# 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 | |
| |  | | --- | | **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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