



Sub.	Course Syllabus	منهج المادة (البرنامج الدراسي)	الموضوع	 كلية المعرفة ALMAAREFA COLLEGE
Year	2015/2016		العام	


College	Al-Maarefa College For Science and Technology
Department	Preparatory year

Course Code	Chem101
Course Name	Chemistry
Credit Hours	4(3+1+0)
Instructor	Azza Mohammed
Office & Office Hours	4
Email	amohammed@mcst.edu.sa

Course Description	This course is a comprehensive introduction in all aspects of general and organic chemistry, for freshmen. This course will quality the students and prepares them with chemistry knowledge to further their studies.
Prerequisite(s)	none
Textbook(s) & Supplementary Materials	<p><i>Primary: :</i> 1-Theodore L. Brown; H. Eugene LeMay, Jr.; and Bruce E. Bursten <i>Chemistry, The Central Science, 11th edition</i> 2-James E. Brady general chemistry, principles and structure Latest Edition. John Wiley and sons, New york</p> <p><i>Optional -Ralph J. Fessenden. Organic chemistry. Latest Edition. Brooks/ Cole publishing company California</i></p>
Student Outcomes (SO) Addressed by the Course	<ul style="list-style-type: none"> • Ability to understand chemical reactions and chemical equations. • Ability to clearly understand electronic and atomic structure of elements. • Ability to clearly understand Physical properties of the solution. • Ability to comprehend principals of organic chemistry such as structure, nomenclature, classification and stereochemistry. • Ability to qualitatively analyze inorganic salt through identification of acid and basic radicals.
Major Topics Covered	<ul style="list-style-type: none"> • Law of chemical combinations &Molecular mass and formula mass • Chemical reactions and chemical equation, the mole concept


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	<ul style="list-style-type: none"> Theoretical yield and percentage yield Periodic table and some properties of the elements Electronic, atomic structure of elements Chemical bonding, general concept Of chemical bonding Chemical reactions and the periodic table Physical properties of solutions Acid-base equilibrium in aqueous solutions solubility product principal Introduction to principals of organic chemistry Nomenclature, classification, preparation and reactions of various chemical functional groups Aromaticity, benzene and substituted 	
Assessment & Evaluation Plan for the Course	<i>Homework Assignments</i>	3 marks
	<i>Quizzes</i>	5 marks
	<i>Lab / Tutorial</i>	20 marks
	<i>Project / Presentations</i>	2 marks
	<i>Two Midterm Exams</i>	40 marks
	<i>Final</i>	30 marks
Policies	<ol style="list-style-type: none"> Type all homework, you may use some tools e.g., MS Office Students can discuss homework, but not to copy from each other, according to the college regulations the minimum penalty of plagiarism is failing the course or should repeat the homework. Late Submission Penalty is a notice for the first time; late submission again will result in deducting points of the homework. Students can prepare presentations in groups, but they can't copy from the Internet, doing so will result in losing their presentation marks 	

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CALENDAR & OUTLINE OF TOPICS


WEEK	DATE	TOPICS	DUTIES/TASKS DUE DATES
1		Introduction	-----
2		Law of chemical combinations & Molecular mass and formula mass	
3		Chemical reactions and chemical equation, the mole concept	
4		Theoretical yield and percentage yield	(H.W)
5		ADHA VACATION	
6		Electronic, atomic structure of elements	(H.W) Quiz 1
7		Periodic table and some properties of the elements	
8		Chemical reactions and the periodic table	(H.W) Quiz 2
9		IstMid-term	Revision
10		Chemical bonding, general concept of chemical bonding	(H.W)
11		Physical properties of solutions	(H.W)
12		Acid-base equilibrium in aqueous solutions & solubility product principal	Quiz3
13		2nd MID-TERM EXAM	Revision
14		Acid-base equilibrium in aqueous solutions & solubility product principal	
15		Introduction to principals of organic chemistry & Nomenclature, classification	
16		Preparation and reactions of various chemical functional groups	Quiz 4
17		REVISION + PROJECT PRESENTATION	
18		FINAL EXAMS	

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College	Almaarefa
Department	Preparation

Course Code	101 Chem
Course Name	Laboratory of general chemistry
Credit Hours	1
Instructor	Ohaud Albatati
Office & Office Hours	4
Email	obatati@mcst.edu.sa


Course Description	This course covers the fundamental of practical chemistry in many chemical departments such as: qualitative analysis, quantitative analysis, volumetric analysis and organic chemistry.	
Prerequisite(s)		
Textbook(s) & Supplementary Materials	Primary: 101chem manual lab experiment Optional: (أحمد عمر بغلف, دكتور سيد علي مرعي, دكتور رفيع حسن أبو عيطة) المبادئ العملية في الكيمياء العامة لدكتور (Petrucci, Herring, Madura and Bissonette) General Chemistry	
Student Outcomes (SO) Addressed by the Course	a) The ability to understand chemical key concept from the experiment process and develop scientific thinking. b) The ability to write a clear lab report. c) The ability to develop their mathematical skill by solving quantity problems in general chemistry. d) The ability to work in team. e) Work in chemistry lab may rise a Self-confidence and promptitude for chemistry students	
Major Topics Covered	1. Introduction 2. Identification of anions and cations. 3. Titration 4. Organic chemistry to distinguish between some organic compounds in terms of their bonds order and their functional groups.	
Assessment & Evaluation Plan for the Course	Homework Assignments (report)	5 points
	Quizzes	1 point
	Practical exam	5 points
	Project	1 points
	final Exam	8 points

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	Final 10	??? points
Policies	4. Type all homework, you may use some tools e.g., MS Office, Visio, etc. 5. Students can discuss homework, but no copying!, according to the college bylaws the minimum penalty of plagiarism is failing the course. 6. Late Submission Penalty 1 mark 7. Weekly report is required	

CALENDAR & OUTLINE OF TOPICS

WEEK	DATE	TOPICS	DUTIES/TASKS DUE DATES
1		Introduction <ul style="list-style-type: none"> Laboratory safety Laboratory apparatus General identify for the require experiments during this semester
2		Identification of anions Group1 <ul style="list-style-type: none"> Carbonate CO_3^{-2} & HCO_3^{-1} Sulphite SO_3^{-2} Phosphate PO_4^{-3} 	
3		Identification of anions (cont.) Group2 <ul style="list-style-type: none"> Chloride Cl^- Bromide Br^- Iodide I^- Group3 <ul style="list-style-type: none"> Nitrate NO_3^- 	
4		Identification of cations Group1 <ul style="list-style-type: none"> Lead Pb^{+2} Silver Ag^+ Group2 <ul style="list-style-type: none"> Copper Cu^{+2} Group3 <ul style="list-style-type: none"> Ferrous Fe^{3+} Aluminum Al^{+3} 	Quiz 1

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		Group4 <ul style="list-style-type: none"> • Zinc Zn^{+2} • Cobalt Co^{2+} 	
5		Vacation	Vacation
6		Review	Review
7		Identification of cations (cont.) Group 5 <ul style="list-style-type: none"> • Barium Ba^{+2} • Calcium Ca^{+2} Group 6 <ul style="list-style-type: none"> • Potassium K^{+} • Sodium Na^{+} Ammonium NH_4 	
8		Identification unknown salt	Review
9		Standard solution Preparation of standard solution of Sodium Hydrogen Carbonate and Sodium Carbonate.	
10		Titration Determine the concentration of NaOH by titrate it with a standard solution of HCl.	
11		Practical exam	Practical exam
12		Titration (cont.) Determine the concentration of Potassium Hydroxide by titrate it with a standard solution of Sulphuric Acid. Organic chemistry Hydrocarbon (alkanes & alkenes)	

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13		Organic chemistry (cont.) Identification test for primary, secondary and tertiary alcohols (Lucas test).	
14		Identification test for Aldehyde and ketones. (2, 4-dinitrophenyl hydrazine test). Identification test to distinguish between aldehydes and ketones. (silver Mirror test)	
15		Quiz2 in Titration Determine the concentration of acetic acid by titrate it with a standard solution of sodium hydroxide.	project
16		Review	Review
17		written Final exam &(OSPE)Practical final exam	FINAL EXAMS