

Course Specifications

Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications (CS)

Course Specifications

Institution: Dammam University

College/Department College of Science for Girls

A. Course Identification and General Information

1. Course title and code: General Chemistry 1- CHEM 101N-1
2. Credit hours: 3
3. Program(s) in which the course is offered. Chemistry (If general elective available in many programs indicate this rather than list programs) Bachelor of Chemistry
4. Name of faculty member responsible for the course: Prof. Dr. Kamal A Amin
5. Level/year at which this course is offered: 6/1
6. Pre-requisites for this course (if any): Non
7. Co-requisites for this course (if any): Non
8. Location if not on main campus: College of Science for Girls/ Dammam university

9. Mode of Instruction (mark all that apply)

a. traditional classroom	2	What percentage?	
70 b. blended (traditional and online)	0	What percentage?	
c. e-learning	0	What percentage?	
d. correspondence	0	What percentage?	
f. other	0	What percentage?	30

Comments:

The current course has been divided into 2 parts: lectures (2 lectures per week) and practical laboratory work (one lab per week).

B Objectives

1. What is the main purpose for this course?

To study the Matter

To study the laws of definite proportions and the Law of Multiple

The student learns the matter, atoms, chemical bond and structures

The student discusses content of atoms and periodical table and realizes structures of elements. The student learns methods used to calculate moles molarity and write lewis structures.

The student realizes Chemical Bonds and its types.

The student familiarizes with atomic, Molecular, and structural Formula

The student knows chemical formula

To study and calculate the moles, molarity, oxidation reduction reactions

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 use of data show to display information by PowerPoint.

-Update the content of the course is a league based on recent developments in the field and on the learning outcomes.

-Linking the lecture content with the presentation of new research materials published recently.

-Home work assigned to the students and discussed together.

-Compare the course contents with other regional or global universities.

-Lecturing and simplifying the information by using different information technology and Internet.

-Discussion, comments and feedback between professor and students.

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
Definition of chemistry- The Matter States: Gaseous state- Liquid state -Solid state Change of Matter States Classification of Matter: Homogenous matter- Compounds- Heterogenous matter	2	3

Properties of Matter: Physical properties- Chemical properties 2- The Atomic Theory: Dalton theory- Structure of the Atom: Thomson's Concept of Atom - Rutherford's Theory of Atom		
The Contents of the Atom: The protons-The Neutrons-The Electrons- Atomic Number-Mass Number-Isotopes Boher's Theory of Atom-Wave Nature of Electrons and de-Broglie's Hypothesis - Heisenberg Uncertainty Rule Quantum Number: Principle, Secondary, Magnetic and Spin Filling the Orbitals	3	3
Hund's Rule- Pauli Exclusion Principle -Periodic Table: The Disadvantages of the Periodical Table of Mendeleev -Modern Periodic Table- Groups in Periodic Table - Periods in Periodic Table- Blocks in Periodic Table- electron arrangement for some elements- The Advantages of the Modern Periodic Table	4	3
Atomic Size- Ionization Potential Ionization Energy- Electron Affinity- Electronegativity- Electrochemical Properties Chemical Bonds: Ionic Bonds- Covalent Bonds- Single Covalent Bond- Polarity of Covalent Bond- Coordinate Bond- Metallic Bond- Physical Bonds- Hydrogen Bond	5	3
Saturation of Valence or Octet Rule Lewis Structures: for CBr₄, NH₃, The Molecular Orbital Theory Valence-shell Electron-pair, Repulsion Theory	6	3
Hybridization of Atomic Orbitals: sp -sp ² -sp ³ Hybridization	7	3
Atomic, Molecular, and Formula Weights Chemical Formulas: Empirical -Molecular -Structural Formula	8	3
Chemical equations: Balancing Chemical Equations - Calculations Based on Chemical Equations –	9	3
The Law of Definite proportions Proportions The Law of Multiple Limiting Reactant Calculations	10	3
Method of concentration expression- Moles- Molarity- Molality - Normality	11	3
Oxidation and reduction reactions	12	3
Ph measurement and calculation- Acid, base – Buffer solution	13	3
Revision	14	3

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total

Contact Hours	39	0	0	24	0	63
Credit	3	0	0	1	0	4

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

4 hours per week

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

T
e
a
c
h
i
n
g
S
t
r
a
t
e
g
y

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	To study the Matter and laws of definite proportions	Lectures and student research papers	Homework, exams and research papers.
1.2	To calculate moles molarity and write lewis structures.	The using of visual display such as PowerPoint	Homework, exams and research papers
1.3	To realizes Chemical Bonds and its types	Lectures and student research papers	Questions at the end of each lecture and homework
1.4	The student should familiarize with atomic, Molecular, and structural Formula	Lectures and student research papers	Questions at the end of each lecture
1.5	To know balancing chemical equation	Lectures and student research papers	Homework, exams and research papers

1.6	To study and calculate the moles, molarity,	Discussion, comments and asking questions	Homework, exams and research papers
2.0	Cognitive Skills		
2.1	Understand the principles of Lewis structures and chemical formula	Participation of students in discussions during the lecture.	questions at the end of the lecture
2.2	Understand the buffer solution and Ph	Post questions the students	Achievement tests include

		after the show to see how they recognize the topics	(oral questions, quarterly tests, the final test)
2.3	To recognize oxidation reduction reactions	Trying to explain the issues in regular and motivated way	
3.0	Interpersonal Skills & Responsibility		
3.1	The ability to form groups and the distribution of tasks Ability to work independently to complete the assignment given. • The ability to group discussions.	<ul style="list-style-type: none"> Hold brainstorming during lectures. Deep discussion with the students by asking some diverse and exciting oral questions during the lecture Give students the opportunity to discuss any items with the faculty member. -- Assigning students to conduct research articles.	Request a share presentation in front of the students through discussions
3.2	Skill presentation in front of others	To raise the spirit of cooperation among students	
3.3	Ability to clearly express an opinion and accept the opinions of others	Sharing duties (interactive workshop / joint presentation / report / prepare working papers / bring duties ... etc).	Involve and discuss the students during the evaluation of their reports
4.0	Communication, Information Technology, Numerical		
4.1	The ability to use e-mail to communicate with the instructor and other students	Request the students to send their home works and research via email	Written tests
4.2	The ability of the students to access useful sites on the Internet, in order to search for specific data and information	Asking the students to exploit some useful sites in the internet associated with the topics of decision for further reading	Evaluation of worksheets
5.0	Psychomotor		
5.1	Non	Non	Non
5.2	Non	Non	Non

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		2.1		3.2		4.1	
1.1	Not applicable								
2.1	Not applicable								

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	First written exam	7 th week	20%
2	Short report or research related to the course content	9 th week	10%
3	First practical exam (lab)	10 th week	10%
4	Final practical exam (lab)	13 th -14 th week	20%
5	Final written exam	End of semester	40%
6			

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)

Planned office hours between professor and students (4 hours per week).

E Learning Resources

1. List Required Textbooks في بنتملا تبتكم ، مانعلا تخيش بفرعلا ملاحا ، ن محرلا ادبع ريهس ، تماعلا ءايميكلا في ف، 2012 تايساساً
2. List Essential References Materials (Journals, Reports, etc.) General chemistry , principles and structures, (5 th Edition), James E. Brady
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) عيزوتلاو رشنلا في جبرخلا راد ، نورخاؤ س بيوعلا لمدأ ، تماعلا ، 2000 ءايميكلا عيزوتلاو رشنلا في جبرخلا راد ، زاتعلا مياربا بن سحلا دمحم ءيقيبتلاو تماعلا ، 1991 ءايميكلا - 1418 - ضايرلا - ناكيبعلا - ناطلس حلاص - ءماعلا ءايميكلا
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. www.wikipedia.org www.google.com www.pubmed.com Royal society of chemistry

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
Power point through computer blackboard

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.) Lecture rooms with capacity of 50 student-conditioned and equipped with a display panel and an electronic computer with internet connection.
2. Computing resources (AV, data show, Smart Board, software, etc.) Non
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) Special library for faculty members.

G Course Evaluation and Improvement Processes

- Revision of the correction of the exams or quiz by independent professors to check the standards of student's achievement.

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

- Reviewing the course report, specification and its development periodically by the study plans commission and external professors.
- Schedule Workshops for staff members.
- Modernize the source of learning for the course.
- Statistical analysis of the results of the students survey and exploit them in the development, measuring and evaluation

Prepared by: Prof. Dr / kamal A Amin

Date Completed: 4/4/2014