****

**Department of …Chemistry…………………….**

**College of ……sciences………………………….**

**University of …Salahaddin ……………………….**

**Subject: Practical Organic Chemistr**

**Course Book – (Year 3)**

**Lecturer's name Jala Bahget ziwar**

**Academic Year: 2023/2022**

**Course Book**

|  |  |  |
| --- | --- | --- |
| **1. Course name** | **Practical Organic Chemistry** | |
| **2. Lecturer in charge** | **Jala B. ziwar** | |
| **3. Department/ College** | **Chemistry / sciences** | |
| **4. Contact** | **e-mail:** [**jala.ziwar@su.edu.krd**](mailto:jala.ziwar@su.edu.krd)  **Tel: (optional)** | |
| **5. Time (in hours) per week** | **Practical: 12 hours** | |
| **6. Office hours** | **5hours** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | **1-(1990-1991) B.Sc. in general chemistry from Salahaddin University\ college of Science \ Chemistry department.**  **2-(1996-1997) M. Sc. In Natural product \ Salahaddin University \ College of Science.** | |
| **9. Keywords** | **Practical, Benzamide, Hoffman degradation, Pinacol, Schif base** | |
| **10. Course overview:**  The major objective of this study was to offer an overview of the current situation in the course practical organic chemistry . All semester chemistry students, laboratory instructors and Practical Organic Chemistry course material were involved as the main source of data. The main instruments used to collect the necessary data were questionnaires and content analysis of the course material. Observation was another instrument of data collection. Qualitative and quantitative methods were employed to analyze data. The results indicated that the majority of the activities have lower inquiry level of one and the dominant practical work identified was demonstration type activity. Moreover laboratory instructors and students ranked the most important objective of the manual—to demonstrate materials taught in lecture—least. Based on these findings certain recommendations were forwarded. Chemistry laboratory activities refer to the practical activities which students undertake using chemicals and equipments in a chemistry laboratory. Inquiry level is a multifaceted activity that involves making observations; posing questions; examining books and other sources of information to see what is already known; planning investigations; reviewing what is already known in light of experimental evidence; using tools to gather, analyze, and interpret data; proposing answers, explanations, and predictions; and communicating the results. Objective in laboratory instructions is a term which refers to what to be taught, who is to be taught to, by what means, and most importantly, what are the intended outcomes .  Chemistry is essentially a laboratory activity oriented subject. No course in chemistry can be considered as complete without including practical work in it. Laboratory activity, here, is used to describe the practical activities which students undertake using chemicals and equipment in a chemistry laboratory. The original reasons for the development of laboratory work in chemistry education lay in the need to produce skilled technicians for industry and highly competent workers for research laboratories.  Some also classify practical works in to four major types: exercises, experiences, demonstrations and investigations. Each of these types of practical has its own place in science teaching.  The major objective of this study was to offer an overview of the nature of Practical Organic Chemistry I offered by the Department of Chemistry in Salahaddin University. The specific objectives of the study were:  1. To evaluate the types of objectives of the selected activities  2. To assess the inquiry levels assigned to the laboratory tasks  3. To measure the relevance of the activities in terms of the recent concern, students’ interest and instructors reaction to what should be the objectives of the laboratory tasks. | | |
| **11. Course objective:**  The course will cover the basic view about the organic chemistry including the basic terms of organic chemistry in addition to increase the knowledge of student about the types of physical properties, chemical and type of reaction a Different forms of teaching will be used to reach the objectives of the course: power point presentations for the head titles and definitions and summary of conclusions, besides worksheet will be designed to let the chance for practicing on several aspects of the course in the lab, furthermore students will be asked to prepare research papers on selective topics and summarise articles contents published in English into either Kurdish or Arabic language, those articles need to be from printed media or internet articles. There will be lab discussions and the lecture will give enough background to translate, solve, analyze, and evaluate problems sets, and different issues discussed throughout the course.. | | |
| **12. Student's obligation**  The students responded above average for most items. However, it was identified that students look difficulty to grasp the aim and understand the importance of the activities. Further it was found more satisfying and gave confidence if the lessons were well structured and student directed. On top of these most students wish organic chemistry laboratory to be a place where they could practice scientific investigations. | | |
| **13. Forms of teaching**  Learning resources in this course include white board and PowerPoint presentations. | | |
| **14. Assessment scheme**  The students are required to do three practice exams along the year. The exams have 7mark, the report for each experiment attendance, classroom activities 8mark (total 15 mark). Final examination: 15% | | |
| **15. Student learning outcome**  The principal learning outcome of demonstration activities is to help the student grasp the theoretical understanding of the course and to demonstrate materials taught in lecture and promote interest in chemistry and in learning science and introduce equipment’s and develop | | |
| **16. Course Reading List and References‌:** Required book:  Vogel,s Textbook of Practical Organic Chemistry. B. S. Furniss. ElBS and Longman, London.  The core materials of the course consists of the above book, articles from media and internet, and lecture’s notes, make sure you read all the materials and prepare well before going for the examinations.  Students are encouraged to search for any other materials that may help improve their English language ability in reading, writing, listening and speaking organic chemistry texts.  ▪ Magazines and review (internet): | | |
| **17. The Topics:** | | **Lecturer's name** |
| In this section the lecturer shall write titles of all topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture  Each term should include not less than 16 weeks | | Lecturer's name  ex: (2 hrs) |
| **18. Practical Topics (If there is any)** | |  |
| Experiment titles  1-Hoffman degradation  2- Benzil reaarrangment  3-Preparation of pinacol  4-Pinacol rearrangement  5-preparation of schif base  6-praparation of quinoxalin  7-preparation of anthraquinone  8-Deils Alder  9- Aldol condensation  10- preparation Indol  11-Hydride reducing reagents  12Qualitative Organic Analysis Identifications of Unknown | | Lecturer's name  2hr |
| 19. Examinations:  reaction between acetaldehyde with phenylacetone. 1-Explain Why amide have quite high boiling point.  2-Carboxilic acid derivative more reactivity to nucleophilic acyl substitution reaction than aldehydes and ketones .  3-Acid chlorides are more reactive toward nucleophiles acyl substitution than amid  4-Complete this reactions:?????  5-Write The mechanism of preparation Banzamid .  6-Explain why amid are least reactive to nucleophilic attac.  7-Write Equation preparing nitronium ion.  8-Explain Banzin does not Under go addition reaction .  9-Write Mechanism of preparation of banzilic acid .  10-Whate is Hoffman degradation of acetamid  11-Explain low yield of m-nitrobenzanilide in nitration of benzilic acid.  12-Compar between the fluoroscenee and phospherscence.  13-Unsubstituted imines are unstable while substituted imines are very stable?  14-Explain why 1,1-diphenylehtandiol gives diphenyl acetaldehyde not phenylacetophenone with mechanism.  15-Write all product with mechanism the | | |
| **20. Extra notes:**  Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks. | | |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**  This course book has to be reviewed and signed by a peer. The peer approves the contents of your 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).*  ئه‌م کۆرسبووکه‌ ده‌بێت له‌لایه‌ن هاوه‌ڵێکی ئه‌کادیمیه‌وه‌ سه‌یر بکرێت و ناوه‌ڕۆکی بابه‌ته‌کانی کۆرسه‌که‌ په‌سه‌ند بکات و جه‌ند ووشه‌یه‌ک بنووسێت له‌سه‌ر شیاوی ناوه‌ڕۆکی کۆرسه‌که و واژووی له‌سه‌ر بکات.  هاوه‌ڵ ئه‌و که‌سه‌یه‌ که‌ زانیاری هه‌بێت له‌سه‌ر کۆرسه‌که‌ و ده‌بیت پله‌ی زانستی له‌ مامۆستا که‌متر نه‌بێت.‌‌ | | |