

# National Commission for Academic Accreditation & Assessment

## Course Specification

Institution KKU
College/Department College of Science, Department of Chemistry

### A Course Identification and General Information

1. Course title and code: 213 Chem
2. Credit hours 4 ( 3 + 1 )
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course <b>Dr\ Ahmed Fouda</b>
5. Level/year at which this course is offered Level 4 / Second year
6. Pre-requisites for this course (if any) Organic Chemistry 1 (212 Chem)
7. Co-requisites for this course (if any)
8. Location if not on main campus

## B Objectives

<p>1. Summary of the main learning outcomes for students enrolled in the course.</p> <p>1) Knowing the basic principles and importance of organic compounds.</p> <p>2) Studying of alcohols, phenols, ethers, aldehydes, Ketones, carboxylic acids, derivatives of carboxylic acids and amines (properties, preparation and Chemical reactions).</p>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <p>1) Diversify the teaching methods of lectures by presenting at the blackboard and presentation of some animation films.</p> <p>2) continuous development for the contents of the course to keep close with modern scientific research result</p> <p>3) Assigning students to search for topics of the course through the information network, providing seminars and writing reports to increase their self-reliance</p> <p>4) Activate more e-learning for the course through the site of the university</p>

## C. Course Description

(Note: General description in the form to be used for the Bulletin or Handbook should be attached)

Coverage of Planned Program			
List of topics (Theoretical)	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Study the chemistry of monohydric alcohols (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism) [either aliphatic or aromatic]	9	9	No variation
Study the chemistry of phenols (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism)	3	3	No variation
Study the chemistry of ethers and thioethers (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism)	3	3	No variation
Study the chemistry of thioalcohols			

(Nomenclature, Preparation, and Reactions including some examples of reaction mechanism)	3	3	No variation
Study the chemistry of aldehydes and ketones (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism) [either aliphatic or aromatic]	9	9	No variation
Study the chemistry of carboxylic acids (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism) [either aliphatic or aromatic]	6	6	No variation
Study the chemistry of carboxylic acid derivatives (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism) [either aliphatic or aromatic]	6	6	No variation
Study the chemistry of amines (Nomenclature, Preparation, and Reactions including some examples of reaction mechanism) [either aliphatic or aromatic]	6	6	No variation

2- Coverage of Planned Program			
List of topics (Practical)	Planned Contact Hours	Actual Contact Hours	Reason for Variations if there is a difference of more than 25% of the hours planned
Course introduction and determination of the degree of solubility for solid organic compounds in water Determination the degree of miscibility for liquid organic compounds with water	2	2	No variation
Identification of alcohols Differentiation between primary, secondary and tertiary alcohols	2	2	No variation
Identification of phenols	2	2	No variation
Identification of aldehydes and ketones	4	4	No variation

Identification of carboxylic acids	4	4	No variation
Identification of salts of carboxylic acid	2	2	No variation
Identification of acid amides and acid imides	2	2	No variation
Identification of amines and aniline salts	2	2	No variation
Scheme for identification of unknown organic compounds	4	4	No variation
Training on the scheme for identification of unknown organic compounds	4	4	No variation
Final practical exam. Including sheet exam.	2	2	No variation

2 Course components (total contact hours per semester):				
Lecture: 45	Tutorial:	Laboratory 30	Practical/Field work/Internship	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average :for the semester not a specific requirement in each week)

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

- A brief summary of the knowledge or skill the course is intended to develop;
- A description of the teaching strategies to be used in the course to develop that knowledge or skill;
- The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

**a. Knowledge**

<p>(i) Description of the knowledge to be acquired</p> <ol style="list-style-type: none"> <li>1- Know the properties of the various groups of organic compounds.</li> <li>2- Applies what he has learned about how to prepare organic compounds.</li> <li>3- Distinguishes between the organic compounds from each other, and recognize the chemical structure for these organic compounds</li> </ol>
<p>(ii) Teaching strategies to be used to develop that knowledge</p> <ul style="list-style-type: none"> <li>- Lecture</li> <li>- Discussion</li> <li>- Problem Solving</li> </ul>
<p>(iii) Methods of assessment of knowledge acquired</p> <ul style="list-style-type: none"> <li>- Midterm exams</li> <li>- Participation in the discussion</li> <li>- Home works</li> </ul>
<p><b>b. Cognitive Skills</b></p>
<p>(i) Description of cognitive skills to be developed</p> <ul style="list-style-type: none"> <li>- Skill of how to prepare organic compounds known</li> <li>- Skill of how to identify unknown organic compounds</li> <li>- Skill of how to differentiate between organic compounds which belong to different groups</li> <li>- Skill of how to differentiate between organic compounds which belong to the same group</li> </ul>
<p>(ii) Teaching strategies to be used to develop these cognitive skills</p> <ul style="list-style-type: none"> <li>- Practical presentations delivered by teaching assistants and lecturers, under the supervision of the instructor.</li> <li>- Practical presentations delivered by students under the supervision of the instructor.</li> </ul>

<p>(iii) Methods of assessment of students cognitive skills</p> <ul style="list-style-type: none"> <li>- Written and oral tests</li> <li>- Monitoring the performance of students in the lecture and lab</li> </ul>
<p><b>c. Interpersonal Skills and Responsibility</b></p>
<p>(i) Description of the interpersonal skills and capacity to carry responsibility to be developed</p> <ul style="list-style-type: none"> <li>- Student can work with his colleagues in the lab.</li> <li>- Students can exchange of tools and hardware during the lab duration</li> <li>- Self-reliance in the carrying out experiments and writing results and conclusion.</li> </ul>
<p>(ii) Teaching strategies to be used to develop these skills and abilities</p> <ul style="list-style-type: none"> <li>- Collaborative learning</li> <li>- Working as team work</li> </ul>
<p>(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility</p> <ul style="list-style-type: none"> <li>- Assignments and reports.</li> <li>- a note card to the skill of relationships with others (Assistant, Inhibitor and Oblivious )</li> </ul>
<p><b>d. Communication, Information Technology and Numerical Skills</b></p>
<p>(i) Description of the skills to be developed in this domain.</p> <ol style="list-style-type: none"> <li>1- - The ability to deal with computers</li> <li>2- The skill of how to calculate the results of numerical experiments.</li> <li>3- Using calculator to check the results</li> </ol>
<p>(ii) Teaching strategies to be used to develop these skills</p> <ol style="list-style-type: none"> <li>1- Demonstration</li> <li>2- The use of computers.</li> </ol>
<p>(iii) Methods of assessment of students numerical and communication skills</p> <ol style="list-style-type: none"> <li>1- The use of e-learning in student evaluation</li> </ol>

2 - Written and oral tests
<b>e. Psychomotor Skills (if applicable)</b>
(i) Description of the psychomotor skills to be developed and the level of performance required
(ii) Teaching strategies to be used to develop these skills
(iii) Methods of assessment of students psychomotor skills

5. Schedule of Assessment Tasks for Students During the Semester			
Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	First midterm exam	5	10 %
2	Practical test reports and assignments	5 and 10	25 %
3	Second midterm exam	10	10 %
4	Home works	Continuous	5%
5	Final exam	The end of the semester	50 %

## D. Student Support

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

Office Hours ( 10 hours per week )

## E Learning Resources

1. Required Text(s)

Organic Chemistry, for John McMurry , eighth edition, 2010

2. Essential References

1- Advanced Organic Chemistry; Michael B. Smith and Jerry March

2- Advanced Organic Chemistry 4th edition; Francis A. Carey and R. J. Sundberg

3- Recommended Books and Reference Material (Journals, Reports, etc) (Attach List)

1-"Experimental Organic Chemistry: A Miniscale Approach" (Brooks/Cole) Laboratory Series For Organic Chemistry) Brooks Cole, 2005.

4-.Electronic Materials, Web Sites etc

**<http://www.chemguide.co.uk/mechanisms/freerad/whatis.html#top>**

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

1- ChemDraw Ultra 10.0, for draeing structures

2- DVD disks

3- Power point program for presentation

## F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

- Accommodation (Lecture rooms, laboratories, etc.)



<ul style="list-style-type: none"> <li>• Lecture halls, laboratories, ----- etc</li> <li>• Exhibition halls</li> <li>• data show</li> </ul>
<p>2. Computing resources</p> <ul style="list-style-type: none"> <li>• Hall contain at least 30 computer .</li> <li>• Chem draw or ISIS draw programs.</li> <li>• Internet access.</li> </ul>
<p>3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)</p> <ul style="list-style-type: none"> <li>• Lab equipments includes glass wares and instruments.</li> <li>• Lab emergency</li> <li>• Lab pharmacy</li> </ul>

## G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> <li>• Fill course report and analysis the outcome of leaning (feedback) to improve the learning process.</li> <li>• Direct and continuous with the students during lecturer and via blackboard.</li> </ul>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> <li>• Head of Department reports</li> <li>• Revise the course file and course report by the aid of other colleagues in the same field.</li> <li>• Revise the course file and course report by the National Commission for Academic Accreditation &amp; Assessment.</li> <li>• Participation in workshop concerning Academic Accreditation &amp; Assessment.</li> </ul>
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> <li>- Participation in workshop dealing with the different method of teaching.</li> <li>- Revise the teaching strategy.</li> <li>- student working sessions between the powerful and the powerless under the supervision of the instructor</li> </ul>

4. Processes for Verifying Standards of Student Achievement (eg. 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)

- Check the correction of exam paper by another partner.
- Correction of exam paper by more than one person.

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

- Review of modern scientific journals in specialization
- Follow-up to the electronic sites in specialization