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|  | **ECTS Course Description Form** |
| **PART I ( Senate Approval)** |
| **Offering School**  | College of Engineering |
| **Offering Department** | Industrial Engineering |
| **Program(s) Offered to** | Industrial Engineering | Compulsory |
|  |  |
|  |  |
| **Course Code**  | IE 407 |
| **Course Name** | Occupational Health and Safety in Industrial Engineering |
| **Language of Instruction** | English |
| **Type of Course** | Departmental Area Elective |
| **Level of Course** | Undergraduate |
| **Hours per Week** | **Lecture:** 3 hour | **Laboratory:** | **Recitation:**   | **Practical:**  | **Studio:** | **Other:** |
| **ECTS Credit** | 6 |
| **Grading Mode** | Letter Grade |
| **Pre-requisites** | IE 201 and IE 202 |
| **Co-requisites** |  |
| **Registration Restriction** |  |
| **Educational Objective** | The course aims to teach general safety principles, risk analysis methods. Also, the course prepares students to identify and analyze industrial hazards and control issues using basic safety engineering principles.  |
| **Course Description** | -Identify common industrial accidents, types and causes of accidents - Identify industrial hazards during the completion of safety audits and when preplanning new facilities/operations. -Determine methods for controlling industrial hazards through the application of either engineering principles or administrative programs. - Evaluate the effectiveness of control methods implemented. FMEA, Fine- Kinney and other risk analysis methods are implemented. |
| **Learning Outcomes**  | **LO1** | * Student knows basic terminology of occupational safety and health.
* Student is able to define hazards and related risks.
* Student gains knowledge on risk analysis methods.
* Students can prepare basic risk assessment structre.
* Students can analyze occupational accidents and propose control measures to avoid accidents.
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| **LO2**  |
| **LO3** |
| **LO4** |
| **LO5** |
| **PART II ( Faculty Board Approval)** |
| **Basic Outcomes (University-wide)** | **No.** | Program Outcomes | **LO1** | **LO2** | **LO3** | **LO4** | **LO5** | **LO6** |
| **PO1** | Ability to communicate effectively and write and present a report in Turkish and English.  | 🗸 🗸 🗸 🗸 🗸🗸 🗸 🗸 🗸 🗸🗸 🗸 🗸 🗸 🗸🗸 🗸 🗸 🗸 🗸🗸 🗸 🗸 🗸 🗸🗸 🗸 🗸 🗸 🗸 |
| **PO2** | Ability to work individually, and in intra-disciplinary and multi-disciplinary teams. |
| **PO3** | Recognition of the need for life-long learning and ability to access information, follow developments in science and technology, and continually reinvent oneself. |
| **PO4** | Knowledge of project management, risk management, innovation and change management, entrepreneurship, and sustainable development. |
| **PO5** | Awareness of sectors and ability to prepare a business plan. |
| **PO6** | Understanding of professional and ethical responsibility and demonstrating ethical behavior. |
| **Faculty Specific Outcomes** | **PO7** |  |
| **PO8** |  |
| **PO9** |  |
| **PO10** |  |
| **PO11** |  |
| **PO12** |  |
| **Discipline Specific Outcomes (program)** | **PO13** |  |
| **PO14** |  |
| **PO15** |  |
| **PO16** |  |
| **PO17** |  |
| **PO18** |  |
| **Specialization Specific Outcomes** | **PO N….** |  |
| **PART III ( Department Board Approval)** |
| **Course Subjects, Contribution of Course Subjects to Learning Outcomes, and Methods for Assessing Learning of Course Subjects** | **Subjects** | **Week** |  | **LO1** | **LO2** | **LO3** | **LO4** | **LO5** | **LO6** |
| **S1** | 1-2 | Introduction to occupational health and safety: Basic concepts of safety engineering, Need for safety (for engineers, managers and society in general), Historical background, Work accidents in Turkey and the World, General safety terms, Safety regulations, standards, and organizations. | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S2** | 3-4 | Industrial Accidents: Types and Causes of Accidents: Legal, economical and ethical aspects, Work accident costs and rates, Time lost, Leading causes of workplace deaths, Accident prevention. | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S3** | 5-7 | Occupational hazards: Physical Hazards, Chemical Hazards ,Biological Hazards, Mechanical Hazards, Psychosocial Hazards | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S4** | 7-8 | Risk Analysis : Basic Concepts | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S5** | 9-11 | Risk Assessment Methods:FMEA  | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S6** | 12 | Risk Assessment Methods:Fine Kinney | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **S7** | 13-14 | Other risk assessment methods | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 | A1, A2, A3 |  |
| **Assessment Methods, Weight in Course Grade, Implementation and Make-Up Rules**  | **No.** | **Type** | **Weight** | **Implementation Rule** | **Make-Up Rule** |
| **A1** | **Exam** | 40% | *No electronic devices are allowed in the examinations except for calculators.* | *If an exam is missed, a make-up exam may be granted if student’ absence from the exam is because of a valid and documented excuse.* |
| **A2** | **Quiz** | 10% | *No electronic devices are allowed in the examinations except for calculators.* | *If an exam is missed, a make-up exam may be granted if student’ absence from the exam is because of a valid and documented excuse.* |
| **A3** | **Homework** | 10% | *Submission by the deadline* | *Late homework is penalized by a percentage* |
| **A4** | **Project** |  40%- | *Submission by the deadline -* | *No compensation, no makeup* |
| **A5** | **Report** | - | - | - |
| **A6** | **Presentation** | - | - | - |
| **A7** | **Attendance/ Interaction** |  |  |  |
| **A8** | **Class/Lab./****Field Work** | - | - | - |
| **A9** | **Other** | - | - | - |
| **TOTAL** | **100%** |
| **Evidence of Achievement of Learning Outcomes** | *%70 course attendance and gaining 70% or more on taken exams and other assignments.*  |
| **Method for Determining Letter Grade** | *The %70 total attendance is required otherwise student will fail the course due to absenteeism. Letter grades are determined by applying catalogue system on student’s total weighted grade. Following is an example:*≥ 97% A+[93 97) A[90 93) A-[87 90) B+[83 87) B[80 83) B-[77 80) C+[73 77) C[70 73) C-[67 70) D+[60 67) D< 60 F |
| **Teaching Methods, Student Work Load** | **No** | **Method** | **Explanation** | **Hours** |
| ***Time applied by instructor*** |
| **1** | **Lecture** | *(14 weeks) × (3 hrs per week)* | *42* |
| **2** | **Interactive Lecture** |  |  |
| **3** | **Recitation** |  |  |
| **4** | **Laboratory** |  |  |
| **5** | **Practical** |  |  |
| **6** | **Field Work** |  |  |
| ***Time expected to be allocated by student*** |
| **7** | **Project** | *(14 weeks) × (3 hrs per week)* | *42* |
| **8** | **Homework** | *(14 weeks) × (1 hrs per week)* | *14* |
| **9** | **Pre-class Learning of Course Material**  | *(14 weeks) × (1 hr per week)* | *14* |
| **10** | **Review of Course Material** | *(14 weeks) × (3 hrs per week)* | *42* |
| **11** | **Studio** |  |  |
| **12** | **Office Hour** | *(14 weeks) × (3 hrs per week)* | *42* |
| **TOTAL** |  196 |
| **IV. PART** |
| **Instructor** | **Name** | *Assist.Prof. M.Fatih AK* |
| **E-mail** | *fatih.ak@antalya.edu.tr* |
| **Phone Number** |  |
| **Office Number** | *AG-05* |
| **Office Hours** |  |
| **Course Materials** | **Mandatory** |  |
| **Recommended** |  |
| **Other** | **Scholastic Honesty** | Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Any form of scholastic dishonesty is a serious academic violation and will result in a disciplinary action. |
| **Students with Disabilities** | Reasonable accommodations will be made for students with verifiable disabilities. |
| **Safety Issues**  | The course does not require any special safety precautions. |
| **Flexibility** | Circumstances may arise during the course that prevents the instructor from fulfilling each and every component of this syllabus; therefore, the syllabus is subject to change.  Students will be notified prior to any changes. |