MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

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| **Module Information**  **معلومات المادة الدراسية** | | | |
| **Module Title** | Inorganic Chemistry | | **Module Delivery** |
| **Module Type** | basic | | * **☒ Theory** * **☒ Lecture** * **☒ Lab** * **☐ Tutorial** * **☐ Practical** * **☐ Seminar** |
| **Module Code** | TH-NAHRA-059631107-73 | |
| **ECTS Credits** | 6 | |
| **SWL (hr/sem)** | 150 | |
| **Module Level** | 1 | **Semester of Delivery** | 1 |
| **Administering Department** | Forensic Science | **College** | **College of Science** |
| **Module Leader** | Dr. Emad a yousif | **e-mail** | Emad.yousif@nahrainuniv.edu.iq |
| **Module Leader’s Acad. Title** | Professor | **Module Leader’s Qualification** | Ph.D. |
| **Module Tutor** | Prof. Dr. Emad a yousif  Lect. Dr. Athraa ghazi abdulrazzaq | **e-mail** | [Emad.yousif@nahrainuniv.edu.iq](mailto:Emad.yousif@nahrainuniv.edu.iq)  Athraa.ghazi@ nahrainuniv.edu.iq |
| **Peer Reviewer Name** |  | **e-mail** |  |
| **Scientific Committee Approval Date** | 08/11/2023 | **Version Number** | 1.0 |

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| **Relation with other Modules**  **العلاقة مع المواد الدراسية الأخرى** | | | |
| **Prerequisite module** | None | **Semester** |  |
| **Co-requisites module** | None | **Semester** |  |

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| **Module Aims, Learning Outcomes and Indicative Contents**  **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية** | |
| **Module Aims**  **أهداف المادة الدراسية** | 1-Atomic Theory, picturing atoms and elements,inside the atom,atomic number  2-General view to periodic table and atomic structure  3-energy revisited,concept of minimum energy  4-Groups 1 & 2, the Alkali Metals and the Alkaline Earth metals  5-Atoms, Molecules, Ions and ionic compounds  6-Chemical bonding ,how can atoms achieves lower-energy states |
| **Module Learning Outcomes**  **مخرجات التعلم للمادة الدراسية** | * Teach students the principle of chemistry * Explain the atomic structures and its compounds * Explain some of chemical phenomena * Study the properties of some chemical elements * Practical and laboratory skills * Improvement skills, to improve student's mind and to let students think more about chemistry * Productive skills |
| **Indicative Contents**  **المحتويات الإرشادية** | Indicative content includes the following.  1. Areas of inorganic chemistry  2. The current role of inorganic chemistry  3. Improve the student’s mind by how he or she can deal with chemicals and its uses  4. Teach students about hazardous chemicals in the lab and how can avoid any risk in the lab |

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| **Learning and Teaching Strategies**  **استراتيجيات التعلم والتعليم** | |
| **Strategies** | ● In class interactive lectures involving educational videos  ● Practical in lab lectures  ● Adapting interactivity with student’s interaction by raising a question and asking  the group to find the relevant answers to them as a main way of teaching.  ● Power point presentation, examples from books and internet |

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| **Student Workload (SWL)**  **الحمل الدراسي للطالب** | | | |
| **Structured SWL (h/sem)**  **الحمل الدراسي المنتظم للطالب خلال الفصل** | 102 | **Structured SWL (h/w)**  **الحمل الدراسي المنتظم للطالب أسبوعيا** | 7 |
| **Unstructured SWL (h/sem)**  **الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 98 | **Unstructured SWL (h/w)**  **الحمل الدراسي غير المنتظم للطالب أسبوعيا** | 6.5 |
| **Total SWL (h/sem)**  **الحمل الدراسي الكلي للطالب خلال الفصل** | 200 | | |

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| **Module Evaluation**  **تقييم المادة الدراسية** | | | | | |
| **As** | | **Time/Number** | **Weight (Marks)** | **Week Due** | **Relevant Learning Outcome** |
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5, 10 | LO #1, 2, 10 and 11 |
| **Assignments** | 2 | 10% (10) | 2, 12 | LO # 3, 4, 6 and 7 |
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| **Summative assessment** | **Midterm Exam** | 2 hr | 30% (10) | 7 | LO # 1-7 |
| **Final Exam** | 2hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Syllabus)**  **اﻟﻤﻨﮭﺎج اﻻﺳﺒﻮﻋﻲ اﻟﻨﻈﺮي** | |
|  | **Material Covered** |
| **Week 1-2** | Elements and their invisible structures ,Atomic Theory  Isotopes, mass number, charged atoms,  Relative atomic mass, average atomic weight |
| **Week 3-5** | Periodic table ,periodic groups, elemental makeup  Electronic structure of atom, energy revisited, concept of  Minimum energy in the atom ,electron –configuration notation |
| **Week 6-8** | Quantum numbers ,evidence and uses of the electron energy levels  Periodic table ,lewis electron dot structures ,periodic trends |
| **Week 9-12** | Chemical bonding ,how can atoms achieves lower-energy states  Metals lose electrons ,nonmetals gain electrons  Electron transfer ,ionic charges, polyatomic ions |
| **Week**  **13-15** | Formulas for ionic compounds ,the nature of the ionic bond ,why are there two types of compounds diatomic molecules  The nature of the covalent bond lewis electron dot formulas, coordinate covalent bonds ,electronegativity and polarity, recognizing ionic versus molecular compounds ,law of definite composition revisited |
| **Week 16** | **Preparatory week before the ﬁnal Exam** |

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| **Delivery Plan (Weekly Lab. Syllabus)**  **المنهاج الاسبوعي للمختبر** | |
| **Week** | **Material Covered** |
| **Week 1** | Lab 1: preparation of sodium hydroxide |
| **Week 2** | Lab 2: purification of table salt |
| **Week 3** | Lab 3: preparation and reaction of barium peroxide |
| **Week 4** | Lab 4: calculate the percentage of water in hydrated |
| **Week 5** | Lab 5: paper chromatography |
| **Week 6** | Lab 6: synthesis of alum from aluminum |
| **Week 7** | Lab 7: halogens |
| **Week 8** | Lab 8: preparation of calcium peroxide CaO2 |
| **Week 9** | Lab9: preparation of Copper Iodate and Determination of Its Solubility Prouduct in Water |
| **Week 10** | Lab10:Identification of Oxalate in their Complex as Below |

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| **Learning and Teaching Resources**  **مصادر التعلم والتدريس** | | |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | 1. Fundamental of analytical chemistry: Nine edition, Skoog | Yes |
| **Recommended Texts** | Fundamentals of chemistry: Fourth Edition, David E. Goldberg | No |
| **Websites** | Different websites | |

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| **Grading Scheme**  **مخطط الدرجات** | | | | |
| **Group** | **Grade** | التقدير | **Marks (%)** | **Definition** |
| **Success Group**  **(50 - 100)** | **A -** Excellent | **امتياز** | 90 - 100 | Outstanding Performance |
| **B -** Very Good | **جيد جدا** | 80 - 89 | Above average with some errors |
| **C -** Good | **جيد** | 70 - 79 | Sound work with notable errors |
| **D -** Satisfactory | **متوسط** | 60 - 69 | Fair but with major shortcomings |
| **E -** Sufficient | **مقبول** | 50 - 59 | Work meets minimum criteria |
| **Fail Group**  **(0 – 49)** | **FX –** Fail | **راسب (قيد المعالجة)** | (45-49) | More work required but credit awarded |
| **F –** Fail | **راسب** | (0-44) | Considerable amount of work required |
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| **Note:** Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. | | | | |