



Department of Chemistry.....

College of Science

Salahaddin University-Erbil

Subject: Practical Organic Chemistry

Course Book – (Year 3)

Lecturer's name: Peshawa Shafiq Osw, PhD

Academic Year: 2023/2024

Course Book

1. Course name	Practical Organic Chemistry
2. Lecturer in charge	Peshawa Shafiq Osw
3. Department/ College	Chemistry / sciences
4. Contact	e-mail: peshawa.osw@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	<p>1. (2006) B.Sc. in chemistry at Salahaddin University, College of Science, Chemistry Department.</p> <p>2. (2011) M.Sc. in Natural products at Salahaddin University, College of Science, Chemistry Department.</p> <p>3. (2022) Ph.D. in Organic Chemistry-Synthesis at Salahaddin University, College of Science, Chemistry Department and University of Pavia-Italy (Split-sit Program).</p>
9. Keywords	Practical, Benzamide, Hoffman degradation, Pinacol, Schiff base
10. Course overview:	<p>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.</p> <p>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</p>

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:

<p>Vogel's Textbook of Practical Organic Chemistry. B. S. Furniss. EIBS and Longman, London.</p> <p>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.</p> <p>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.</p> <ul style="list-style-type: none"> ▪ Magazines and review (internet): 	
17. The Topics:	Lecturer's name
<p>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</p> <p>Each term should include not less than 16 weeks</p>	<p>Peshawa Osw ex: (2 hrs)</p>
18. Practical Topics (If there is any)	
<p>Experiment titles</p> <p>1-Hoffman degradation</p> <p>2- Benzil rearrangement</p> <p>3-Preparation of pinacol</p> <p>4-Pinacol rearrangement</p> <p>5-preparation of Schiff base</p> <p>6-praparation of quinoxaline</p> <p>7-preparation of anthraquinone</p> <p>8-Deils Alder</p> <p>9- Aldol condensation</p> <p>10- preparation Indole</p> <p>11-Hydride reducing reagents</p> <p>12Qualitative Organic Analysis Identifications of Unknown</p>	<p>Peshawa Osw 2hr</p>

19. Examinations:

- 1-Explain Why amide have quite high boiling point.
- 2-Carboxylic 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

پیداچونہوہی ھاوہل

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).

ئەم كۆرسىبوو كە دەبىت لەلاپەن ھاوہلىكى ئەكادىمىيە سەير بىكرىت و ناوہرۆكى بابەتەكانى كۆرسەكە پەسەند بىكات و جەند ووشەيەك بنووسىت لەسەر شىاوى ناوہرۆكى كۆرسەكە و واژووى لەسەر بىكات.
ھاوہل ئەو كەسەيە كە زانىارى ھەبىت لەسەر كۆرسەكە و دەبىت پلەى زانستى لە مامۇسنا كەمتر نەبىت.