MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

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| **Module Information**  **معلومات المادة الدراسية** | | | | | | | |
| **Module Title** | Chemistry | | | | **Module Delivery** | | |
| **Module Type** | S | | | | * **☒ Theory** * **☒ Lecture** * **☒ Lab** * **☒ Tutorial** * **☐ Practical** * **☒ Seminar** | | |
| **Module Code** | RGC1202 | | | |
| **ECTS Credits** | 6 | | | |
| **SWL (hr/sem)** | 150 | | | |
| **Module Level** | | 1 | **Semester of Delivery** | | | | 1 |
| **Administering Department** | | Geophysics | **College** | Remote sensing & Geophysics | | | |
| **Module Leader** | Shaimaa Ahmad Hassan | | **e-mail** | Dr.shaimaa\_altaee@kus.edu.iq | | | |
| **Module Leader’s Acad. Title** | | Assistant Professor | **Module Leader’s Qualification** | | | | Ph.D. |
| **Module Tutor** |  | | **e-mail** |  | | | |
| **Peer Reviewer Name** | |  | **e-mail** |  | | | |
| **Scientific Committee Approval Date** | | 1/6/2023 | **Version Number** | | |  | |

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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. Learn what organic, inorganic and analytical chemistry means.  2. Learn the calculation methods used in analytical chemistry.  3. Identify the types and naming of inorganic compounds.  4. Identify the different methods for calculating the concentrations of solutions.  5. Identify the types of naming organic compounds. |
| **Module Learning Outcomes**  **مخرجات التعلم للمادة الدراسية** | 1- The student distinguishes between the types of organic and inorganic compounds.  2- Learn how to find the chemical concentrations of solutions.  3- The student distinguishes between saturated and unsaturated. hydrocarbons  4- Master the effect of the acid function on solutions. |
| **Indicative Contents**  **المحتويات الإرشادية** |  |

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| **Learning and Teaching Strategies**  **استراتيجيات التعلم والتعليم** | |
| **Strategies** | The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some interesting for example sampling activities for the students. As well as by assigning students to make seminars on a specific topic in chemistry. |

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| **Student Workload (SWL)**  **الحمل الدراسي للطالب** | | | |
| **Structured SWL (h/sem)**  **الحمل الدراسي المنتظم للطالب خلال الفصل** | 100 |  |  |
| **Unstructured SWL (h/sem)**  **الحمل الدراسي غير المنتظم للطالب خلال الفصل** | 50 |  |  |
| **Total SWL (h/sem)**  **الحمل الدراسي الكلي للطالب خلال الفصل** | 150 | | |

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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 | 1,2,10 and 11 |
| **Assignments** | 2 | 10% (10) | 2,12 | 3,4,6,and 7 |
| **Projects / Lab.** | 1 | 10% (10) | Continues |  |
| **Report** | 1 | 10% (10) | 13 | 5,8,and 10 |
| **Summative assessment** | **Midterm Exam** | 2 hr | 10% (10) | 7 | 1-7 |
| **Final Exam** | 2hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) |  |  |

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| **Delivery Plan (Weekly Syllabus)**  **المنهاج الاسبوعي النظري** | |
| **Week** | **Material Covered** |
| **Week 1** | Inorganic chemistry |
| **Week 2** | Atomic number, mass number and isotope |
| **Week 3** | An overview of the periodic table |
| **Week 4** | Names and Formulas of Inorganic Compounds |
| **Week 5** | Ionic bond, covalent bond and metallic bond |
| **Week 6** | Molecular shape and VSEPR model |
| **Week 7** | Organic chemistry |
| **Week 8** | Introduction to Hydrocarbons |
| **Week 9** | Hydrocarbon (alkane, alkene, alkyne and Aromatic compounds) |
| **Week 10** | Hydrocarbon Sources and Separation (Natural Gas and Petroleum or Crude Oil) |
| **Week 11** | Use of Hydrocarbons (Refined Petroleum Products, Transportation Fuels and Plastic) |
| **Week 12** | Analytical chemistry |
| **Week 13** | Qualitative and quantitative analysis |
| **Week 14** | Gravimetric Analysis |
| **Week 15** | Volumetric Analysis (TITRATION) |
| **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** | General Safety Rules |
| **Week 2** | Common Laboratory Apparatus |
| **Week 3** | Method for the express of concentration |
| **Week 4** | Prepare Dilute Solution |
| **Week 5** | To prepare and standardize 0.1 N HCl using sodium carbonate as primary standard |
| **Week 6** | Soil pH Protocol |
| **Week 7** | Determination of melting point |

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| **Learning and Teaching Resources**  **مصادر التعلم والتدريس** | | |
|  | **Text** | **Available in the Library?** |
| **Required Texts** | **Principles of Inorganic Chemistry, 2nd Edition**  [Brian W. Pfennig](https://www.wiley.com/en-us/search?pq=%7Crelevance%7Cauthor%3ABrian+W.+Pfennig) December 2021  Principles of Organic Chemistry  1st Edition - January 27, 2015 | No |
| **Recommended Texts** | Principles of Instrumental Analysis, 7E  by Douglas A. Skoog/F. James Holler/Stanley R. Crouch , 2020 | No |
| **Websites** | https://chem.libretexts.org/Bookshelves/General\_Chemistry/Map%3A\_Chemistry\_-\_The\_Central\_Science. | |

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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. | | | | |