

# PHYSICAL CHEMISTRY OF ATOM AND MOLECULAR SYSTEMS

|      |                                                         |                                                                                                                                                                                                                              |                                                                                                    |
|------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1    | Course Title:                                           | PHYSICAL CHEMISTRY OF ATOM AND MOLECULAR SYSTEMS                                                                                                                                                                             |                                                                                                    |
| 2    | Course Code:                                            | KIM5002                                                                                                                                                                                                                      |                                                                                                    |
| 3    | Type of Course:                                         | Compulsory                                                                                                                                                                                                                   |                                                                                                    |
| 4    | Level of Course:                                        | Second Cycle                                                                                                                                                                                                                 |                                                                                                    |
| 5    | Year of Study:                                          | 1                                                                                                                                                                                                                            |                                                                                                    |
| 6    | Semester:                                               | 2                                                                                                                                                                                                                            |                                                                                                    |
| 7    | ECTS Credits Allocated:                                 | 6.00                                                                                                                                                                                                                         |                                                                                                    |
| 8    | Theoretical (hour/week):                                | 3.00                                                                                                                                                                                                                         |                                                                                                    |
| 9    | Practice (hour/week):                                   | 0.00                                                                                                                                                                                                                         |                                                                                                    |
| 10   | Laboratory (hour/week):                                 | 0                                                                                                                                                                                                                            |                                                                                                    |
| 11   | Prerequisites:                                          | None                                                                                                                                                                                                                         |                                                                                                    |
| 12   | Language:                                               | Turkish                                                                                                                                                                                                                      |                                                                                                    |
| 13   | Mode of Delivery:                                       | Face to face                                                                                                                                                                                                                 |                                                                                                    |
| 14   | Course Coordinator:                                     | Prof. Dr. BEYHAN ERDEM                                                                                                                                                                                                       |                                                                                                    |
| 15   | Course Lecturers:                                       |                                                                                                                                                                                                                              |                                                                                                    |
| 16   | Contact information of the Course Coordinator:          | Prof. Dr. Beyhan Erdem<br>gbeyhan@uludag.edu.tr<br>0224 2942864                                                                                                                                                              |                                                                                                    |
| 17   | Website:                                                |                                                                                                                                                                                                                              |                                                                                                    |
| 18   | Objective of the Course:                                | Have students comprehend all the physicochemical properties of atoms and molecular systems are related to present properties and analysing the properties make students understand every material behavior easily in detail. |                                                                                                    |
| 19   | Contribution of the Course to Professional Development: | Understanding the basic topics of Physical Chemistry of Atom and Molecular Systems course, associating with current issues and explaining.                                                                                   |                                                                                                    |
| 20   | Learning Outcomes:                                      |                                                                                                                                                                                                                              |                                                                                                    |
|      |                                                         | 1                                                                                                                                                                                                                            | Comprehending physicochemical properties of atoms and molecules are related to present properties. |
|      |                                                         | 2                                                                                                                                                                                                                            | Understanding the behavior of materials for every chemical environment.                            |
|      |                                                         | 3                                                                                                                                                                                                                            | Comprehending the incapability of classical theories to understand the nature of materials.        |
|      |                                                         | 4                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 5                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 6                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 7                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 8                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 9                                                                                                                                                                                                                            |                                                                                                    |
|      |                                                         | 10                                                                                                                                                                                                                           |                                                                                                    |
| 21   | Course Content:                                         |                                                                                                                                                                                                                              |                                                                                                    |
|      |                                                         | <b>Course Content:</b>                                                                                                                                                                                                       |                                                                                                    |
| Week | Theoretical                                             | Practice                                                                                                                                                                                                                     |                                                                                                    |
| 1    | Incapability of classical theories                      |                                                                                                                                                                                                                              |                                                                                                    |
| 2    | Compton Effect                                          |                                                                                                                                                                                                                              |                                                                                                    |
| 3    | Photoelectric effect                                    |                                                                                                                                                                                                                              |                                                                                                    |



|                            |                   |              |                 |               |                    |
|----------------------------|-------------------|--------------|-----------------|---------------|--------------------|
| <b>Contribution Level:</b> | <b>1 very low</b> | <b>2 low</b> | <b>3 Medium</b> | <b>4 High</b> | <b>5 Very High</b> |
|----------------------------|-------------------|--------------|-----------------|---------------|--------------------|