****

**Course Book of 4th stage**

**practical Organic identification chemistry**

|  |  |
| --- | --- |
| **The course of practical name:** | Organic identification chemistry  |
| **Theoretical lecture:** | Dr.Rostum Briam Dr.Faud Abdulla |
| **Practical assistant lectures:**  | Sirwan Othman Hero S. Rahman |
| **Time of laboratory:** | Monday from 8:30- 5:50 (four groups)Tuesday from 8:30- 5:50 (four groups)\*Each group is 2 hours  |
| **Contact:** | Hero.rahman@su.edu.krd 07508363671Salahaddin university Chemistry department  |
| **Course detail:**1. determine the solubility of organic compounds
2. melting point and boiling point of organic compounds
3. sodium fusion tests (Halogen, Nitrogen and Sulfur)
4. identification of functional groups in many organic compounds (solid and liquid) by numerous reagents (general and special tests) such as for:

-carboxylic acids-alcohols-carbohydrates-nitrogen in all functional groups (amine, Nitro compounds, Amide and also)-unsaturated compounds-ethers-aldehydes and ketones-phenols-polyhydroxy compounds instrumental analysis (IR, NMR and Mass Spectroscopy) |
| **Course objective:** This course aims to familiarize the students with background knowledge and the basic skills required in all later stages of studying and working in organic chemistry-related fields. This is achieved through: 1. Provide the students with how to identify an organic compound that is associated with background theory. 2. In this experiment, students will determine the solubility of different organic compounds in water, dilute acid, or dilute base. This solubility can provide information on what functional group is present or whether the compound has a high or low formula mass. 3. Students will perform chemical tests for known organic compounds to suggest the presence or determine the absence of a specific functional group in the compound. 4. Students will use the results of both solubility and functional group tests to generate experimental data that will help them identify an unknown sample.  |
| **Student's obligation**: • Students have to attend weekly practical sessions. • Students will have to adhere to lab standards including attendance, fulfilling tasks and assignments and obliging to lab safety rules. • Students will have to sit a minimum of two exams  |
| **Forms of teaching**: Learning resources in this course include white board, lecture notes,gloves, PowerPoint presentations and media files.  |
| **Assessment scheme :**

|  |  |
| --- | --- |
| First or second semester exam | 12 |
| Presentation | 4 |
| Practical Report (unknown samples) | 10 |
| Quizzes  | 7 |
| Attendance and class activities | 2 |
| **Total**  | **35 marks** |

 |
| **Student learning outcome:** The principal learning outcome of this course is • to build the background knowledge required at all later levels of organic chemistry • to help the student grasp the theoretical understanding of the course and to demonstrate materials taught in lecture and promote interest in organic identification • to familiarize the student with skills and materials used in organic identification chemistry laboratories  |
| **Course Reading List and References:‌** Morrison, R. T., and R. N. Boyd. Organic Chemistry, 6th Edition.The Systematic Identification of Organic Compounds, Ralph L. Shriner and others, John Wiley and Sons, USA. Practical Organic Chemistry, Frederick G. Mann and Bernard C. Saunders, Longman Group Limited London.  Organic Experiments, Louis F. Fieser and Kenneth L. Williamson, D. C. Heath and company. Laboratory Manual of Organic Chemistry, Raj K. Bansal, New age international (p) limited, Publishers   |
| **Examinations:** A typical exam question may include a combination of the following: * Identification of unknown compounds by reagents theoretically.
* Identifying the products of chemical reactions
* Giving explanations for facts and phenomena in solubility or sodium fusion test
* Outlining reaction mechanisms
 |
| **Peer review:** This course book has to be reviewed and signed by a peer. The peer approves the contents of our course book by writing few sentences in this section.*(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).* |