



المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CHEM 110)



هيئة تقويم التعليم
Education Evaluation Commission

Course Specifications

Institution: **Al Mahala Campus**

Date: 9/2/1441

College/Department : **Faculty of Science – Chemistry Department**

A. Course Identification and General Information

1. Course title and code: General Chemistry (110Chem.-2)			
2. Credit hours 2: Theoretical + Practical (1 + 1)			
3. Program(s) in which the course is offered: (If general elective available in many programs indicate this rather than list programs): Bachelor of Health Sciences			
4. Name of faculty member responsible for the course: Group of staff			
5. Level/year at which this course is offered: L2/Y1			
6. Pre-requisites for this course (if any): None			
7. Co-requisites for this course (if any): None			
8. Location if not on main campus: Academic Campus in Mahala			
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

1. What is the main purpose for this course?

- Teaching the students the general concepts of basic inorganic, physical and analytical chemistry such as: atomic structure, chemical bonding, periodic table, Intermolecular forces and chemical calculations.

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)?

- Using different strategic teaching (white board and power point presentation)
- Students can download course material which can be helpful for the students learning
- Updating the contents of the syllabus
- E-Learning System is being introduced
- Problem solving skills, relating to qualitative and quantitative information

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

Course Description:

Chemistry 110 is a general introduction to chemistry course that incorporates both lectures and laboratory experiments in developing and understanding theoretical chemical concepts and practices.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
The scientific method and properties of matter.	1	1
Classification of matter and measurements of matter(SI) units	1	1
Density and percent composition	1	1
Uncertainties in scientific measurements and significant figures	1	1
Laws of chemical combination and Dalton's theory; atomic structure and Atomic masses and the mole concept.	1	1
Measuring moles of atoms, compounds and chemical mass and formula mas.	1	1
Percentage composition and chemical formula.	1	1
Uncertainty in measurements	1	1
Mid Term Exam	1	1
Empirical formula and molecular formula	1	1
Classification of elements: the modern theory of atomic structure and elements configuration. The periodic law, metals and nonmetals, their ions, sizes of atoms and ions	1	1
Ionization energy and electronegativity and periodic properties of elements	1	1
States of matter and intermolecular Forces	1	1

Intermolecular forces involving polar nonpolar molecules. Dipole Dipole forces, hydrogen bonding and London dispersion forces	1	1
Phase diagram & Properties of liquids	1	1

List of Topics	No. of Weeks	Contact hours
a) Practical		
Safety and demonstration of using basic glassware and tools used in chemical analysis	1	2
Volumetric analysis	2	4
Titration of acids	1	2
Titration of bases	1	2
Titration of mixtures	1	2
Determination of total hardness of water	1	2
Oxidation reduction reactions	1	2
Titration of iron (Fe) with potassium permanganate	1	2
Determination of copper (Cu) by sodium thiosulphate	1	2
Determination of NaCl by silver nitrate	1	2
Final practical exam	1	2

2. Course components (total contact hours and credits per semester): 35

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	15	0		24		39
	Actual	15	0		24		39
Credit	Planned	1			1		2
	Actual	1			1		2

3. Additional private study/learning hours expected for students per week. None

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

- 1- Explain different examples of matter
- 2- Different web sites on the internet explain the atomic structure
- 3- Many text books in library demonstrate the importance of organic compounds

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
1.0	Knowledge		
1.1	Classify the different types and states of matter.	Theoretical lectures	Midterm-Exam
1.2	Define the chemical-related terms	Through traditional classroom. - Supplying lecturers and videos using E-learning (Bb)	Final Exam - Homework using Blackboard (Bb)
1.3	Determine the types of molecular forces	Lectures , Interactive teaching sessions	Written exams, electronic quizzes
1.4	Describe the electronic structure of atoms		
1.5	Clarify the different measuring units		
1.6	Demonstrate the different properties of elements of modern periodic table		
2.0	Cognitive Skills.		
2.1	Differentiate between laws of stoichiometry	Theoretical lectures through traditional classroom. - Supplying lecturers and videos using E-learning (Bb)	Midterm-Exam Final Exam Quizzes using Blackboard (Bb)
2.2	Compare between intra-and intermolecular forces	Lectures, problem solving sessions	Written exams, electronic quizzes
2.3	Apply the mathematical equations to solve problems	Lectures, problem solving sessions	Written exams, electronic quizzes
2.4	To manipulate chemicals by applying safety procedures	Laboratory sessions	Short exams and lab reports
3.0	Interpersonal Skills & Responsibility		
3.1	Share with their classmates to do as a team work	Assigning the student to explain some lessons for his classmates	Supervising students when working individually and in a group -
3.2	Tolerate the tasks that must be done	Urged the students to	Follow-up homework

		accomplish their duties is collective self	
3.3	Lead a group of students to conduct a specific task	Urged the students to accomplish their duties is collective self	Follow-up homework
4.0	Communication, Information Technology, Numerical Using the computer Practical skills		
4.1	Communicate with their classmates and their teacher via different multimedia (Social media, E-mail, Course mail, ...etc)	- Theoretical lectures through traditional classroom. - Assigning the students to search via internet for gathering the scientific information	- Assignment via blackboard - Solving mathematical problems in Midterm and final exam
4.2	Use the computing technology to update and research final exams the scientific information	Using available search engines and Information Technology.	E-learning
4.3	To work effectively in diverse teams in	To work effectively in diverse teams in	To work effectively in diverse teams in
5.0	Psychomotor:		
5.1	N/A		

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	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	4.1	4.2	4.3
1.1	√															
1.2		√														
1.3			√													
1.4				√												
1.5					√											
1.6						√										
2.1							√									
2.2								√								

2.3									√							
2.4										√						
3.1											√					
3.2												√				
3.3													√			
4.1														√		
4.2															√	
4.3																√

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	homework	continuous	2.5%
2	quiz	continuous	2.5%
3	Mid-term exam	9	20%
4	Practical exam	14	25 %
5	Final exam	16	50 %

D. Student Academic Counseling and Support

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 hrs/week. - Additionally, teachers are available at their offices for any inquiries from students and advice

E Learning Resources

1. List Required Textbooks: - Essential Chemistry, Atoms, Molecules and Compounds. Phillip Manning, Copyright © 2008 by Info base Publishing. - Essential of Chemistry. Søren Prip Beier & Peter Dybdahl Hede, Chemistry 2nd edition © 2010, Venlusb Publishing Aps, ISBN 978-87-7681-535-6..

2. List Essential References Materials (Journals, Reports, etc.): Textbook of physical chemistry (Glasstone, S.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc): - Analytical chemistry, G.D. Christian 6th edition, John Wiley & Sons, 2003

4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.: - <http://www.chem1.com/chemed/> - <http://www.dac-euchems.org/reports/education/index.html> - http://en.wikipedia.org/wiki/Analytical_chemistry

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

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.) - One classroom equipped with 60 student seats. - One laboratory for general chemical analysis equipped with 30 student seats.
2. Computing resources (AV, data show, Smart Board, software, etc.) - One computer for teacher in the classroom. - Data show for power point presentation
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching: - Confidential completion of course performance evaluation questionnaire.
2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department: - Discussion with other staff members. - Discussion with the students
3 Processes for Improvement of Teaching: - Training courses on development of teaching performance. - Training courses on educational technology
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): - Oral examination by external examiner. - Student exam papers exchange with other universities. - Student competition in a national level.)

Name of Course Instructors **Dr/ Saifeldin M. Siddeeg and Dr. Zouhaier Khalifa Aloui**

Signature: _____ Date Specification Completed: October 10, 2019

Program Coordinator: Dr. Mohamed H.A. Suleiman

Signature: _____ Date Received: