EK: 4/7

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| **logosbULUDAĞ UNIVERSITY****GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES****2017-2018 ACADEMIC YEAR COURSE PLAN** |
| **DEPARTMENT OF** | DEPARTMENT OF CHEMISTRY  |
| **DEPARTMENT / PROGRAM** | DOCTORAL PROGRAM |
| **COURSE STAGE** | **I. TERM / FALL** | **II. TERM / SPRING** |
| **Code** | **Course Title** | **Type** | **T** | **U** | **L** | **Credit** | **ECTS** | **Code** | **Course Title** | **Type** | **T** | **U** | **L** | **Credit** | **ECTS** |
| CHEM 6191 | PHD THESIS I | Z | 0 | 1 | 0 | 0 | 1 | CHEM6172 | SEMINAR  | Z | 0 | 2 | 0 | 0 | 4 |
|  |  |  |  |  |  |  |  | CHEM 6192 | PHD THESIS II | Z | 0 | 1 | 0 | 0 | 1 |
|  |  |  |  |  |  |  |  | FEN6000 | RESEARCH TECHNIQUES and PUBLICATION ETHICS | Z | 2 | 0 | 0 | 2 | 2 |
| CHEM6181 | ADVANCED TOPICS IN PHD THESIS I | S | 4 | 0 | 0 | 0 | 5 | CHEM6182 | ADVANCED TOPİCS IN PHD THESIS II | S | 4 | 0 | 0 | 0 | 5 |
| CHEM6003 | PRACTICES OF GROUP THEORY IN MOLECULAR SPECTROSCOPY | S | 3 | 0 | 0 | 3 | 6 | CHEM6002 | FACTOR ANALYSISIN CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6005 | DESIGN OF MOLECULE IN ORGANIC | S | 3 | 0 | 0 | 3 | 6 | CHEM6004 | MICROMETHODSIN ANALYTICAL CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6007 | LIQUID CHROMATOGRAPHY | S | 3 | 0 | 0 | 3 | 6 | CHEM6006 | COUPLED METHODS IN CHROMATOGRAPHY  | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6009 | ACTIVATED CARBON ADSORPTION AND APPLICATIONS | S | 3 | 0 | 0 | 3 | 6 | CHEM6008 | CHEMOMETRIC METHODS | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6011 | ANALYTICAL TECHNIQUES IN VOLTAMMETRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6010 | BIOANALYTICAL CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6013 | ANALYTICAL CHEMISTRY OF COMPLEX MATRICES | S | 3 | 0 | 0 | 3 | 6 | CHEM6012 | ASYMMETRIC SYNTHESIS IN ORGANIC CHEMİSTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6015 | ATOMIC SPECTROSCOPIC METHODS | S | 3 | 0 | 0 | 3 | 6 | CHEM6014 | NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY IN ORGANIC STRUCTURE IDENTIFICATION | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6017 | MECHANISMS OF MOLECULAR REARRANGEMENTS I | S | 3 | 0 | 0 | 3 | 6 | CHEM6016 | INTERFACESCIENCE II | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6019 | PRINCIPLES OF ORGANIC SYNTHESIS I | S | 3 | 0 | 0 | 3 | 6 | CHEM6018 | SOLID STATE CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6021 | CATALYSIS | S | 3 | 0 | 0 | 3 | 6 | CHEM6020 | ELECTROCHEMICALSENSORS | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6023 | CRYSTAL CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6022 | ADVANCED MATERIAL CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6025 | NATURAL ANTIOXIDANTS | S | 3 | 0 | 0 | 3 | 6 |  |  |  |  |  |  |  | 6 |
| CHEM6027 | MOLECULAR SYMMETRYAND APPLICATIONS | S | 3 | 0 | 0 | 3 | 6 | CHEM6024 | ADVANCEDBIOINORGANIC CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6029 | BORON CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6026 | REACTION MECHANISMSIN INORGANIC | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6031 | ADVANCED ORGANOMETALIC CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6028 | MOLECULAR RECOGNITION AND BIOMOLECULE COMPLEXES | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6035 | ION-EXCHANGERS AND THEIR APPLICATIONS | S | 3 | 0 | 0 | 3 | 6 | CHEM6030 | FRACTIONATION AND SPECIATION METHODS IN FOOD SAMPLES | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6037 | PROTEIN PURIFICATION AND CHARACTERIZATION | S | 3 | 0 | 0 | 3 | 6 | CHEM6032 | INORGANIC POLYMERS | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6039 | INTERFACESCIENCE I | S | 3 | 0 | 0 | 3 | 6 | CHEM 6034 | X-RAY CRYSTALLOGRAPHY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6041 | ADVANCEDPOLYMER SCIENCEAND TECHNOLOGYI | S | 3 | 0 | 0 | 3 | 6 | CHEM6036 | POLYMER KINETIC THEORIES | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6043 | OXIDATION MECHANISMS IN ORGANIC CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6038 | ADVANCEDPOLYMER SCIENCEAND TECHNOLOGY II | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6045 | QUALITY CONTROL IN ANALYTICAL CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 | CHEM6040 | MACROMOLECULAR CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6047 | ADVANCED COORDINATION CHEMISTRY  | S | 3 | 0 | 0 | 3 | 6 | CHEM6042 | STRUCTURE IDENTIFICATION IN ORGANIC CHEMISTRY | S | 3 | 0 | 0 | 3 | 6 |
| CHEM6049 | OPTICAL AND CHEMICAL SENSORS | S | 3 | 0 | 0 | 3 | 6 | CHEM6044 | MECHANISMS OF MOLECULAR REARRANGEMENTS II | S | 3 | 0 | 0 | 3 | 6 |
|  |  |  |  |  |  |  |  | CHEM6046 | PRINCIPLES OF ORGANIC SYNTHESIS II | S | 3 | 0 | 0 | 3 | 6 |
|  |  |  |  |  |  |  |  | CHEM6048 | CORROSION AND ITS ELECTROCHEMICAL BASICS | S | 3 | 0 | 0 | 3 | 6 |
|  |  |  |  |  |  |  |  | KIM6050 | OLED TECHNOLOGY | S | 3 | 0 | 0 | 3 | 6 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total Credits** | **12** | **30** | **Total Credits** | **11** | **30** |
| **STAGE THESIS** | **III. TERM / FALL** | **IV. TERM / SPRING** |
| CHEM6183 | ADVANCED TOPICS IN PHD THESIS III | Z | 4 | 0 | 0 | 0 | 5 | CHEM6184 | ADVANCED TOPICS IN PHD THESIS IV | Z | 4 | 0 | 0 | 0 | 5 |
| CHEM6193 | PHD THESIS III | Z | 0 | 1 | 0 | 0 | 15 | CHEM6194 | PHD THESIS IV  | Z | 0 | 1 | 0 | 0 | 25 |
| CHEM 6177 | PHD PROFICIENCY EXAMINATION | Z | 0 | 0 | 0 | 0 | 10 |  |  |  |  |  |  |  |  |
| **Total Credits** | **0** | **30** | **Total Credits** | **0** | **30** |
| **V. TERM / FALL** | **VI. TERM / SPRING** |
| CHEM6185 | ADVANCED TOPICS IN PHD THESIS V | Z | 4 | 0 | 0 | 0 | 5 | CHEM6186 | ADVANCED TOPICS IN PHD THESIS VI | Z | 4 | 0 | 0 | 0 | 5 |
| CHEM6195 | PHD THESIS V  | Z | 0 | 1 | 0 | 0 | 25 | CHEM6196 | PHD THESIS VI | Z | 0 | 1 | 0 | 0 | 25 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total Credits** | **0** | **30** | **Total Credits** | **0** | **30** |
| **VII. TERM / FALL** | **VIII. TERM / SPRING** |
| CHEM6187 | ADVANCED TOPICS IN PHD THESIS VII | Z | 4 | 0 | 0 | 0 | 5 | CHEM6188 | ADVANCED TOPICS IN PHD THESIS VIII | Z | 4 | 0 | 0 | 0 | 5 |
| CHEM6197 | PHD THESIS VII | Z | 0 | 1 | 0 | 0 | 25 | CHEM6198 | PHD THESIS VIII | Z | 0 | 1 | 0 | 0 | 25 |
| **Total Credits** | **0** | **30** | **Total Credits** | **0** | **30** |
| **TOTAL CREDITS: 23 - TOTAL ECTS: 240** |
| **Not:** Thestudent is expectedtotake a total of **3**credited **4(four)**selectivecourseseveryacademic term. Thestudent have the option of choosing one selective course from another department with the endorsement of the supervisor. \*Success in Ph.D. qualifying exam is a prerequisite. |