ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications
(CS)

Course Specifications

Institution : University of Dammam Date : 3/5/1435

College/Department : College of Science / Department of Chemistry .

A. Course Identification and General Information

1. Course title and code : Organic Chemistry (1) / Chem 162 N
2. Credit hours : 4 (3 Lectures + 1 Practical)
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Science Chemistry ,Specialization Chemistry
4. Name of faculty member responsible for the course :
5. Level/year at which this course is offered : Level : 2 / Year : First
6. Pre-requisites for this course (if any) : Chem 101N
7. Co-requisites for this course (if any) : NA
8. Location if not on main campus : College of Science
9. Mode of Instruction (mark all that apply) a. traditional classroom ✓ What percentage? 80% b. blended (traditional and online) X What percentage? 0% c. e-learning X What percentage? 0% d. correspondence X What percentage? 0%

B Objectives

1. What is the main purpose for this course?

- To know the basis of organic chemistry and its importance .
- To know relationship between the molecular structure and properties of organic compounds
- To recognize the functional groups in organic compounds and classification of organic compounds .
- To know the nomenclature of organic compounds by using IUPAC rules and common names
- To know relationship between the functional groups and reactivity of organic compounds .
- To recognize the fundamental reactions in organic chemistry (substitution - Addition – elimination) .
- To study the different sections of the aliphatic organic compounds in terms of the nomencluture , structure , physical properties , methods of preparation , chemical reactions and common uses .

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Lecturing and simplify the information with the use of information technology and the Internet, or references to the new changes of modern research in the field of study.
- The use of visual display PowerPoint.
- Linking the lecture content with the presentation of new researches published recently.
- The debate and the exchange of roles with the comment on the mutual debate between professor and the students.
- Access to modern research and studies related to the topics of decision and take advantage of them.
- Some duties assigned to the students and then discussed together.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
- Introduction to Organic Chemistry – its importance - chemical bonds - study of the molecular structure of organic compounds including chemical bonds – molecular shapes (hybridization)	1	3
- Study the properties of organic compounds such as electro negativity, polarity and solubility - inductive effect - resonance – symmetry - molecular and structural formulas - functional groups in organic compounds and sections of these compounds.	2	3
- Know the fundamental reactions in organic chemistry (substitution - addition - elimination) - study the classification of aliphatic organic compounds : nomenclature (Common name- IUPAC) - structure - physical properties - methods of preparation - reactions and common uses of saturated hydrocarbons (alkanes) .	3	3
- Study the different types of the aliphatic compounds include : nomenclature (Common name- IUPAC) - structure - physical properties - methods of preparation - reactions and common uses of unsaturated hydrocarbons (alkenes) .	4	3
- Study the different types of the aliphatic compounds include : nomenclature (Common name- IUPAC) - structure - physical properties - methods of preparation - reactions and common uses of unsaturated hydrocarbons (alkynes) .	5	3
- Nomenclature (IUPAC and Common name) - structure - physical properties - methods of preparation - reactions and common uses for (aliphatic cyclic compounds, alkyl halides)	6	3
- Alcohols (classification - nomenclature - methods of preparation – their physical properties and their reactions (acidity - formation of esters – oxidation) .	7	3
- Ethers and Epoxides (nomenclature - methods of preparation – physical properties - their reactions).	8	3
- Nomenclature (IUPAC and Common name) - structure - physical properties - methods of preparation - reactions and common uses for (aldehydes and ketones)	9	3
- Nomenclature (IUPAC and Common name) - structure - physical properties - methods of preparation - reactions and common uses for (carboxylic acids and their derivatives : esters - acid halides - acid anhydrides - amides)	10	3

- Nomenclature (IUPAC and Common name) - structure - physical properties - methods of preparation - reactions and common uses for (aliphatic amines)	11	3
- Nomenclature (IUPAC and Common name) - structure - physical properties - methods of preparation - reactions and common uses for (sulfur compounds, thioalcohols and	12	3
- Revision.	13	3
- Revision.	14	3

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	39	Theoretical		26	NA	65
Credit	39	Theoretical		26	NA	65

3. Additional private study/learning hours expected for students per week. No

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code	NQF Learning Domains	Course Teaching	Course Assessment
1.0	**Knowledge**		
1.1	- To know the classification of hydrocarbon compounds, the different types of organic compounds and chemical bonding	- Lectures - Self learning	- Quizzes - Assignments

1.2	- To be to study the different mechanisms of organic compounds.	- Lectures - Self learning	- Exams. - Quizzes - Assignments
1.3	- To know the different types of functional groups in organic chemistry.	- Lectures - Self learning	- Exams. - Quizzes - Assignments
1.4	- To know the relationship between molecular structure and properties of organic compounds and understand them .	- Lectures - Self learning	- Exams. - Quizzes - Assignments
2.0	**Cognitive Skills**		
2.1	- Be aware of the importance of the Chemical Bonding.	- Lectures. - Team work. - Open discussions	- Assignments. - Eams.
2.2	- Be aware of the physical and chemical properties of organic compounds.	- Lectures. - Team work. - Open discussions	- Assignments. - Eams.
2.3	- Be aware of the essential of mechanisms and methods of determining them.	- Lectures. - Team work. - Open discussions	- Assignments. - Eams.
2.4	- Be aware of the importance of organic compounds, where it's used in many applications	- Lectures. - Team work. - Open discussions.	- Assignments. - Achievement tests including (oral questions quarterl
2.5	- Be aware of the different kinds of organic reactions, such as substitution, addition and elimination reactions.	- Lectures. - Team work. - Open discussions.	- Assignments. - Achievement tests including (oral
3.0	**Interpersonal Skills & Responsibility**		
3.1	- The student fluent in dealing with others and collaborative.	- Cooperative Education	- Assessments.
3.2	- The student respects the opinions of others.	- Team work	- Note behavior during lectures. - How to deal
3.3	- The student accepts criticism.	- Team work	- Note behavior

			- How to deal with Professor Article
4.0	**Communication, Information Technology, Numerical**		
4.1	- Research about some subject in organic chemistry and the application.	- Research across Interne t	- Assignments. - Small project.
4.2	- Communicate with others.	- Interactive learning - Team work	- Interview.
4.3	- Receive the comments and explanations are important.	- Interactive learning - Team work	- Interview.
4.4	- Ability to calculate the dipole moment.	- Interactive learning - Team work	- Interview.
5.0	**Psychomotor**		
5.1	- To know how to use the tools of the necessary laboratory experiment	- Cooperative Educatio	- Observation. - Use the note card.
5.2	- That the student mastered the work of private accounts experience .	- Cooperative Educatio n	- Observation. - Use the note card.
5.3	- That the student mastered the report writing process	- Cooperative Educatio	- Observation. - Use the note card

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top)

Course LOs #	**Program Learning Outcomes (Use Program LO Code #s provided in the Program**								
	1.1	**1.2**		**2.1**		**3.2**		**4.1**	
1.1									
2.1									

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination,	Week Due	Proportion of Total

	speech, oral presentation, etc.)		Assessment
1	First periodic test.	6	10
2	Second periodic test.	11	15
3	Cooperation and activity	Throughout The	5
4	Practical	Throughout the	30
5	Final test		40
6	Total		100
7			
8			

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Faculty Web-page with communication tolls in Blackboard.
- 4-Office hours / week.

E Learning Resources

1. List Required Textbooks

- Principles Organic Chemistry. Dr. Mohamed Ibrahim Elhassan - Dr. Hassan Hazmi

2. List Essential References Materials (Journals, Reports, etc.)

- Principles of aliphatic Organic Chemistry. Dr. Ahmed Madhat Eslam.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

- Principles Organic Chemistry.
  Dr. Mohamed Ibrahim Elhassan - Dr. Hassan Hazmi

- Principles of aliphatic Organic Chemistry.
Dr. Ahmed Madhat Eslam.

- Organic Chemistry. L.G. Wade, JR. 5th Edition. Prentice Hall/Person Education Inc. New Jersey, 2006.
- Organic Chemistry. J. McMurry, 6th Edition, Books-Cole, 2007.
- Organic Chemistry Solomon and Fryhle. 7th Edition. John Wiley & Son, 2000.
- Organic Chemistry. Morrison & Boyd. Hall International Editions, 2003.
- Vogel's Text Book of Practical Organic Chemistry. Vogel et al., 5th Edition, Longman

Scientific & Technical, John Wiley &Sons, 2007.

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.
- Web Sites: Science direct - Google - WWW.Chemistry online.com .

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

- Computer-based programs : Chemdraw office.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) - Lack of technical support. - Lack of practical equipments. - Classrooms enough for No. of students , Black (white) board and also in lab.
2. Computing resources (AV, data show, Smart Board, software, etc.) - Computer, Data show, Smart board.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) - The provision of laboratory equipment and instruments.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching

- Students evaluation in each semester.
- Using practical and written tests and homework.

- Evaluation the effectiveness of the teaching method used.

2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- Continuous internal and external revision for development.

- Evaluation the performance of the students and professors through questionnaires.

- Evaluation for the tests and final exam by the students by using questionnaires

3 Processes for Improvement of Teaching

- Studying reports.
- Training of faculty.
- Exchanging faculty between different institutions.

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Revision of the sample of assignments with teaching staff of another institution.

- Revision of the corrected sample worksheets and tests by independent professors to check the standards of achievement among students.

- Exams were reviewed by an evaluating team before finalizing and printing.

- The grading of exam papers was also reviewed by another faculty member within the department

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Collecting all reports and evaluations at the end of the year for a reviewing purpose.
- Conducting a workshop to presents finding of reports and evaluation to share knowledge.