Kingdom of Saudi Arabia

The National Commission for

Academic Accreditation & Assessment

Course Specifications

Organic analytical chemistry

402214

Institution: **Umm Al-qura University**	Date of Report: **2017**
College/Department : **Faculty of Applied Science/ department of chemistry**	

A. Course Identification and General Information

1. Course title and code: **Organic Analytical Chemistry 402214**
2. Credit hours: **2 (1+1) hrs.**
3. Program(s) in which the course is offered. **Chemistry program**
4. Name of faculty member responsible for the course: **Dr. Amr L Saber**
5. Level/year at which this course is offered: **4th level / 2rd year**
6. Pre-requisites for this course (if any): **Volumetric Analysis Chemistry 402112**
7. Co-requisites for this course (if any)---
8. Location if not on main campus: **both on El-Abedyah, and El-Zaher**
9. Mode of Instruction (mark all that apply)

a. Traditional classroom	■	What percentage?	**50%**
b. Blended (traditional and online)	■	What percentage?	**20%**
c. e-learning		What percentage?	
d. Correspondence		What percentage?	
f. Other	■	What percentage?	**30%**

Comments:

B Objectives

1. What is the main purpose for this course? **1.1.** Demonstration analytical methods which include the analysis of organic compounds **1.2.** Know the different function groups in organic compounds **1.3.** Determination of the state of unsaturation in organic compounds **1.4.** Stress the different analytical methods to determine organic compounds in real samples **1.5.** Recognize the formation method of oxime
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) **The students will be mentioned to prepare an essay or a report from literature using the library, data base services, and/or websites to follow up and update the new topics of the subject of the course**

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
a. Determination of elements in organic compounds	1	1
b. Determination of Carboxylic acids	1	1
c. Determination of esters	1	1
d. Determination of amino groups	1	1
e. Determination of hydroxylic groups	1	1
f. Determination of carbonyl groups and their derivatives	1	1
g. Determination of nitro and nitroso groups	1	1
h. Determination of the state of unsaturation in organic compounds	1	1
i. Midterm exam	1	1
j. Determination of thiolate, sulphide and epoxy compounds	1	1
k. Determination of organic peroxide	1	1
l. Determination of isothiocynate and isocynate	1	1
m. Discussion the formation method of oxime (equilibrium and kinetic study) as a model in organic analytical chemistry	1	1
n. Revision	1	1

Practical Part:

- **Determination of elements(C, H, O, N,…) in organic compounds.**
- **Determination of formaldehyde concentrations in their solutions**
- **Determination of acetone concentrations in their solutions**
- **Determination of amino group**
- **Determination of hydroxyl group**
- **Determination of equivalent weight for carboxylic acid**
- **Determination of the strength of aniline solution**
- **Determination of reduced saccharide**
- **Determination of the equivalence of ester saponification**
- **Determination of amino-acids**

- **Revision**
- **Exam**

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	14	-		36		50
Credit	1	-		1		2

3. Additional private study/learning hours expected for students per week.	1 h

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Recognize principles of organic analysis in analytical chemistry.	• Lectures • Scientific discussion • Library visits • Web-based study	• Exams • web-based student performance systems • portfolios • long and short essays • posters lab manuals
1.2	Identify the classification of organic analysis methods		
1.3	Know the procedures of elemental analysis		
1.4	Define the concentration parameters		
1.5	Recognize the meaning of equivalent weight and saponification		
1.6	Describe statistical methods in organic analysis.		
1.7	Select the proper method to determine the strength of aniline solution		
1.8	Demonstrate the state of unsaturation in organic compounds		
1.9	Recognize the formation method of oxime (equilibrium and kinetic study) as a model in organic analytical chemistry		
1.10	Outline application important		
2.0	**Cognitive Skills**		
2.1	Apply the suitable methods for elemental analysis	• Lectures • Scientific discussion • Library visits	• Exams • web-based student performance systems • portfolios
2.2	Compare the different types of hetero-organic compounds analysis		
2.3	Explain principles of organic analysis methods		

	and its classification	• Web-based study	• posters • demonstrations
2.4	Analyze deferent amino-acids compounds		
2.5	Summarize the principles of organic analysis		
3.0	**Interpersonal Skills & Responsibility**		
3.1	Illustrate the principles of organic methods and its classification	• Lectures • Scientific discussion • Web-based study	• Exams • web-based student performance systems
3.2	Analyze amino, carboxylic, halo and sulpha compounds		
4.0	**Communication, Information Technology, Numerical**		
4.1	Appraise the organic analysis in analytical chemistry	• Lectures • Scientific discussion • Library visits • Web-based study	• web-based student performance systems • individual and group presentations
4.2	Demonstrate elemental analysis, saponification and the formation method of oxime		
5.0	**Psychomotor**		
5.1	NOT APPLICABLE		
5.2			

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Exam	5-14	20%
2	Assignments		10%
3	Practical Exam	15	30%
4	Final Exam	16	40%

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)

- **We have faculty members to provide counseling and advice.**
- **Office hours: During the working hours weekly.**
- **Academic Advising for students.**

E. Learning Resources

1. List Required Textbooks • Douglas A. Skoog, Donald M. West, James F. Holler and Stanley R. Crouch, ***Analytical Chemistry***, 7th edition, Springer (2014)
2. List Essential References Materials (Journals, Reports, etc.) • Lecture Hand outs available on the coordinator website
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) • Gary D. Christian, Purnendu K. Dasgupta and Kevin A. Schug, ***Analytical Chemistry***, 7th edition, WILEY (2014) • Douglas A. Skoog, Donald M. West, James F. Holler and Stanley R. Crouch, *Analytical Chemistry*, 7th edition, Springer (2014)
4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.) • **http://www.chemweb.com** • **http://www.sciencedirect.com** • **http://www.rsc.org**
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

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.) • **Classrooms capacity (30) students.** • **Providing hall of teaching aids including computers and projector.**

2. Computing resources (AV, data show, Smart Board, software, etc.) ▪ **Room equipped with computer and projector and TV.**
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) • **No other requirements.**

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching Complete the questionnaire evaluation of the course in particular.
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor • **Observations and the assistance of colleagues.** • **Independent evaluation for extent to achieve students the standards.**

- **Iindependent advice of the duties and tasks.**

3 Processes for Improvement of Teaching

- **Workshops for teaching methods.**
- **Continuous training of member staff.**
- **Review of strategies proposed.**
- **Providing new tools for learning.**
- **The application of e-learning.**
- **Eexchange of experiences internal and external.**

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)

- **Check marking of a sample of exam papers, or student work.**
- **Exchange corrected sample of assignments or exam basis with another staff member for the same course in other faculty.**

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

- **Periodic Review of the contents of the syllabus and modify the negatives.**
- **Consult other staff of the course.**
- **Hosting a visiting staff to evaluate of the course.**
- **Workshops for teachers of the course.**

Faculty or Teaching Staff: **Dr. Amr L Saber**

Signature: **Date Report Completed: 2016**

Received by: Dr Hatem Altass **Department Head**

Signature: _____ **Date: _____**