons |
| 5 | Occupational skin diseases |
| 6 | Midterm Examination 1 |
| 7 | Diseases of the respiratory system |
| 8 | Infectious diseases |
| 9 | Occupational diseases from physical factors |
| 10 | Occupational diseases from physical factors |
| 11 | Midterm Examination 2 |
| 12 | Diseases of the musculoskeletal system |
| 13 | The most common occupational diseases in Turkey |
| 14 | Legislation about occupational diseases in Turkey |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Assoc. Prof. Uğur BİLGE | **Date:** | 08.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** | 506502502 | **TITLE** | Risk Management |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 7,5 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 30 |
| Quiz | | | | |  | |  |
| Homework | | | | | 1 | | 20 |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | The identification of hazard and risk concepts, explaining the risk assessment methods and description of the evaluation of risks in the workplace. | | | | | | | |
| **COURSE OBJECTIVES** | | | | | To provide participants with the concepts of risk assessment and management, and provide them with the knowledge of risk assessment methods. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Emphasize the importance of risk management in occupational health and safety and making the risk analysis. | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | Participants;  Define the basis and need of the risk assessment,  Sorts of risk assessment methods.  Assesses the risks in the workplace. | | | | | | | |
| **TEXTBOOK** | | | | | İş Sağlığı Ve Güvenliği, Yönetim Sistemleri Ve Risk Değerlendirme Metodolojileri; Özlem ÖZKILIÇ | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | The main reason of risk management |
| 2 | Hazard and risk concepts, hazard resources and create risks |
| 3 | Related legislation |
| 4 | Related legislation |
| 5 | As part of risk management, risk assessment |
| 6 | Midterm Examination 1 |
| 7 | Risk assessment team and employee participation |
| 8 | Risk assessment techniques and comparisons |
| 9 | Risk analysis and techniques |
| 10 | Risk analysis and techniques |
| 11 | Midterm Examination 2 |
| 12 | Risk assessment practices |
| 13 | Risk assessment practices |
| 14 | Risk assessment practices |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by :** | Prof. Dr. Mustafa Onder | **Date:** | 09.07.2015 |

**Signature**:

**T.R.**

**ESKISEHIR OSMANGAZI UNIVERSITY**

**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**

**COURSE INFORMATION FORM**

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| **DEPARTMENT** | **Occupational Health and Safety (Non-Thesis MSc)** | **SEMESTER** |  |

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| **COURSE** | | | |
| **CODE** |  | **TITLE** | Sectoral Occupational Health and Safety |

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| **LEVEL** | **HOUR/WEEK** | | | | | | **Credit** | **ECTS** | **TYPE** | | | **LANGUAGE** |
| **Theory** | | **Practice** | **Laboratory** | | |
| **MSc** | 3 | | 0 | 0 | | | 3 | 6 | COMPULSORY  ( x ) | | ELECTIVE  (   ) | Turkish |
| **CREDIT DISTRIBUTION** | | | | | | | | | | | | |
| **Basic Science** | | **Basic Engineering** | | | | **Knowledge in the discipline**  **[if it contains considerable design content, mark with (√)]** | | | | | | |
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| **ASSESSMENT CRITERIA** | | | | | | | | | | | | |
| **SEMESTER ACTIVITIES** | | | | | **Evaluation Type** | | | | | **Number** | | **Contribution**  **( % )** |
| Midterm | | | | | 1 | | 50 |
| Quiz | | | | |  | |  |
| Homework | | | | |  | |  |
| Project | | | | |  | |  |
| Report | | | | |  | |  |
| Seminar | | | | |  | |  |
| Other (     ) | | | | |  | |  |
| **Final Examination** | | | | | | | 50 |
| **PREREQUISITE(S)** | | | | |  | | | | | | | |
| **SHORT COURSE CONTENT** | | | | | Occupational accidents and diseases for different sectors, protector, Risk assessment, the relevant legislation | | | | | | | |
| **COURSE OBJECTIVES** | | | | | Teach the methods of prevention of occupational accidents and diseases in the workplace. | | | | | | | |
| **COURSE CONTRIBUTION TO THE PROFESSIONAL EDUCATION** | | | | | Knowing the possible precautions against accidents and occupational diseases in the workplace to protect human health and improve the efficiency of labor | | | | | | | |
| **LEARNING OUTCOMES OF THE COURSE** | | | | | 1. To improve the physical conditions of the workplace, develop alternative solutions and solving.  2. Design of the Workplace conditions (noise, heat, dust, etc.), taking measurements, analyzing the results and interpretation.  3. Potential risks in the workplace, assessment and development of solutions to protect human health | | | | | | | |
| **TEXTBOOK** | | | | | 1. İş Sağlığı ve Güvenliği Kurs Notları, 2013, ESGO Ltd.Şti., Eskişehir. 2. Bayır, M. ve Ergül, M., 2006, İş Güvenliği ve Risk Değerlendirme Uygulamaları, Bursa. 3. Dizdar, E.N., 2008, İş Güvenliği, 4.Baskı, Murathan Yayınevi,Trabzon. 4. Esin, A., 2006, Yeni Mevzuatın Işığında İş Sağlığı ve Güvenliği, TMMO MMO Yayın No:MMO/363/2, Ankara. 5. Maden İşyerlerinde İş Sağlığı ve Güvenliği Yönetmeliği | | | | | | | |
| **OTHER REFERENCES** | | | | |  | | | | | | | |

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| **COURSE SCHEDULE (Weekly)** | |
| **WEEK** | **TOPICS** |
| 1 | Preface, legislations and awerness at workplace accidents-Occupational Safety and healt at designe, manufacturers and responsibilities of users of work equipment and machinery |
| 2 | Occupational Safety and healt at working with pressure vessels and maintenance and repairing |
| 3 | Occupational Safety and healt at working with lifting equipments and motor vehicle |
| 4 | Occupational health and safety at working with hand tools personal protection equipments and work accidents |
| 5 | Occupational health and safety in Welding work |
| 6 | Midterm Examination 1 |
| 7 | Occupational health and safety at work in confined spaces and workplace ventilation |
| 8 | OHS regulations in the mining workplaces |
| 9 | OHS regulations in the mining workplaces |
| 10 | OHS regulations in the mining workplaces |
| 11 | Midterm Examination 2 |
| 12 | OHS regulations in the mining workplaces |
| 13 | OHS regulations in the mining workplaces |
| 14 | OHS regulations in the mining workplaces |
| 15,16 | Final Examination |

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| **CONTRIBUTION OF THE COURSE LEARNING OUTCOMES TO THE Occupational Health and Safety Non-Thesis MSc PROGRAM LEARNING OUTCOMES** | | **CONTRIBUTION LEVEL** | | |
| **NO** | **LEARNING OUTCOMES (Non-Thesis MSc)** | **3**  High | **2**  Mid | **1**  Low |
| **LO 1** | Accessing deep and advanced knowledge through scientific researches in the field of Occupational safety and health, ability to evaluate, interprete and implement the knowledge. |  |  |  |
| **LO 2** | Having comprehensive knowledge about actual techniques and methods in engineering as well as their constraints. |  |  |  |
| **LO 3** | Completion and implementation of uncertain, limited or missing data through sicentific methods in addition ability to use knowledge belongs to various disciplines. |  |  |  |
| **LO 4** | Awareness of new and developing Occupational safety and health practices, ability to investigate and learn them as needed. |  |  |  |
| **LO 5** | Ability to define and formulate problems related to Occupational safety and health and skills for developing methods to solve the problems and using innovative methods during solutions. |  |  |  |
| **LO 6** | Developing new and/or original methods and conceptions; ability to design systems or processes and ability to develop innovative solutions in designs. |  |  |  |
| **LO 7** | Ability to design and conduct theoretical, experimental and modelling based researches, ability to inspect and solve complex problems in this process. |  |  |  |
| **LO 8** | Ability to work efficiently in disciplinary and multidisciplinary teams, skills for taking the lead in the teams and developing solution approaches under complicate conditions; ability to work independently and take responsibility. |  |  |  |
| **LO 9** | Ability to use a language for verbal and written communication. |  |  |  |
| **LO 10** | Ability to transmit results and processes of studies systematically and definitively to national/international, verbal/written platforms which are inside or outside the relevant field. |  |  |  |
| **LO 11** | To be informed of social, enviromental, health, security and law aspects of engineering practices besides project management and business life practices and awareness of constraints caused by them. |  |  |  |
| **LO 12** | Awareness of considering social, scientific and ethical principles during data collection, interpretation, announcement stages besides all vocational activities. |  |  |  |

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| **Prepared by** | Prof.Dr. Mustafa ÖNDER  Assist Prof.Dr. Ramazan UĞURLUBİLEK | **Date:** | 20.04.2016 |