# TEMPLATE FOR COURSE SPECIFICATION

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| HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW |

**COURSE SPECIFICATION**

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| This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification. |

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| 1. Teaching Institution | **Al Nahrain University** |
| 2. University Department/Centre | **Department of Chemistry** |
| 3. Course title/code | **Inorganic chemistry- 211** |
| 4. Modes of Attendance offered | **Attendance through the Google Classroom platform (attendance of the theoretical course)** |
| 5. Semester/Year | **Semester ((courses)) (second stage) 2022-2023 first semester** |
| 6. Number of hours tuition (total) | **45 hours** |
| 7. Date of production/revision of this specification | 9/10/2022 |
| 8. Aims of the Course |
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| **1- Introducing students to the main basic concepts related to descriptive inorganic compounds****Formation.** |
| **2 - Focusing on the chemical and physical property of some group and how they are prepare**  |

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| 9· Learning Outcomes, Teaching ,Learning and Assessment Methode |

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| A- Cognitive goals . A1. **Introduce students to the basic concepts of some property group elements.**A2. **introduce to the property of compounds and its reactivity**. |
| B. The skills goals special to the course. B1. **practical skills**B2. **. Inorganic and inferential skills**B3. **Development skills** |
| Teaching and Learning Methods |
| **Providing students with the basics and additional topics related to thinking outcomes****Discussing the topics of the lesson that require thinking and analysis****- Raising a set of thinking questions during the lectures, which increases and motivates students to analyze and conclude****Giving students homework that requires self-explanations** |
| Assessment methods |
| **Oral exams for the previous lecture****Participation scores for competition questions related to the subject****Specific grades for homework****- Semester exams** |
| C. Affective and value goals. **C1. Enabling students to solve problems related to the intellectual framework of the lecture material****C2 - Enabling students to think intellectual questions from the lecture material****C3- Linking the lecture curriculum with practical applications, especially with our daily life** |
| Teaching and Learning Methods |
| **Providing students with the basics and additional topics related to thinking outcomes****Discussing the topics of the lesson that require thinking and analysis****- Raising a set of thinking questions during the lectures, which increases and motivates students to analyze and conclude****Giving students homework that requires self-explanations** |
| Assessment methods |
| **Oral exams for the previous lecture****Participation scores for competition questions related to the subject****Specific grades for homework****- Semester exams** |
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| D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)**D1. Providing students with the basics and additional topics related to the outputs of thinking****Discussing the topics of the lesson that require thinking and analysis****D2- Raising a set of thinking questions during the lectures, which increases and motivates students to analyze and conclude****Giving students homework that requires self-explanations** |

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| 10. Course Structure |
| Week | Hours | ILOs | Unit/Module or Topic Title | Teaching Method | Assessment Method |
| 1 | 2 | **Group(V) A elements** | **- General properties** **­­­­­­­ b- Electronic structure and oxidation states**  | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 2 | 2 | **Group(V) A elements** | **- Nitrogen:****­­­­­­­ c.1- Occurrence and properties** **­­­­­­­c.2- Preparation and uses of elemental nitrogen**  | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 3 | 2 | **Group(V) A elements** | **- Covalent compounds of nitrogen ; preparation , properties and uses. Compound of oxide. States -3,-2,-1,+1,+2,+3,+5** **­­­­­­­ c.4- Ionic compounds of nitrogen** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 4 | 2 | **Group(V) A elements** | **Photochemical Smog****­­­­­­­ d-Phosphorus****­­­­­­­ d.1- Occurrence and properties****­­­­­­­ d.2- The free element****­­­­­­­ d.3- Compounds of phosphorus** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 5 | 2 | **Group(V) A elements** | **Oxides of phosphorus****­­­­­­­ - Phosphoric acid and phosphates****­­­­­­­ - Polymeric phosphoric acids and their anions****­­­­­­­ - Phosphorus acid** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 6 | 2 |  | **Mid Exam** |  |  |
| 7 | 2 | **- Group III elements** | **- General properties****­­­­­­­ b- Electronic structure and oxidation state****­­­­­­­ c- Oxygen****­­­­­­­c.1- Preparation and uses** **­­­­­­­c.2- Ozone** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 8 | 2 |  | **Compounds of oxygen****­­­­­­­ - Ionic oxides****­­­­­­­ - Covalent oxides****­­­­­­­ - Peroxides and superoxides** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 9 | 2 |  | **Sulfur****­­­­­­­d.1- Occurrence and properties****- The free element****­­­­­­d.3- Compounds of sulfur****­­­­­­­ - Sulfur dioxide and sulfurous acid****­­­­­­­ - Sulfur trioxide and sulfuric acid** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 10 | 2 |  | **Acid rain****­­­­­­­ - Other compounds of sulfur****­­­­­­­e- Selenium , Tellurium and Polonium** **­­­­­­­ e.1- Properties****­­­­­­ e.2- Compounds and uses** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 11 | 2 |  | **Occurrence of halogens****­­­­­­­ b- Properties of the free elements** **­­­­­­­ c- Preparation of the free elements** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 12 | 2 |  | **Compounds of the halogen****­­­­­­­ d.1- Binary halides of metals****­­­­­­­ d.2- Hydrogen halides****­­­­­­­ d.3- Oxoacids and oxoanions****­­­­­­­ e- Other halogen compounds of the nonmetals** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 13 | 2 | **Group III elements** | **Electronic structure and properties****­­­­­­­ b- Preparation and properties of Xenon compounds** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |
| 14 | 2 | **Group III elements** | **Mid exam** | **Explanation of the article and****Use of illustrations** | **Short oral and written exams** |

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| 11. Infrastructure |
| 1. Books Required reading: | **1-** **Inorganic Chemistry James E. House** |
| 2. Main references (sources) | Catherine E. Housecroft and Alan G. Sharpe |
| A- Recommended books and references (scientific journals, reports…). |  |
| B-Electronic references, Internet sites… | Web site at www.books.elsevier.com |
| 12. The development of the curriculum plan |
| **Development and updating are carried out according to the information available from modern sources, in addition to developing illustrations to increase the student's understanding and awareness of the course material.** |

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