2023
TP-153

Course Specification
(Bachelor)

Course Title:	General Chemistry II lab
Course Code:	CHEM207-1
Program:	Bachelor of Science in Chemistry
Department:	Department of Physical Sciences
College:	College of Science
Institution:	Jazan University
Version:	TP-153 (2024)
Last Revision Date:	31 January 2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (2hrs)

2. Course type

A.	☐University	☐College	☒ Department	☐Track	☐Others
B.	☒ Required		☐Elective		

3. Level/year at which this course is offered: (3rd Level---2nd Year.)

4. Course general Description:

Course title	Course code	Contact Hours			Credit Hours	Year	Level	Prerequisite	Corequisite
		Lec	Tut	Lab					
General Chemistry II Lab	CHEM207-1	-	-	2	1	2nd	3rd	-	CHEM205-3

In this course, the student acquires some practical skills in determining some of the properties of liquid and solid materials and methods of purification.

5. Pre-requirements for this course (if any)**:**

None

6. Co-requisites for this course (if any)**:**

205CHEM-3

7. Course Main Objective(s):

1. **Understanding and practicing safety rules in laboratories.**
2. **Training in basic practical skills in chemistry and using of laboratory tools.**
3. **Measuring some physical properties of liquid and solid materials.**
4. **Training on methods of purifying liquid and solid materials.**
5. **Writing the reports of experiments in a correct scientific manner.**

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	$(2 \times 15) = 30..$	100%
2	E-learning		
3	Hybrid • Traditional classroom		

No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	
2.	**Laboratory/Studio**	30
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		30

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding;** *Upon completion of the course, students are able to:*			
1.1	**Demonstrate a thorough understanding and critical perspective on the key theories, concepts, and terminology of both theoretical and experimental/applied chemistry knowledge, as well as the essential background in Physics and Mathematics.(I)**	**K(1)**	**lecture/discussion Seminars /presentation Objective question**	**lecture/discussion Seminars /presentation Objective question**
1.2	**Describe and explain correctly chemical phenomena, practical procedures, tools, and techniques used by chemists using chemical principles and scientific logic. (I)**	**K(2)**	**lecture/discussion Seminars /presentation Objective question**	**lecture/discussion Seminars /presentation Objective question**
2.0	**Skills;** *Upon completion of the course, students are able to:*			
2.1	**Solve problems related to the determining of the properties of liquid and solid materials**	**S(1)**	***lecture / Open discussion in Lab***	***Essay questions, Solving problems***
2.2	**Acquire the practical skills to Apply their experimental basics and skills to use laboratory equipment, and classical**	**S(2)**	***Lab work, group work***	***Objective question, Essay***

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	techniques for carrying out different experiments related to determining of the properties of liquid and solid materials and to write a report representing the scientific data			*question, Practical Exam, lab report rubric*
2.3	*Acquire, record, and critically evaluate results through the use of instruments, appropriate record-keeping practices, figure preparation, and scrutiny of experimental results.*	S (3)	*Lab work, Objective question, Essay question, lab report rubric*	*Lab work, Objective question, Essay question, lab report rubric*
2.4	*Classify and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices.*	S(4)	*lab demonstrations / hands-on student learning activities*	*Safety exam*
3.0	**Values, autonomy, and responsibility;** *Upon completion of the course, students are able to:*			

C. Course Content

No	List of Topics	Contact Hours
1.	Safety rules in laboratories	3
2.	Determining the viscosity	3
3.	Determining the diffusion coefficient for a solute between two liquids	3
4.	Determining the boiling point of some liquids - and the solubility product of various substances	3
5.	determining the molecular weight using the freezing point	3
6.	determining the density of solids of regular and irregular shapes	3
7.	measuring the surface tension of liquids	3
8.	determining the heat of evaporation of a liquid.	3
9.	crystallizing of phthalic acid	3
10.	Determining the freezing point of liquids - Determining the coefficient of effectiveness	3
	Total	30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	*Periodic Exams*	*During semester*	*25%*
2.	*Lab work*	*During semester*	*35%*
6.	*Final Exam*	*16*	*50%*
	Total		*100%*

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	*الكيمياء العامة العملية احمد العويس و عبدالله المعيوف, جامعة الملك سعود 1425-2005*
Supportive References	Physical Chemistry ,Peter Atkins, Julio de Paula, Julio DePaula W. H. Freeman, - 2005. - Physical Chemistry, 4th Edition Robert J. Silbey. Robert A. Alberty. Moungi G. Bawendi v. TM. Cambridge, Massachusetts. January 2004
Electronic Materials	Some course contents and materials are posted on Black board sites
Other Learning Materials	https://learn.saylor.org/course/CHEM101 • https://chem.libretexts.org/Bookshelves/General_Chemistry • https://chem.libretexts.org/Special:Search?qid=&fpid=230&fpth=&query=physical+chemistry&type=wiki

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	laboratories,
Technology equipment (projector, smart board, software)	Smart board, Data show, Black board, internet
Other equipment (depending on the nature of the speciality)	none

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Likert-type Survey CES) Indirect
Effectiveness of Students' assessment	Instructor & Course Coordinator	Classroom evaluation (direct & indirect
Quality of learning resources	Program Coordinator	Indirect
The extent to which CLOs have been achieved	Assessment committee	Indirect
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Physical Sciences Department Council
REFERENCE NO.	Meeting (3)
DATE	12/03/2024 -02/09/1445