# 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 program specification. |

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| 1. Teaching Institution | Al‐Nahrain University |
| 2. University Department/Centre | Department of Chemistry |
| 3. Course title/code |  Inorganic Chem./CHEM 101 |
| 4. Modes of Attendance offered | Face to face |
| 5. Semester/Year | First year/ first semester / 2022-2023 |
| 6. Number of hours tuition (total) |  2 hours weekly |
| 7. Date of production/revision of this specification | 24/10/2022 |
| 8. Aims of the Course |
| 1. General view to periodic table and atomic structure
2. Quantum Theory and quantum number
3. Energy levels, orbitals and photoelectric effect
4. Groups 1 & 2, the Alkali Metals and the Alkaline Earth metals
5. Atoms, Molecules, Ions and ionic compounds
6. Ionization energy, Atomic Radii, Electron Affinity, electronegativity
7. Shielding effect, Dipole moment, Polarity, Hydrogen bonding, Melting point, Boiling point Solubility Orbital hybridization
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| 9· Learning Outcomes, Teaching ,Learning and Assessment Method |

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| 1. Cognitive goals.

A1. Teach students the principle of chemistryA2. Explain the atomic structures and its compoundsA3.Explain some of chemical phenomenaA4.Study the properties of some chemical elements |
| B. The skills goals special to the course. B1. Practical and laboratory skillsB2. Improvement skills, to improve student's mind and to let students think more about chemistryB3.Productive skills  |
| Teaching and Learning Methods |
|  Power point presentation, examples from books and internet  |
| Assessment methods |
| 1. Quizzes, oral exams and mid exams
2. Homework and answer questions during the lecture
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| C. Affective and value goals  C1. Connect chemistry with the everything surrounded with usC2. Know the principle of chemistry by improve student’s mind |
| Teaching and Learning Methods |
|  Power point presentation, examples from books and internet  |
| Assessment methods |
|  1. Quizzes, oral exams and mid exams
2. Homework and answer questions during the lecture

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| D. General and rehabilitative transferred skills(other skills relevant to employability and personal development)D1. Improve the student’s mind by how he or she can deal with chemicals and its usesD2. Teach students about hazardous chemicals in the lab and how can avoid any risk in the lab |

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| 10. Course Structure |
| Week | Hours | ILOs | Unit/Module or Topic Title | Teaching Method | Assessment Method |
| 1 | 2 | Inorganic chem. | Atomic Structure | Face to face | Quizzes/oral and mid exams |
| 2 | 2 | Inorganic chem. | Quantum Theory and quantum number | Face to face | Quizzes/oral and mid exams |
| 4 | 2 | Inorganic chem. | Energy levels, orbitals and photoelectric effect | Face to face | Quizzes/oral and mid exams |
| 6 | 2 | Inorganic chem. | Groups 1 & 2, the Alkali Metals and the Alkaline Earth metals | Face to face | Quizzes/oral and mid exams |
| 8 | 2 | Inorganic chem. | Atoms, Molecules, Ions and ionic compounds | Face to face | Quizzes/oral and mid exams |
| 10 | 2 | Inorganic chem. | Ionization energy, Atomic Radii, Electron Affinity, electronegativity | Face to face | Quizzes/oral and mid exams |
| 12 | 2 | Inorganic chem. | Shielding effect, Dipole moment, Polarity, Hydrogen bonding, Melting point, Boiling point Solubility Orbital hybridization | Face to face | Quizzes/oral and mid exams |

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| 11. Infrastructure |
| 1. Books Required reading: |  |
| 2. Main references (sources) | Basic Inorganic ChemistryF. Albert Cotton, Geoffrey Wilkinson, Paul L. Gaus, , 3rd Edition, 1995 |
| A- Recommended books and references (scientific journals, reports…). | Inorganic chemistry, Sharpe, A. G. (Alan George), Harlow: Longman Scientific and Technical, 3rd Edition 1992 |
| B-Electronic references, Internet sites… | https://courses.lumenlearning.com/boundless-chemistry/chapter/the-structure-of-the-atom/ <https://www.acs.org/content/acs/en/careers/chemical-sciences/areas/inorganic-chemistry.html>https://courses.lumenlearning.com/boundless-chemistry/chapter/periodic-trends/ |
| 12. The development of the curriculum plan |
| The Celebes should be up to date and improve the explanation method  |

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