|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| antalya bilim Ã¼niversitesi ile ilgili gÃ¶rsel sonucu | | | **ECTS Course Description Form** | | | | | | | | | | | |
| **PART I ( Senate Approval)** | | | | | | | | | | | | | | |
| **Offering School** | **College of Engineering** | | | | | | | | | | | | | |
| **Offering Department** | **Industrial Engineering** | | | | | | | | | | | | | |
| **Program(s) Offered to** | Industrial / Computer Engineering | | | | | | Compulsory | | | | | | | |
| Other Engineering Departments | | | | | | Elective | | | | | | | |
|  | | | | | |  | | | | | | | |
| **Course Code** | GEN 200 | | | | | | | | | | | | | |
| **Course Name** | Engineering Economics | | | | | | | | | | | | | |
| **Language of Instruction** | English | | | | | | | | | | | | | |
| **Type of Course** | Lecture/Problem Solving/Lab Work/ E- Learning Activities | | | | | | | | | | | | | |
| **Level of Course** | Undergraduate | | | | | | | | | | | | | |
| **Hours per Week** | **Lecture:**  3 hrs/week | | **Laboratory:** 2hrs/ week  5times per a semester | | | **Recitation:**  2 hrs/week | **Practical:** | | | **Studio:** | | **Other:** | | |
| **ECTS Credit** | 4 | | | | | | | | | | | | | |
| **Grading Mode** | Letter Grade | | | | | | | | | | | | | |
| **Pre-requisites** | **-** | | | | | | | | | | | | | |
| **Co-requisites** | **-** | | | | | | | | | | | | | |
| **Registration Restriction** |  | | | | | | | | | | | | | |
| **Educational Objective** | Supplementing engineering student’s technical training with the knowledge and capability to perform financial analysis especially in the area of capital investment.  1. To use engineering economy factors and different methods for the evaluation of alternatives  2. To carry out sensitivity analysis  3. To integrate the effects of inflation, depreciation and/or tax into an economic analysis whenever necessary  4. To use computer software for engineering economy analysis | | | | | | | | | | | | | |
| **Course Description** | To introduce the fundamental concepts of economic analysis for engineering and managerial decision making, to explain how these will affect the functioning of an engineering company and contribute the decision making in engineering operations. | | | | | | | | | | | | | |
| **Learning Outcomes** | **LO1** | | When this course has been completed the student will have developed knowledge and understanding of:  The fundamental concepts of engineering economy  How to use engineering economy factors to account for the time value of Money  Service, revenue, mutually exclusive and independent alternatives  How to consider inflation, depreciation and after tax economic analysis  How to carry out sensitivity analysis  How to use computer software for engineering economy analysis | | | | | | | | | | | |
| **LO2** | |
| **LO3** | |
| **LO4** | |
| **LO5** | |
| **LO6** | |
| **n..** | |
| **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 | Introduction to Engineering Economy | | | A1 |  |  | |  | |  |  | |
| **S2** | 2-3 | Cost Concepts and Design Economics | | | A1,  A2, A3 |  |  | |  | |  |  | |
| **S3** | 4 | Cost Estimation Techniques | | | A1,  A2, A3 |  |  | |  | |  | A8 | |
| **S4** | 5-6 | The Time Value of Money | | |  | A1,  A2, A3 |  | |  | |  | A8 | |
| **S5** | 7-8 | Evaluating a Single Project | | |  | A1,  A2, A3 |  | |  | |  | A8 | |
| **S6** | 9-11 | Comparison and Selection among Alternatives | | |  |  | A1,  A2, A3 | |  | |  | A8 | |
| **S7** | 12-13 | Depreciation and Income Taxes | | |  |  |  | | A1,  A2, A3 | |  | A8 | |
| **S8** | 14 | Breakeven and Sensitivity Analysis | | |  |  |  | |  | | A1,  A2, A3 | A8 | |
|  |  |  | | |  |  |  | |  | |  |  | |
|  |  |  | | |  |  |  | |  | |  |  | |
|  |  |  | | |  |  |  | |  | |  |  | |
| **Assessment Methods, Weight in Course Grade, Implementation and Make-Up Rules** | | | **No.** | **Type** | | **Weight** | **Implementation Rule** | | **Make-Up Rule** | | | | | | | |
| **A1** | **Exam** | | 75% | 2 Midterm Exams 1 Final Exam  Open book, closed notes.  No electronic devices are allowed in the examinations except for calculators. | | If a student misses an exam and provides an acceptable legitimate document, a make-up exam should be provided for at least one midterm. | | | | | | | |
| **A2** | **Quiz** | | 10% | 2 Online Quizzes  The duration is one week. Quizzes are announced to the students at least one week in advance. | | Late submissions are penalized by %50 of total grade | | | | | | | |
| **A3** | **Homework** | | 10% | 4 Online Assignments  The duration is one week. Assignments are announced to the students at least one week in advance. | | Late submissions are penalized by %50 of total grade | | | | | | | |
| **A4** | **Project** | | - | - | | - | | | | | | | |
| **A5** | **Report** | |  | - | | - | | | | | | | |
| **A6** | **Presentation** | | - | - | | - | | | | | | | |
| **A7** | **Attendance/ Interaction** | | - | - | | - | | | | | | | |
| **A8** | **Class/Lab./**  **Field Work** | | 5%- | 1 Excel Assignment related with all lab work  The duration is 2 weeks. | | Late submissions are not accepted. | | | | | | | |
| **A9** | **Other** | | **-** | **-** | | **-** | | | | | | | |
| **TOTAL** | | | **100%** | | | | | | | | | | |
| **Evidence of Achievement of Learning Outcomes** | | | Every topic is tested with at least one exam question. In order to pass, a student needs to accumulate certain percentage of points and this percentage is determined by the class mean. Students performed Microsoft Excel studies on course material and reported their work. | | | | | | | | | | | | | |
| **Method for Determining Letter Grade** | | | The method on which the letter grade is based on will be announced at the beginning of the semester, and this method may be subjected to change depending on the performance of the students.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Assessment | Midterm 1 | Midterm 2 | Final 1 | Quiz | Homework | Lab | TOTAL | | Points | 20 | 20 | 35 | 10 | 10 | 5 | 100 |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Total points | 100 - 95 | 94-90 | 89-85 | 84-80 | 79-75 | 74-70 | 69-65 | 64-60 | 59-55 | 54-45 | | Letter Grade | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | | | | | | | | | | | | | | |
| **Teaching Methods, Student Work Load** | | | **No** | **Method** | | **Explanation** | | | | | | | **Hours** | | | |
| ***Time applied by instructor*** | | | | | | | | | | | | | |
| **1** | **Lecture** | | Lecturing and utilizing chalkboard/whiteboard. Sample questions and answers to strengthen learning. In class exams. | | | | | | | 2hrs weekly | | | |
| **2** | **Interactive Lecture** | | The instructor stops and asks students questions and encourages them to answer. | | | | | | | 1hr weekly | | | |
| **3** | **Recitation** | | Problems and solutions are demonstrated on chalkboard/whiteboard. | | | | | | | 2hrs weekly | | | |
| **4** | **Laboratory** | | Conducting experiments in computer lab and writing reports. | | | | | | | 2hrs, 5 times in a semester | | | |
| **5** | **Practical** | |  | | | | | | |  | | | |
| **6** | **Field Work** | |  | | | | | | |  | | | |
| ***Time expected to be allocated by student*** | | | | | | | | | | | | | |
| **7** | **Project** | | The problem subject of the project is researched and a report along with a Microsoft Excel file are prepared. | | | | | | | 2hrs weekly | | | |
| **8** | **Homework** | | Answers of given questions are prepared at home. | | | | | | | 10hrs weekly | | | |
| **9** | **Pre-class Learning of Course Material** | | New subjects are learned by reading course notes before class. | | | | | | | 0.5hrs weekly | | | |
| **10** | **Review of Course Material** | | Review of the subjects before exams in order to prepare. | | | | | | | 1hr weekly | | | |
| **11** | **Studio** | | - | | | | | | | - | | | |
| **12** | **Office Hour** | | Asking questions to instructor or to the teaching assistant out of class hour. | | | | | | | 2hrs weekly | | | |
| **TOTAL** | | |  | | | | | | | | | | |
| **IV. PART** | | | | | | | | | | | | | | | | |
| **Instructor** | | | **Name** | | | Assist. Prof. Dr. Kamer Özgün | | | | | | | | | | |
| **E-mail** | | | [kamer.ozgun@antalya.edu.tr](mailto:kamer.ozgun@antalya.edu.tr) | | | | | | | | | | |
| **Phone Number** | | | *+90(242)2450346* | | | | | | | | | | |
| **Office Number** | | | *+90(242)2450346* | | | | | | | | | | |
| **Office Hours** | | |  | | | | | | | | | | |
| **Course Materials** | | | **Mandatory** | | | W.G. Sullivan, E. M. Wicks, C. P. Koelling, “Engineering Economy”, 16th ed., Pearson, 2015 | | | | | | | | | | |
| **Recommended** | | | L. Blank, A. Tarquin, “Engineering Economy”, 7th Edition, Irwin/McGraw-Hill, 2012. | | | | | | | | | | |
| **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 for of scholastic dishonesty is a serious academic violation and will result in a disciplinary action. | | | | | | | | | | |
| **Students with Disabilities** | | | Reasonable accommodations are made for students with verifiable disabilities. | | | | | | | | | | |
| **Safety Issues** | | | Safety of the classroom, the students and the instructor are maintained by the university policies and regulations. | | | | | | | | | | |
| **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. | | | | | | | | | | |

