COURSE Syllabus

Course Name: Chemistry Of Surfaces and Colloids

Course Number: 11014146

General Course Information:

Course title	Chemistry of Surfaces and Colloids
Course number	11014146
Credit hours (theory, practical)	3
Contact hours (theory, practical)	(5 hrs.) per week
Prerequisites/corequisites	11013141
Academic Program	Bachelor in Chemistry
Program code	01
Awarding institution	Al-Isra university
Faculty	Science
Department	Chemistry
Level of course	Third year
Academic year /semester	2019/2020- Summer semester
Awarded qualification	Bachelor degree in Chemistry
Other department(s) involved in teaching the course	-
Language of instruction	English
Date of production/revision	

Course Coordinator:

Coordinator's Name: Dr. Alaa M. Al-Ma'abreh
Office No.: 4231
Office Phone: 2510
Office Hours: open
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Course Description:

Introduction to colloidal and surface chemistry; tools used in colloidal and surface chemistry; sedimentation and diffusion; viscosity; surface tension; light scattering; colloidal structure in surface solution; emulsions and microemulsions and their applications.

Text Book: *Author(s), Title, Publisher, Edition, Year, Book website.*

S. K . Birdi, Surface and colloidal chemistry (principles and applications), 2010.

References: *Author(s), Title, Publisher, Edition, Year, Book website.*

Required book (s), assigned reading and audio-visuals:

Course Educational Objectives (CEOs):

1.	Understanding basic concepts related to surface chemistry and colloids.
2.	Understanding, theories, laws, and tools used in surface chemistry and forces.
3.	Understanding surfactants and their physiochemical properties.
4.	Understanding Colloidal systems.
5.	Understanding thin liquid films

Intended Learning Outcomes (ILO's):

	Intended Learning Outcomes (ILO's)	**Relationship to CEOs**	**Contribution to PLOs**
A	**Knowledge and Understanding:**		
A1	Student be able to understand basic concepts related to surface chemistry and colloids.	1	a
A2	Student be able to understand theories, laws, and tools used in surface chemistry and forces	2	a &b
A3	Student be able to understand surfactants and their physiochemical properties.	3	b
A4	Student be able to understand Colloidal systems.	4	a &b
A5	Student be able to understand thin liquid films	5	a &b
B	**Intellectual skills:**		
C	**Subject specific skills:**		
D	**Transferable skills:**		

Topic Outline and Schedule:

Topic	Weeks	Achieved ILOs
Chapter 1 Introduction to Surfaces and Colloid	1	A1
Chapter 2: Capillarity and Surface Forces (Liquids)	2 & 3	A2
Chapter 3: Surfactants (Soaps and Detergents) and Physicochemical	4 & 5	A3
Chapter 4: Colloidal Systems	6 & 7	A4
Chapter 5: Thin liquid films	8 & 9	A5
Final Exam	10	

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lectures

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

First Exam and second exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.

F- Available university services that support achievement in the course: **Labs, Library.**

Course Policies:

Required equipment:

Assessment Tools implemented in the course:

- ☐ First Written Exam.
- ☐ Second Written Exam.
- ✓ Final Written Exam.
- ✓ Quizzes.
- ✓ Homework.
- ☐ Integrative Projects.
- ☐ Case Study.
- ☐ Written Reports.
- ✓ Participation in Lecture.
- ☐ Practice in the Lab.
- ☐ Illustrative Presentations.
- ☐ Oral Exams.
- ☐ Others (identify):

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the () program will demonstrate	
a.	Describe the fundamental scientific principles and theories across the four subfields of chemistry (Organic, inorganic, analytical and physical).
b.	Identify and confirm chemical compounds structures as well as determine chemical composition.
c.	Establish and concludes mechanisms of physical and chemical processes in addition to the ability of mastering qualitative and quantitative determination.
d.	Solve the scientific problems using different mechanisms and procedures based on critical thinking.
e.	Conduct scientific experiments in chemistry.
f.	Commitment and interest in lifelong learning, and collaborate effectively with other people in a team.
g.	Prepare logical, organized and concise written reports, and oral and poster presentations that effectively communicate chemical content to other scientists.
h.	Commitment to the ethical principles of chemical research.
i.	Find information about chemistry through databases and information
j.	Evaluation of calculations in chemistry experiments and information analysis using computer software.
k.	Demonstrate safety laboratory techniques.

Responsible Persons and their Signatures:

Course Coordinator	**Dr. Alaa M. Al-Ma'abreh**	**Completed Date**	7 /7 /2020
		Signature	Alaa M. Al-Ma'abreh

Received by (Department Head)	**Dr. Alaa Al-Ma'abreh**	**Received Date**	7 /7/2020
		Signature