**Chart 1.** “Courses – Program Output” relationship matrix (1st and 2nd Grades)

|  |  |
| --- | --- |
| **Course name** | **EFFECTIVE CREDIT OF THE COURSE TO PO** |
| **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| General Chemistry I | X | X |  | X |  |  | X | X | X |  |  |  |
| General Chemistry Laboratory I | X | X | X | X | X | X |  | X | X | X |  |  |
| General Physics I | X | X | X | X | X |  | X |  | X | X |  |  |
| General Physics Laboratory I | X | X | X | X | X | X | X | X | X | X | X | X |
| General Mathematics I | X | X | X | X | X | X | X | X |  |  |  |  |
| Ataturk's Principles and History of Revolution I |  |  |  |  |  | X | X | X | X |  |  |  |
| Turkish Language I |  |  |  |  |  | X | X | X |  |  |  |  |
| English I |  |  |  |  |  | X | X | X |  |  |  |  |
| Occupational Health and Safety I | X | X |  | X |  |  | X | X | X |  |  |  |
| Social elective I |  |  |  |  |  |  |  |  |  |  |  |  |
| General Chemistry II | X | X |  | X |  |  | X | X | X |  |  |  |
| General Chemistry Laboratory II | X | X | X | X | X | X |  | X | X | X |  |  |
| General Physics II | X | X | X | X | X |  | X |  | X | X |  |  |
| General Physics Laboratory II | X | X | X | X | X | X | X | X | X | X | X | X |
| General Mathematics II | X | X | X | X | X | X | X | X | X |  |  |  |
| Ataturk's Principles and History of Revolution II |  |  |  |  |  | X | X | X | X |  |  |  |
| Turkish Language II |  |  |  |  |  | X | X | X |  |  |  |  |
| English II |  |  |  |  |  | X | X | X |  |  |  |  |
| Occupational Health and Safety II | X | X |  | X |  |  | X | X | X |  |  |  |
| Social Elective II |  |  |  |  |  |  |  |  |  |  |  |  |
| Inorganic Chemistry I | X | X | X | X |  |  | X |  |  | X |  |  |
| Organic Chemistry I | X | X |  | X |  |  |  |  |  |  |  |  |
| Organic Chemistry Laboratory I | X | X | X | X | X |  | X | X | X | X |  |  |
| Analytical Chemistry I | X | X | X | X | X |  | X | X | X | X |  |  |
| Analytical Chemistry Laboratory I | X | X | X | X | X |  | X | X | X | X |  |  |
| Mathematical Methods in Chemistry | X | X |  | X | X |  |  |  |  |  |  |  |
| Within-Field Elective I |  |
| Computer Applied Chemistry | X |  |  | X |  |  | X |  |  | X |  |  |
| Bioenergy Technology | X | X | X | X | X |  | X |  |  |  |  |  |
| Solution Chemistry | X | X | X | X | X |  |  | X | X |  |  |  |
| Chemistry of Metals | X |  | X | X |  |  | X |  |  | X |  |  |
| Qualitative Analysis in Organic Chemistry | X | X | X | X | X | X | X | X | X | X |  |  |
| Polymer Chemistry | X |  |  |  | X |  |  |  |  |  |  |  |
| Non-Field Elective I |  |
| Natural products | X | X | X | X | X | X | X | X |  |  |  |  |
| Energy Storage Systems | X | X | X | X |  |  | X | X | X | X |  |  |
| Inorganic Chemistry II | X | X | X | X |  |  | X |  |  | X |  |  |
| Organic Chemistry II | X | X |  | X |  |  |  |  |  |  |  |  |
| Organic Chemistry Laboratory II | X | X | X | X | X |  | X | X | X | X |  |  |
| Analytical Chemistry II | X | X | X | X | X |  | X | X | X | X |  |  |
| Analytical Chemistry Laboratory II | X | X | X | X | X |  | X | X | X | X |  |  |
| In-Field Elective II |  |
| Chemistry of Nonmetals | X | X | X | X |  |  | X |  | X | X |  |  |
| Aroma Compounds | X | X | X | X | X | X | X | X | X | X |  |  |
| General Organic Reactions | X | X |  | X |  |  |  |  |  |  |  |  |
| Statistical Methods in Chemistry | X | X | X | X | X |  | X | X | X | X |  |  |
| Corrosion Chemistry | X | X | X | X |  |  |  |  | X |  |  |  |
| Organonitrogen Compounds | X | X | X | X | X | X | X | X | X | X |  |  |
| Out of Field Elective II |  |
| Food Chemistry | X | X | X | X | X | X | X | X | X | X |  |  |
| Chemistry in Daily Life | X | X | X | X | X | X | X | X | X | X |  |  |

**Chart 2.** “Courses – Program Output” relationship matrix (3rd and 4th Grade)

|  |  |
| --- | --- |
| **Ders Adı** | **EFFECTIVE CREDIT OF THE COURSE TO PO** |
| **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** |
| Physical Chemistry I | X | X |  | X | X |  |  |  |  |  |
| Instrumental Analysis I | X | X | X | X | X |  | X | X | X | X |
| Biochemistry I | X | X | X | X | X |  | X | X |  |  |
| Biochemistry Laboratory I | X | X | X | X | X | X | X | X | X | X |
| Inorganic Chemistry Laboratory I | X | X | X | X | X |  | X |  | X | X |
| Physical Chemistry Laboratory I | X | X | X | X | X | X | X | X | X | X |
| In-Field Elective III | X | X | X | X | X |  | X | X | X | X |
| Physical Chemistry II | X | X |  | X | X |  |  |  |  |  |
| Physical Chemistry Laboratory II | X | X | X | X | X | X | X | X | X | X |
| Biochemistry II | X | X | X | X | X |  | X | X |  |  |
| Biochemistry Laboratory II | X | X | X | X | X | X | X | X | X | X |
| Instrumental Analysis II | X | X | X | X | X | X | X | X | X | X |
| Inorganic Chemistry Laboratory II | X | X | X | X | X |  | X |  | X | X |
| Field Elective IV | X | X | X | X | X |  | X | X |  | X |
| Industrial Chemistry | X | X | X | X | X |  | X | X |  |  |
| Industrial Chemistry Laboratory | X | X | X | X | X | X | X | X | X | X |
| Instrumental Analysis Laboratory | X | X | X | X | X | X | X | X | X | X |
| Field Elective V | X | X | X | X | X |  | X | X | X |  |
| Field Elective VI | X | X | X | X | X | X | X | X | X | X |
| Basic Field Elective | X | X | X | X | X |  | X |  | X | X |
| Chemistry Applications | X | X | X | X | X | X | X | X | X |  |
| Workplace Training | X | X | X | X | X |  | X | X | X | X |
| Workplace Application | X | X | X | X | X | X | X | X | X | X |