

T6. Course Specification (CS)

Institution Najran University	Date: 2/6/2017
College/Department : Sciences & Arts / Chemistry	

A. Course Identification and General Information

1. Course title and code : General Chemistry (2) (102 Chem -4) :			
2. Credit hours : 4 hours per week (3+1)(Theoretical + practical)			
3. Program(s) in which the course is offered. Chemistry (If general elective available in many programs indicate this rather than list programs)			
4. Name of faculty member responsible for the course : Prof. Abou-El-Hamd H. Mohamed			
5. Level/year at which this course is offered: Second level			
6. Pre-requisites for this course (if any) : General Chemistry (1) (101 Chem-4)			
7. Co-requisites for this course (if any) : N.A.			
8. Location if not on main campus : Main Campus			
9. Mode of Instruction (mark all that apply)			
a. Traditional classroom	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
b. Blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage ?	<input type="checkbox"/> 100%
c. e-learning	<input type="checkbox"/>	What percentage ?	<input type="checkbox"/>
d. Correspondence	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
f. Other	<input type="checkbox"/>	What percentage % ?	<input type="checkbox"/>
Comments :			

B. Objectives

1. What is the main purpose for this course?

1 - Introduce the basic principles of general chemistry, atomic structure and electronic configuration.

2 - Introduce the basic principles of atomic spectra, geometric, Shape of molecule, bonding and their application.

3- Classify the aliphatic organic compounds (Alkanes, Alkenes and Alkynes) and recognize the structure and properties of aromatic compounds.

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)

- **Attend training workshops for faculty members and talk about effective teaching methods.**
- **Develop the skills of faculty members and their assistants on the use of modern technologies.**
- **guide students to use the Internet for sites to increase the modern scientific knowledge.**
- **Provide sources for books of various special courses to students.**
- **Taking consideration, safety and security labs to avoid the risks is expected to occur.**

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

This course description provides a brief summary of the main characteristics of the course and the expected learning outcomes of the students. Demonstrating whether he had made the most of the available learning opportunities. It must be linked to a description the program.

Course Description

1. Topics to be Covered :		
List of Topics	No. of Weeks	Contact Hours
1-Atomic structure and energy levels.	2	6
2- Periodic table and electronic configuration of the elements	2	6
3- Consequences of the periodic table (Atomic radius and ionic radius, Ionization energy, Electron Affinity, Electronegativity).	1	3
4 -Bonds and Molecular Structure (Chemical bonds and Physical bonds).	2	6
5- Lewis structures, Octet rule and VSEPR theory	1	3
6- Hybridization of atomic orbitals.	2	6
7- Oxidation and Reduction (Oxidation numbers and Assignment of Oxidation Numbers).	1	3
8- Redox reactions (Balancing Oxidation-reduction Equations) by using Oxidation Number Change Method	1	3
9- Redox reactions (Balancing Oxidation-reduction Equations) by using The Ion-Electron Method	1	3
10- Classification of organic compounds (Alkanes – Alkenes – Alkynes)	1	3
11- Introduction to the chemistry of aromatic compounds	1	3
	15	45

Part practical

Topics	the number of weeks	contact hours (actual administration)
Identify the laboratory in general	1	2
Introduction for (separation ways for cationic groups)	1	2
Identify the first cations group	1	2
Identify cations second group (copper - tin) , precipitation and separation of elements	1	2
Identify cations second group B (arsenic group), precipitation and separation of elements	1	2
Learn how to separate the cations second group A from B	1	2
Identify cations Group C (iron group) , precipitation and separation of each cation and make confirmatory tests.	1	2
Training on the separation of a mixture of cations previous groups	1	2
Identify cations Group D (zinc group) , precipitation, separation and conduct confirmatory testing of its components	1	2
Training on the separation of a mixture of third and fourth group	1	2
Identify cations Group V (alkaline earth group), precipitation, separation and conduct confirmatory testing of its components	1	2
Training on the separation of a mixture of the fourth and fifth Group	1	2
Identify cations Group sixth disclosed (alkaline Group)	1	2
Training on the separation of a mixture of the fifth and sixth Group	1	2
Identification of organic compounds, distinguish between aliphatic and aromatic compounds	1	2
	15	30

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

	Lecture	Tutorial	Laboratory or studio	Practical	Other:	Total
Contact Hours	45		30			75

Credit	3		1			4
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3-Additional private study/learning hours expected for students per week
4 hours guidance and 6 Office hours 10 hours

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
1.0	Knowledge At the end of the course the student be able to:		
1.1	Understand the type of a compound, atomic structure, type of bonding, hybrid orbitals, Lewis structures and what the exception of octet rule is.	Black board , E-Learning	Quarterly tests and final
1.2	Know the shape of the molecule, location and properties of some elements in the periodic table knowing atomic numbers, oxidation numbers of some elements in the compounds and the type of hybridization in molecules.	Black board , E-Learning	Quarterly tests and final
1.3	Know the Practical part general bases of	- Discussion - Cooperative learning	Quarterly tests and final

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	sedimentation, the enumeration of the cationic groups, their deposition, separation and confirmation and types of organic compounds.		
2.0	Cognitive Skills At the end of the course the student be able to:		
2.1	Elucidate the bonding types, atomic structure, geometrical shape of the molecules, the reasons for the gradient and periodic properties in the periodic table, how the hybridization occurring in the orbits of the central atom, Lewis structure to form a molecule and Balancing Oxidation-reduction Equations.	Black board , E-Learning	<ul style="list-style-type: none"> Quarterly tests during the semester. Final exam
2.2	Practical part Explain the problems you are experiencing during the practical part and place appropriate solutions and distinguish between aliphatic and aromatic compounds.	<ul style="list-style-type: none"> - Discussion -Cooperative learning 	Quarterly tests and final
3.0	Interpersonal Skills & Responsibility At the end of the course the student be able to:		
3.1	Theoretical & Practical parts Cooperate with the students, discussions	<ul style="list-style-type: none"> • Collaborative learning. • Right guidance 	• Observation.
3.2	Respect the opinions of others during	<ul style="list-style-type: none"> • Collaborative learning. • Right guidance 	• Observation.
3.3	Solve problems during the work.	<ul style="list-style-type: none"> • Collaborative learning. 	• Observation.

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
		• Right guidance	
4.0	Communication, Information Technology, Numerical At the end of the course the student be able to:		
4.1	<u>Theoretical & Practical parts</u> Use Internet in the search	• Self-learning strategy. • Training laboratory	• Observation.
4.2	Communicate with students		
5.0	Psychomotor At the end of the course the student be able to:		
5.1	<u>Practical part</u> Deal safely with chemicals and scientifically with Instruments.	Training Lab., learning in small groups	• Observation • performance test

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, Quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	The first quarterly test (theoretical) + quarterly first test (practical)	Sixth	15 %
2	Second quarterly testing (theoretical) + second quarterly test (practical)	Tenth	15%
3	Activities, Research and Duties (Theoretical and Practical)	During the course	10%
4	Final test(practical)	Sixteen	10%
	Final test (theoretical)	Seventeenth	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)

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)
4 hours guidance and 6 Office hours

E. Learning Resources

1. List Required Textbooks :
1. General Chemistry "d. Al Owais and others". 2. Foundations of General Chemistry - Hamza Suleiman Abdul Ghani and others in 1988.:
2. List Essential References Materials (Journals, Reports, etc.)
-General Chemistry (Principles and Structure), James Brady and Gerard Humminson Translation by: Solomon Saasa and Mamoun Halabi, Jordan Book House 2002. - Chemistry, by Chang, 9th, ed., 2007, McGraw-Hill
3. List Electronic Materials Web Sites, Facebook, Twitter, etc.
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
Digital Library through the university, "University of Najran" site

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.) - Providing a laboratory equipped with all chemicals and devices to teach the practical part -The capacity of the laboratory is not more than 30 students - - Providing security and safety rules in the laboratory -
2. Computing resources (AV, data show, Smart Board, software, etc.)
-The provision of computer equipment in the lecture halls connected to the Internet and display screens.
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
- Provide chemicals for laboratories. - Providing equipment and equipment for laboratories. -Provide glass for laboratory training

G. Course Evaluation and Improvement Processes:

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>-Evaluation of course questionnaire collected electronically on the site of the university at the end of each semester form. -The results of tests quarterly and final</p>
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the department.</p> <ul style="list-style-type: none"> • exchange of experiences through discussions with faculty members • Achievement file faculty member • Observation and assistance by colleagues
<p>3. Processes for Improvement of Teaching :</p> <ul style="list-style-type: none"> • Attend training sessions and workshops for faculty members in the specialty and about modern and effective teaching methods • Follow the latest developments in the educational process.
<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> <p>-Correcting the test papers by the course instructor.</p> <p>-Review the test papers and grades by the faculty members of the review committees</p> <p>-Assessment of duties and reports-</p>
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :</p> <ul style="list-style-type: none"> - Periodic review of the decision by faculty members to find a suitable solution to the problems of repetition - Development and improvement of scientific material in line with developments and scientific research - Completion of the report of the course by the end of each semester based on the feedback provided by the students questionnaires (Evaluation of students for the course after the completion of tests on the university site)

Name of instructor : _Prof. Abou-El-hamd H. Mohamed_____

Signature : _hassan_____ Date Report Completed : _____

Name of field experience teaching staff: _____

Program coordinator: Dr. El-Sayed R. hassan _____

Signature: __sayed rashad_____ Date received : _____