

## 1. Course Description

| COURSE DESCRIPTION FORM                                                                                                                     |                                                                                                                                                                                                                                                                                                                                     |          |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------|
| Course Code and Title                                                                                                                       | CHE491 GRADUATION PROJECT (SE)                                                                                                                                                                                                                                                                                                      |          |                        |
| Course Semester                                                                                                                             | 7                                                                                                                                                                                                                                                                                                                                   |          |                        |
| Catalog Description (Content) of the Course                                                                                                 | Study on a project, which requires synthesis of knowledge gained in the chemical engineering program.                                                                                                                                                                                                                               |          |                        |
| Main Textbook                                                                                                                               | Periodicals, Library facilities, Web sources                                                                                                                                                                                                                                                                                        |          |                        |
| Supporting Textbooks                                                                                                                        | Contact with experts                                                                                                                                                                                                                                                                                                                |          |                        |
| Course Credit (ECTS)                                                                                                                        | 2                                                                                                                                                                                                                                                                                                                                   |          |                        |
| Prerequisites of the Course<br>(Compulsory attendance should be indicated here.)                                                            | Those who will graduate within three semesters. There is 80% attendance requirement.                                                                                                                                                                                                                                                |          |                        |
| Type of the Course                                                                                                                          | Compulsory                                                                                                                                                                                                                                                                                                                          |          |                        |
| Instruction Language of the Course                                                                                                          | English                                                                                                                                                                                                                                                                                                                             |          |                        |
| Object and Target of the Course                                                                                                             | To teach students the basics of an original research, To gain basic steps and methods in a research, to provide the basis for theoretical / experimental studies to be carried out in KM492.                                                                                                                                        |          |                        |
| Learning Outcomes of the Course                                                                                                             | 1. Ability to access information on any research<br>2. Recognition of the need for lifelong learning<br>3. Ability to access information, to follow developments in science and technology, and to continue to educate him/herself.<br>4. Understanding written documents (articles, reports, etc.) effective report writing skills |          |                        |
| Mode of Delivery                                                                                                                            | Face to face education                                                                                                                                                                                                                                                                                                              |          |                        |
| Weekly Schedule of the Course                                                                                                               | <b>1-2. Week :</b> Project selection<br><b>3-4. Week :</b> The creation of theoretical basis<br><b>5-9. Week :</b> Literature survey<br><b>10-11. Week:</b> Evaluation and plan of Research Project (KM 492).<br><b>12-14. Week :</b> Report Writing                                                                                |          |                        |
| <b>Educative Activities</b><br><i>(Credit will be determined based on the time given for these activities. Should be filled carefully.)</i> | Practicing Hours of Course Per Week<br>Reading<br>Searching in Internet and Library<br>Preparing Reports                                                                                                                                                                                                                            |          |                        |
| Assessment Criteria                                                                                                                         |                                                                                                                                                                                                                                                                                                                                     | Quantity | Total Contribution (%) |
|                                                                                                                                             | Midterm                                                                                                                                                                                                                                                                                                                             | 0        | 0                      |
|                                                                                                                                             | Homework                                                                                                                                                                                                                                                                                                                            | 0        | 0                      |
|                                                                                                                                             | Assignment                                                                                                                                                                                                                                                                                                                          | 0        | 0                      |
|                                                                                                                                             | Projects                                                                                                                                                                                                                                                                                                                            | 1        | 100                    |
|                                                                                                                                             | Practice                                                                                                                                                                                                                                                                                                                            | 0        | 0                      |
|                                                                                                                                             | Quiz                                                                                                                                                                                                                                                                                                                                | 0        | 0                      |
|                                                                                                                                             | Contribution of In-term Studies to Overall Grade                                                                                                                                                                                                                                                                                    |          | 100                    |
|                                                                                                                                             | Contribution of Final Examination to                                                                                                                                                                                                                                                                                                | 0        | 0                      |

|                                  |                                            |                                                                                                                                                                                                                       |                  |                           |                            |   |   |   |   |
|----------------------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------|----------------------------|---|---|---|---|
|                                  | Overall Grade                              |                                                                                                                                                                                                                       |                  |                           |                            |   |   |   |   |
|                                  | Attendance                                 |                                                                                                                                                                                                                       |                  |                           |                            |   |   |   |   |
| Workload of the Course           | Activity                                   |                                                                                                                                                                                                                       | Total Week Count | Weekly Duration (in hour) | Total Workload in Semester |   |   |   |   |
|                                  | Theoretical Study Hours of Course Per Week |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Practicing Hours of Course Per Week        |                                                                                                                                                                                                                       | 14               | 2                         | 28                         |   |   |   |   |
|                                  | Reading                                    |                                                                                                                                                                                                                       | 6                | 2                         | 12                         |   |   |   |   |
|                                  | Searching in Internet and Library          |                                                                                                                                                                                                                       | 6                | 2                         | 12                         |   |   |   |   |
|                                  | Designing and Applying Materials           |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Preparing Reports                          |                                                                                                                                                                                                                       | 3                | 2                         | 6                          |   |   |   |   |
|                                  | Preparing Presentation                     |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Presentation                               |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Mid-Term and Studying for Mid-Term         |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Final and Studying for Final               |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Other                                      |                                                                                                                                                                                                                       | 0                | 0                         | 0                          |   |   |   |   |
|                                  | Total work load                            |                                                                                                                                                                                                                       |                  |                           | 58                         |   |   |   |   |
|                                  | Total work load/25                         |                                                                                                                                                                                                                       |                  |                           | 2.32                       |   |   |   |   |
|                                  | ECTS of the course                         |                                                                                                                                                                                                                       |                  |                           | 2                          |   |   |   |   |
| Course's Contribution To Program | No                                         | Program Learning Outcomes                                                                                                                                                                                             |                  |                           | 1                          | 2 | 3 | 4 | 5 |
|                                  | 1                                          | Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems. |                  |                           |                            |   | X |   |   |
|                                  | 2                                          | Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.                                                            |                  |                           |                            |   | X |   |   |
|                                  | 3                                          | Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.      |                  |                           | X                          |   |   |   |   |
|                                  | 4                                          | Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.                                                               |                  |                           |                            |   | X |   |   |
|                                  | 5                                          | Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.                                                                                         |                  |                           |                            |   | X |   |   |
|                                  | 6                                          | Ability to work efficiently in intra-disciplinary teams.                                                                                                                                                              |                  |                           | X                          |   |   |   |   |
|                                  | 7                                          | Ability to work efficiently in multi-disciplinary teams;                                                                                                                                                              |                  |                           | X                          |   |   |   |   |
|                                  | 8                                          | Ability to work individually.                                                                                                                                                                                         |                  |                           |                            |   |   |   | X |
|                                  | 9                                          | Ability to communicate effectively in                                                                                                                                                                                 |                  |                           |                            |   |   | X |   |

|                                                    |    |                                                                                                                                                                         |   |  |   |  |   |
|----------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|--|---|--|---|
|                                                    |    | Turkish/English, both orally and in writing; Ability to write effective reports and comprehend written reports, make effective presentations,                           |   |  |   |  |   |
|                                                    | 10 | prepare design and production reports, give and receive clear and intelligible instructions.                                                                            | X |  |   |  |   |
|                                                    | 11 | Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. |   |  |   |  | X |
|                                                    | 12 | Awareness of professional and ethical responsibility.                                                                                                                   |   |  | X |  |   |
|                                                    | 13 | Information about business life practices such as project management, risk management, and change management.                                                           | X |  |   |  |   |
|                                                    | 14 | Information about awareness of entrepreneurship, innovation, and sustainable development.                                                                               |   |  | X |  |   |
|                                                    | 15 | Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.                                    |   |  | X |  |   |
|                                                    | 16 | Knowledge about awareness of the legal consequences of engineering solutions.                                                                                           | X |  |   |  |   |
|                                                    | 17 | Knowledge on standards used in engineering practice.                                                                                                                    | X |  |   |  |   |
| <b>Name of Lecturer(s) and Contact Information</b> |    | Head of Department : kimyamuhendisligi@gazi.edu.tr                                                                                                                      |   |  |   |  |   |