

## DEPARTMENT OF ENERGY SCIENCE AND TECHNOLOGY COURSE SYLLABUS

| Course Details                    |  |                                  |  |  |               |   |         |       |          |  |
|-----------------------------------|--|----------------------------------|--|--|---------------|---|---------|-------|----------|--|
| Code                              |  |                                  |  |  | Academic Year |   |         | Seme  | Semester |  |
| EBT402                            |  |                                  |  |  | 4             |   |         | 8     |          |  |
| Title                             |  |                                  |  |  | Т             | Α | L       | ECTS  |          |  |
| Project II (Bachelor Thesis)      |  |                                  |  |  | 0             | 6 | 0       | 10    |          |  |
|                                   |  |                                  |  |  |               |   |         |       |          |  |
| Language                          | German   |                                  |  |  |               |   |         |       |          |  |
| Level                             | Undergraduate  | Undergraduate X Graduate         |  |  |               |   | Postgra | duate |          |  |
| Department / Program              | Energy Science and Te  | Energy Science and Technology    |  |  |               |   |         |       |          |  |
| Forms of Teaching and<br>Learning | Face-to-face   | Face-to-face                     |  |  |               |   |         |       |          |  |
| Course Type                       | Compulsory   | x                                |  |  | Elective      |   |         |       |          |  |
| Objectives                        | It aims to equip students with the ability to analyze the problem/system they are working<br>on and develop solutions. It aims to enable students to conduct an individual study that will<br>provide them with experience for their careers after graduation. It aims to help students<br>express themselves more effectively, both orally and in writing, by enabling them to express<br>their own work effectively. |                                  |  |  |               |   |         |       |          |  |
| Content                           | It addresses the student's ability to analyze the problem/system they are dealing with in the light of theoretical knowledge and put it into practice. It includes the student's ability to design feasible solution proposals.  |                                  |  |  |               |   |         |       |          |  |
| Prerequisites                     | None   |                                  |  |  |               |   |         |       |          |  |
| Coordinator                       | Dr. Meltem KARAİSMAİLOĞLU ELİBOL   |                                  |  |  |               |   |         |       |          |  |
| Lecturer(s)                       | Dr. Meltem KARAİSM   | Dr. Meltem KARAİSMAİLOĞLU ELİBOL |  |  |               |   |         |       |          |  |
| Assistant(s)                      | None   |                                  |  |  |               |   |         |       |          |  |
| Work Placement                    | None   |                                  |  |  |               |   |         |       |          |  |
| Recommended or Required Reading   |  |                                  |  |  |               |   |         |       |          |  |
| Books / Lecture Notes             | Lecture notes  |                                  |  |  |               |   |         |       |          |  |
| Other Sources                     | None   |                                  |  |  |               |   |         |       |          |  |
| Additional Course Material        |  |                                  |  |  |               |   |         |       |          |  |
| Documents                         |  |                                  |  |  |               |   |         |       |          |  |
| Assignments                       | 1 Project  |                                  |  |  |               |   |         |       |          |  |
| Exams                             |  |                                  |  |  |               |   |         |       |          |  |
| Course Composition                |  |                                  |  |  |               |   |         |       |          |  |
| Mathematics and Basic<br>Sciences | - %  |                                  |  |  |               |   |         |       |          |  |
| Engineering                       | 30 %   |                                  |  |  |               |   |         |       |          |  |



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| Engineering Design   | -                         | %                                  |  |  |  |  |  |
|--|---------------------------|------------------------------------|--|--|--|--|--|
| Social Sciences  |                           | %                                  |  |  |  |  |  |
| Educational Sciences   | 20                        | %                                  |  |  |  |  |  |
| Natural Sciences   | 30                        | %                                  |  |  |  |  |  |
| Health Sciences  | -                         | %                                  |  |  |  |  |  |
| Expert Knowledge   | 20                        | %                                  |  |  |  |  |  |
| Assessment   |                           |                                    |  |  |  |  |  |
|  |                           |                                    |  |  |  |  |  |
| Activity   | Count                     | Percentage (%)                     |  |  |  |  |  |
| Activity<br>Midterm Exam   | Count<br>-                | Percentage (%)                     |  |  |  |  |  |
| Activity<br>Midterm Exam<br>Quiz   | Count<br>-<br>-           | Percentage (%)<br>-<br>-           |  |  |  |  |  |
| Activity<br>Midterm Exam<br>Quiz<br>Assignments  | Count<br>-<br>-<br>-      | Percentage (%)<br>-<br>-<br>-      |  |  |  |  |  |
| Activity<br>Midterm Exam<br>Quiz<br>Assignments<br>Attendance                            | Count<br>-<br>-<br>-<br>- | Percentage (%)<br>-<br>-<br>-<br>- |  |  |  |  |  |
| Activity<br>Midterm Exam<br>Quiz<br>Assignments<br>Attendance<br>Recitations             | Count                     | Percentage (%)                     |  |  |  |  |  |
| Activity<br>Midterm Exam<br>Quiz<br>Assignments<br>Attendance<br>Recitations<br>Projects | Count                     | Percentage (%) 100                 |  |  |  |  |  |

Total 100

| ECTS Points and Work Load             |       |          |                   |  |  |  |  |
|---------------------------------------|-------|----------|-------------------|--|--|--|--|
| Activity                              | Count | Duration | Work Load (Hours) |  |  |  |  |
| Lectures                              | 14    | 1        | 14                |  |  |  |  |
| Self-Study                            | 14    | 10       | 140               |  |  |  |  |
| Assignments                           | -     | -        | -                 |  |  |  |  |
| Presentation / Seminar<br>Preparation | -     | -        | -                 |  |  |  |  |
| Midterm Exam                          | -     | -        | -                 |  |  |  |  |
| Recitations                           | 1     | 50       | 50                |  |  |  |  |
| Laboratory                            | -     | -        | -                 |  |  |  |  |
| Projects                              | 1     | 90       | 90                |  |  |  |  |
| Final Exam                            | -     | -        | -                 |  |  |  |  |
|                                       | 294   |          |                   |  |  |  |  |
|                                       | 10    |          |                   |  |  |  |  |
| Learning Outcomes                     |       |          |                   |  |  |  |  |

| 1 | Analyzing a current situation to identify a problem and conduct its analysis   |
|---|--|
| 2 | Developing applicable recommendations and/or solution methods for the identified problem in light of theoretical knowledge |
| 3 | Gaining the ability to apply the developed solution method to the existing problem and evaluate the results                |
| 4 | Learning to express oneself by reporting and presenting the developed method   |
| 5 | Learning to defend the thought put forward while presenting the results of the developed study                             |



## DEPARTMENT OF ENERGY SCIENCE AND TECHNOLOGY **COURSE SYLLABUS**

| Weekly Conter | it   |
|---------------|--|
| 1             | Examination of selected study topics from the application areas of energy science and selection of project subject (Product Development / R&D, Material and Manufacturing Process Development, Automation, Manufacturing / Production Planning, Assembly, Maintenance-Repair, Project Planning, Design and Analysis, Testing and Verification, Quality Control and Quality Management) |
| 2             | Examination of selected study topics from the application areas of energy science and selection of project subject (Product Development / R&D, Material and Manufacturing Process Development, Automation, Manufacturing / Production Planning, Assembly, Maintenance-Repair, Project Planning, Design and Analysis, Testing and Verification, Quality Control and Quality Management) |
| 3             | Identification of necessary tools and formulation of solution alternatives to achieve the goal   |
| 4             | Identification of necessary tools and formulation of solution alternatives to achieve the goal   |
| 5             | Identification of necessary tools and formulation of solution alternatives to achieve the goal   |
| 6             | Evaluation of alternatives and finding solutions using relevant data   |
| 7             | Evaluation of alternatives and finding solutions using relevant data   |
| 8             | Implementation of the solution (optional)  |
| 9             | Implementation of the solution (optional)  |
| 10            | Implementation of the solution (optional)  |
| 11            | Discussion of the global, economic, social, and environmental impacts of the results and solutions   |
| 12            | Discussion of the global, economic, social, and environmental impacts of the results and solutions   |
| 13            | Reporting of the study and findings  |
| 14            | Presentation of the study and findings   |
| 15            | Project submission   |

| Contribution of Learning Outcomes to Program Objectives (1-5)                      |    |    |    |    |    |    |    |    |    |
|--|----|----|----|----|----|----|----|----|----|
|  | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 |
| 1  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| 2  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| 3  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| 4  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| Contribution Level 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High |    |    |    |    |    |    |    |    |    |
|  |    |    |    |    |    |    |    |    |    |
| Compiled by:         Dr. Meltem KARAİSMAİLOĞLU ELİBOL, Dr. Anıl Can DUMAN          |    |    |    |    |    |    |    |    |    |
| Date of Compilation: 13.04.2024  |    |    |    |    |    |    |    |    |    |