

**ATTACHMENT 5.**

**Kingdom of Saudi Arabia**  
**The National Commission for Academic Accreditation &**  
**Assessment**

**T6. Course Specifications**  
**(CS)**

## Course Specifications

Institution: <b>King Khalid University</b>	Date: 12/7/1437
College/Department : <b>Faculty of Science/ Chemistry Department</b>	

### A. Course Identification and General Information

1. Course title and code: <b>Organic Chemistry for Medicine Students, Chem111</b>			
2. Credit hours: <b>3 (2+1)</b>			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) <b>B.Sc. Medicine, B.sc. Pharmacy, B.sc. dentistin</b>			
4. Name of faculty member responsible for the course: <b>Dr. Mohamed Hammad Adam Suleiman</b> <b>Dr. Adel Al-Ghazzawi</b> <b>Dr. Ali Abbas Ateeg</b>			
5. Level/year at which this course is offered: <b>2/1</b>			
6. Pre-requisites for this course (if any): <b>None</b>			
7. Co-requisites for this course (if any): <b>Practical course: Qualitative analysis (Functional group analysis)</b>			
8. Location if not on main campus: <b>El-Mahala</b>			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

## B Objectives

<p>1. What is the main purpose for this course?</p> <ul style="list-style-type: none"> <li>• Acquiring the students the basic skills of identification and physical and chemical properties of basic organic compounds.</li> <li>• Define the functional groups in organic compounds.</li> <li>• Recognize the different types of organic chemical reactions.</li> <li>• Understand the different methods used in preparation of different types of organic compounds.</li> <li>• The ability to investigate the reaction mechanism of electrophilic aromatic substitution.</li> <li>• The ability to outline suitable synthetic routes of some organic compounds.</li> </ul>
<p>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)</p> <ul style="list-style-type: none"> <li>• E- learning using computer.</li> <li>• Drawing structures &amp; using models.</li> <li>• Training on representative solved problems</li> <li>• Work effectively both in a team and independently on solving the problems to get the right pathway for reaction.</li> <li>• communicate effectively with his teacher and colleagues.</li> </ul>

## 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
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>• Introduction of Organic Chemistry Bonding in carbon atoms and Hybridization.</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>• Introduction and Lab safety</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>• Introduction of Organic Chemistry Chemical structures, Isomerism and Functional groups.</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>• Investigation of the functional groups of organic compounds: Liquid Organic compounds: Alcohols</li> </ul>	1	2

<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alkanes and Cycloalkanes Introduction and Nomenclature</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Investigation of the functional groups of organic compounds: Liquid Organic compounds: Alcohols</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alkanes and Cycloalkanes Physical properties, Isomerism and Reactions</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Liquid Organic compounds: Identification of Aldehydes and Ketones</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alkenes: Structure of alkenes, Naming alkenes and Cycloalkenes. Cis-trans Isomerism in alkenes and Physical properties of alkenes</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Liquid Organic compounds: Identification of Carboxylic acids</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alkenes: Reactions of Alkenes</li> <li>Dienes</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Solid Organic compounds: Identification of Carboxylic acids</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alkynes: Nomenclature, Structure, Isomerism and reactions of Alkynes</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Solid Organic compounds: Identification of Salts of Carboxylic acids</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Benzene and Aromatic compounds: Structure of Benzene and Naming Derivatives of Benzene</li> <li>Electrophilic Aromatic Substitution Reactions</li> </ul>	1	2
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Identification of some solid organic compounds: Phenols</li> </ul>	1	2
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Benzene and Aromatic compounds: Electrophilic Aromatic Substitution Reactions, Effects of the Substituents on Benzene ring and Synthetic Applications</li> </ul>	2	4
<p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Identification of simple aliphatic acid and aromatic acids Identification of salts of acids , Amides and Imides</li> </ul>	1	2

<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Alcohols, Phenols and Ethers: Nomenclature, Physical properties and Reactions and Isomerism</li> <li>Aldehydes &amp; Ketones: Nomenclature and Isomerism and Reactions</li> </ul> <p><b><u>Practical part</u></b></p> <ul style="list-style-type: none"> <li>Identification of carbohydrates Scheme for identification of unknown carbohydrates</li> </ul>	2	4
<p><b><u>Theoretical part</u></b></p> <ul style="list-style-type: none"> <li>Carboxylic acid and Amines</li> </ul> <p><b><u>Practical part</u></b></p> <p>Scheme for identification of unknown liquid and solid organic compounds</p>	2	4
	1	2
	1	2

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

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	<b>28</b>			<b>28</b>		<b>28</b>
Credit	<b>2</b>			<b>1</b>		<b>3</b>

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

<b>None</b>
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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 And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Understanding the basic principle of organic chemistry.	Lectures, Practical sessions	<ul style="list-style-type: none"> <li>• Two mid-term exams</li> <li>• Continuous assessment and solving problems</li> <li>• Final exam</li> </ul>
1.2	Identification the physical and chemical properties of different organic families.	Solved problems, Homework	
1.3	Differentiation between organic compounds.		
<b>2.0</b>	<b>Cognitive Skills</b>		
2.1	Preparation of known organic compounds.	Practical presentation by demonstrator under the supervision of lab supervisor.	<ul style="list-style-type: none"> <li>• Written and Oral exams.</li> <li>• Lab note</li> </ul>
2.1	Identification of unknown organic compound.		
2.3	Differentiation between primary, secondary and tertiary alcohols. Differentiation between aromatic and aliphatic compounds.	Practical presentation by students under the supervision of lab supervisor.	
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
3.1	Modify the work independently and as part of a team. Ability of student to do experimental alone.	Cooperative learning Work in groups	<ul style="list-style-type: none"> <li>• Lab note</li> <li>• Tutorial &amp; Reports</li> </ul>
3.2	Use learning resources such as lecture textbooks, website and scientific literatures.		
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.1	Ability to use Computer Ability to work on different types of instruments in lab. Ability to count and analysis the results of experimental using different types of program.	Practical presentation Data show presentation and visual lab simulation.	<ul style="list-style-type: none"> <li>• Lab note</li> <li>• Written and Oral Exams.</li> <li>• Tutorials using Blackboard <i>via</i> electronic learning.</li> </ul>
4.2	explain numerical skills in solving chemistry problems.		
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Not found	Not found	Not found

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 Specifications)										
	1.1	1.2	1.3	2.1	2.2	2.3	3.1	3.2	4.1	4.2	5.1
1.1											
2.1											
3.1											
4.1											
5.1											

6. 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	1 <sup>st</sup> mid-exam	7	10%
2	2 <sup>nd</sup> mid-exam	12	10%
3	Tutorials on Blackboard	continuous	5%
4	Practical exams	Continuous	25%
5	Final Written exam	16	50%

#### 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)

- Office hours (10 h/w) + by appointment + Occasionally help session

## E. Learning Resources

1. List Required Textbooks <ol style="list-style-type: none"><li>1. <b>Basic Organic Chemistry for the Life Sciences</b> By Hrvoj Vančik, Springer</li><li>2. <b>Organic Chemistry</b> By John McMurry, Eighth Edition (2008)</li></ol>
2. List Essential References Materials (Journals, Reports, etc.)
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) <b>R. T. Morrison, R. N. Boyd; Organic Chemistry, 6 ed., Prentice Hall, 1992.</b>
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. <a href="http://www.chemguide.co.uk/mechanisms/freerad/whatis.html#top">http://www.chemguide.co.uk/mechanisms/freerad/whatis.html#top</a>
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. <ul style="list-style-type: none"><li>• <b>Data show</b></li></ul>

## 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.) <ul style="list-style-type: none"><li>• <b>Classrooms contain Data Show with not more than 40 seats.</b></li><li>• <b>Laboratories with the necessary tools and not more than 20 seats.</b></li><li>• <b>Blackboard.</b></li></ul>
2. Computing resources (AV, data show, Smart Board, software, etc.) <ul style="list-style-type: none"><li>• <b>Hall contain at least 30 computer .</b></li><li>• <b>Chems sketch or ISIS draw programs.</b></li></ul>
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) <ul style="list-style-type: none"><li>• <b>Lab equipment includes glass and instrument.</b></li><li>• <b>Lab emergency</b></li><li>• <b>Lab pharmacy</b></li><li>• <b>Save tools.</b></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>• <b>Fill course report and analysis the outcome of leaning (feedback) to improve the learning process.</b></li><li>• <b>Direct and continuous with the students during lecturer and via blackboard.</b></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>• <b>Revise the course file and course report by the aid of other colleagues in the same field.</b></li><li>• <b>Revise the course file and course report by the National Commission for Academic Accreditation &amp; Assessment.</b></li><li>• <b>Participation in workshop concerning Academic Accreditation &amp; Assessment.</b></li></ul>
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"><li>• <b>Participation in workshop dealing with the different method of teaching.</b></li><li>• <b>Revise the teaching strategy.</b></li></ul>
<p>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)</p> <ul style="list-style-type: none"><li>• <b>Check the correction of exam paper by another partner.</b></li><li>• <b>Correction of exam paper by more than one person.</b></li></ul>
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"><li>• <b>Course specification to improve the feedback.</b></li></ul>

Name of Instructor: **Dr. Mohamed Hammad Adam Suleiman**

Signature: *Suleiman MHA*

Date Report Completed: **13/7/1437**

Name of Field Experience Teaching Staff:

1. **Dr. Mohamed Hammad Adam Suleiman**
2. **Dr. Adel Al-Ghazzawi**
3. **Dr. Ali Abbas Ateeg**

Program Coordinator: \_\_\_\_\_

Signature: \_\_\_\_\_

Date Received: \_\_\_\_\_