



هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

T6. COURSE SPECIFICATIONS (CS)

Chemistry (CHM 103)



1439/3/8 26-11-2017 3/39/24425

Course Specifications

Institution: Aljouf University (001)	Date: 25-1-1439
College/Department : Preparatory Year <u>Deanship</u>	

A. Course Identification and General Information

1. Course title and code: Chemistry (CHM 103)			
2. Credit hours: 2+2			
3. Program(s) in which the course is offered. Preparatory year for all Health Collages			
4. Name of faculty member responsible for the course Dr. Dr. Dr.			
5. Level/year at which this course is offered: Preparatory Year			
6. Pre-requisites for this course (if any): Non			
7. Co-requisites for this course (if any): Non			
8. Location: Main Campus:			
9. Mode of Instruction (mark all that apply):			
a. traditional classroom	XXX	What percentage?	70%
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="checkbox"/>
f. other	XX	What percentage?	30%
Comments: In this course, students will study chemistry from the beginning, learning the principles of chemistry, its application in our lives.			



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B Objectives

1. What is the main purpose for this course?

Is a course sequence that is designed to provide students with a broad overview of chemistry. Students will learn concepts and specific chemical information that will be applied within the context of a variety of chemistry related applications. Many of the applications that will be investigated highlight contemporary social, technological, and scientific issues. Through participation in course activities, each student should expect to improve her/his knowledge of chemistry, to improve qualitative and quantitative problem-solving skills, and to learn practices of scientific investigators. Hands-on experience with laboratory experiments will enable students to learn proper procedures, to gather meaningful data, and to draw and communicate appropriate conclusions.

2. Briefly describe any plans for developing and improving the course that are being implemented.

- Annual review of course by departmental course planning committee.
- Updating the course with latest developments in the field.
- Annual evaluation and updating of practical sessions materials and preparations.
- Updating course resources based on student usability feedback.
- Benchmark the course topics with local and international universities' equivalent courses.

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

Course Description:

Students will learn details about concepts and specific chemical information that will be applied within the context of a variety of chemistry related applications. We will also introduce the applications that will be investigated highlight contemporary social, technological, and scientific issues. The bulk of the course will be devoted to a discussion of the fundamental principles of properties of solutions, acid/base and aqueous equilibria, organic, polymer, and biological chemistries.

1. Topics to be Covered

Chemical equations, stoichiometry, gases, periodic trends, molecular bonding and structure, properties of solutions, acid/base and aqueous equilibria, organic, polymer, and biological chemistries.

List of Topics	No. of Weeks	Contact hours
Chemical equations	1	2
Stoichiometry	1	2
Gases	0.5	1
periodic trends	0.5	1
molecular bonding and structure	1	2
properties of solutions	1	2
acid/base and aqueous equilibria	1	2
organic chemistry	3	2
polymer chemistry	3	2
biological chemistry	3	2



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

		Lecture	Tutorial	Laboratory/Studio	Practical	Other	Total
Contact Hours	Planned	18			18		36
	Actual	18			9		27
Credit	Planned	2			1		3
	Actual	2			2		4

3. Additional private study/learning hours expected for students per week. 4

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy. Students should know details about chemical basics that will allow students to be familiar with the technological, and scientific issues. As more as, the principles of solutions, acid/base and aqueous equilibria, organic, polymer, and biological chemistries.

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	Chemical equations	a. Class discussions. b. Lectures. c. Seminars. d. Writing assignments. e. Students are encouraged to make regular visits during office hours where they can ask any questions about the course.	a. Direct assessment components such as quizzes, home works, major and final exams. b. Self-assessment feedback. c. Teacher direct observation assessment feedback
1.2	stoichiometry	a. Lectures and class discussions. b. Lab experiment c. Seminars.	a. Direct observation and lab log book b. Examination (mid and final)
1.3	gases	a. Lectures and class discussions. b. Lab experiment	a. Direct observation and lab log book b. Examination



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1.4	periodic trends	a. Lectures and class discussions. b. Lab experiment	a. Direct observation and lab log book b. Quizzes
1.5	molecular bonding and structure	a. Lectures. b. Lab experiment	a. Direct observation and lab log book b. Quizzes
1.6	properties of solutions	a. Lectures and class discussions. b. Lab experiment	a. Direct observation and lab log book b. Examination c. Essay and quizzes
1.7	acid/base and aqueous equilibria	a. Lectures. b. Lab experiment	a. Direct observation and lab log book b. Examination
1.8	organic chemistry	f. Class discussions. g. Lectures. h. Seminars. i. Writing assignments. j. Students are encouraged to make regular visits during office hours where they can ask any questions about the course.	d. Direct assessment components such as quizzes, home works, major and final exams. e. Self-assessment feedback. f. Teacher direct observation assessment feedback
1.9	polymer chemistry	d. Lectures and class discussions. e. Lab experiment f. Seminars.	c. Direct observation and lab log book d. Examination (mid and final)
2.0	Cognitive Skills		
2.1	<ul style="list-style-type: none"> Perform experiments, data acquisition, and data analysis and draw results and conclusions. Summarize the use of chemical equations, experimental work in understanding physics phenomena. 	a. Problems solving. b. Homework. c. Dialogues and discussions. d. Lectures e. Searching in the internet. f. Using computers and software's to understand and analyze data and g. Using simulation programs	a. Written examination b. Group discussions. c. Experiment Reports d. Oral presentation
2.2			
3.0	Interpersonal Skills & Responsibility		



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3.1	<ul style="list-style-type: none"> Demonstrate time management and working effectively with a team to complete specific task 	a. Homework and essay	a. Direct observation
3.2	<ul style="list-style-type: none"> Evaluate the chemistry importance for the future studies 	b. Class attendance	b. Homework assessment
4.0	Communication, Information Technology, Numerical		
4.1	<ul style="list-style-type: none"> Research the scientific terms and usefulness of chemistry. 	a. Lectures and class discussions	a. Direct observation
4.2	<ul style="list-style-type: none"> Illustrate adequate information technology understanding to gather, interpret, and communicate information and ideas. 	b. Time for group work and debates	b. Exam marking
5.0	Psychomotor		
5.1	<ul style="list-style-type: none"> Demonstrate proper experimental tools to solve chemistry problems 	a. Lab. experiment demonstrations	a. Direct lab work observation
		b. Co-operative learning	b. Lab examination
			c. Lab log book

5. 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	First Midterm Exam	7 th week	10%
2	Second Midterm Exam	12 th week	10%
3	Laboratory Exam	14 th week	30%
4	Class activities and homework		10%
5	Final Exam	16 th week	40%



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D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice.
 - Six office hours per week for academic advice; office hours are listed in the instruction schedule posted at instructor's office door.
 - 4 Seminars during the course

E Learning Resources

1. List Required Textbooks

Introductory Chemistry (6th Edition) 6th Edition

Nivaldo J. Tro, 2017 (Pearson Publisher)

General Chemistry (Dover Books on Chemistry) 3rd Revised ed. Edition

Linus Pauling, 1988 (Dover Publications)

2. List Essential References Materials (Journals, Reports, etc.)

<https://www.omicsonline.org/chemical-sciences-journal.php>

<https://www.omicsonline.org/chemical-engineering-process-technology.php>

<https://www.omicsonline.org/medicinal-chemistry.php>

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

<http://ecampus.oregonstate.edu/online-degrees/undergraduate/online-chemistry-lab-course/>

<http://freechemistryonline.com/>

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

<https://www.macalester.edu/academics/chemistry/resources/computerprograms/>

<http://www.divms.uiowa.edu/~rus/eit08b.pdf>



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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.)

2. Technology resources (AV, data show, Smart Board, software, etc.)
Smart board - White board – Internet..etc

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

General Chemistry laboratory equipment's needed

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching.
Black Board Quizzes

- Student's end of course survey
- Student opinion poll on the effectiveness of teaching

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department.
Test

- Peer review evaluation by department's co-instructors.
- Observations and evaluation of the department chair
- Departmental internal review of the course

2. Processes for Improvement of Teaching.
Teaching questionnaire

- Attending workshops
- Benchmark internally and externally to evaluate teaching methods
- Self-reflection feedback.

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)

- Central marking student examination papers and work.



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- Reviewing examination papers with students and compare it with the ideal answers.
- Applying the rechecking of paper's mark in case of dispute

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

- The course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental and higher councils.
- Benchmark internally and externally to evaluate courses effectiveness.
- Take advantage of all new teaching methods and curriculum
Feedback from Collages to adjust the course learning outcome with program learning program

Name of Course Instructor: _____

Signature: _____ Date Specification Completed: _____

Program Coordinator: Ibrahim ALSohaimi

Signature: _____ Date Received: _____

