**İTÜ**

**DERS programı FORMU**

**(Course syllabus ForM)**

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| **Course Name** | | | | | | |
| Senior Design Project | | | | | | |
| **Code** | **Semester** | **Local Credits** | **ECTS Credits** | **Course Implementation, Hours/Week** | | |
| **Theoretical** | **Tutorial** | **Laboratory** |
| TEK 4902E | 8 | 4 | 9 | 1 | 6 | 0 |
| **Department/Program** | Textile Engineering/ Textile Engineering | | | | | |
| **Course Type** | Compulsory | | **Course Language** | English | | |
| **Course Prerequisites** | For senior students only | | | | | |
| **Course Category**  **by Content, %** | **Basic Sciences** | **Engineering Science** | | **Engineering Design** | **General Education** | |
|  |  | | 100 |  | |
| **Course Description** | Continuation of TEK492E . Design of system, process or product built, refined, tested, and demonstrated. Final prototype is shown to meet initial specifications at final design review presentation. Prerequisite: TEK492E | | | | | |
| **Course Objectives** | 1.To provide the opportunity for the students to gain experience on all aspects and phases of design within the framework of an engineering problem,  2.To develop the creativity of the students and promote teamwork,  3.To help the students develop professionally and ethically,  4.To bring the students in improved oral and written communication skills. | | | | | |
| **Course Learning Outcomes** | At the end of this project, the students are expected to demonstrate:  I.Knowledge and experience on design methodology  II.Experience gained on;   * Concept selection and improvement * Reaching solution * Result presentation   through the open-ended design project conducted.  III.Teamwork experience gained by working in groups of 2-4 students.  IV.Consciousness on professional ethics | | | | | |
| **Textbook** | No textbook is required or recommended; however, use of engineering handbooks is encouraged | | | | | |
| **Other References** | G.E. Dieter, “Engineering Design”3.ed.,McGraw Hill, 1999.  K.T. Ulrich, S.D. Eppinger, “Product Design and Development”, McGraw Hill, 1995.  J.Wilson, “ Handbook of Textile Design”, Woodhead Publishing L.,2001.  B.J.Collier, “Understanding Textiles”, Prentice Hall PTR,2000.  “The Design Logic of Textile Products”, Textile Progress, Vo.27, No.3, The Textile Institute, | | | | | |
| **Homework & Projects** | A design project covering the whole semester will be conducted. The project work will be performed in teams, and every team will have a project topic and adviser (faculty or instructor) assigned. The students will be given the chance to form their teams, and select their own project topics as well as advisers. | | | | | |
| **Laboratory work** |  | | | | | |
| **Computer Use** | Computers will be used in preparing the project report, performing the necessary design calculations, making technical drawings and presenting the whole work. | | | | | |
| **Other Activities** | By the end of the semester, the adviser will evaluate the project report or file and decide if the project is satisfactorily complete for the final oral presentation. After the approval of the project, three copies of the project report will be submitted to the Department until the beginning day of the final exams. The report is evaluated and graded as a team activity.  The final oral presentations of the satisfactorily completed projects are performed in front of a jury formed of Department members and also open to other faculty, visitors and students. The representatives of the teams will make the presentations and all the team members will be ready to reply the questions of the jury. The jury including the adviser will make the grading for each student.  Other requirements:  -produce a preliminary design  -conduct quantitative analysis, simulation, and preliminary lab testing that indicates, that the proposed design concept is feasible.  -write and submit a comprehensive written report documenting the design and analysis.  -regular meetings with the faculty advisor, industry representatives, timely submission of progress reports, and informal and formal presentation of the design, including a major design presentation at the end of the semester and submission of final written report, oral presentation, and demonstration. | | | | | |
| **Assessment Criteria** | **Activities** | | **Quantity** | | **Effects on Grading, %** | |
| **Midterm Exams** | |  | |  | |
| **Quizzes** | |  | |  | |
| **Homework** | |  | |  | |
| **Projects** | |  | |  | |
| **Term Paper/Project** | |  | |  | |
| **Laboratory Work** | |  | |  | |
| **Other Activities** | |  | |  | |
| **Final Project Presentation** | | 1 | | 100 | |

**Relationship between the Course and TEXTILE Engineering Curriculum**

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|  | **Student outcomes** | **Level of Contribution** | | |
| **1** | **2** | **3** |
| **1** | An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics |  | x |  |
| **2** | an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors |  |  | x |
| **3** | an ability to communicate effectively with a range of audiences |  |  | x |
| **4** | an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts |  | x |  |
| **5** | an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives |  |  | x |
| **6** | an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions |  |  | x |
| **7** | an ability to acquire and apply new knowledge as needed, using appropriate learning strategies |  |  | x |
| 1: Little, 2. Partial, 3. Full | | | | |

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| *Düzenleyen (Prepared by)* | Tarih (Date) | İmza (Signature) |