جامعة المجمعة
Majmaah University

Course Specifications

Institution:	**Majmaah University**
Academic Department :	**Chemistry**
Programme :	**Chemistry**
Course :	**Electro-Reversible Chemistry 2**
Course Coordinator :	**Ebthag ELhassan**
Programme Coordinator :	Dr.Gehan Alaemary

- **Course Specification Approved Date :** **20/12/ 1435 H**

This form compatible with NCAAA 2013 Edition

A. Course Identification and General Information

1 - Course title : **Electro-Reversible Chemistry 2**. Course Code: **323 Chem**					
2. Credit hours : **4 (Three Hours Theoretical + Two Hours Workable)**					
3 - Program(s) in which the course is offered: **Chemistry**					
4 – Course Language : **Arabic**					
5 - Name of faculty member responsible for the course: **Ebthag ELhassan**					
6 - Level/year at which this course is offered : **Level six**					
7 - Pre-requisites for this course (if any) : • **Electro-Reversible Chemistry 1**.					
8 - Co-requisites for this course (if any) : • **Practical course**					
9 - Location if not on main campus : (**faculty of education Zulfi**)					
10 - Mode of Instruction (mark all that apply)					
A - Traditional classroom	√		What percentage?	**80 %**	
B - Blended (traditional and online)			What percentage?	**0 %**	
D - e-learning			What percentage?	**0 %**	
E - Correspondence			What percentage?	**0 %**	
F - Other	√		What percentage?	**20 %**	
Comments :					

B Objectives

What is the main purpose for this course? **Knowles Students by Chemical reaction Of deferent Material under Electric field. Applied The Chemical Operation To Link between The Theoretical and experimental**
Briefly describe any plans for developing and improving the course that are being implemented **The use of interactive whiteboard teaching instead of the chalkboard. use of the Web in modern additions to the course**

C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Definitions for potential difference – decomposition potential and polarization- over -voltage and types and methods of measurement and the necessary precautions	2	6
Cathodic and Anodic Processes (Tafel equation)	2	6
Overvoltage escalating hydrogen gas - the escalation of oxygen gas	2	6
Concentration overvoltage	2	6
Cathodic precipitation of metals and methods of deposition - Factors affecting the nature of the sediments - examples of deposition processes .Anodic prossese - inactivity and theories	4	12
The phenomenon of corrosion , types and factors affecting it and methods of prevention of corrosion	3	9
Practical:		
Corrosion rate measurement of iron in acidic environment by chemical methods	2	4
Corrosion rate measurement of aluminum in base by chemical methods, Influence of adding organic material on the corrosion rate .	2	4
Precipitation of copper cathode from copper sulphate and calculate the percentage of precipitation, Precipitation of lead in anod	2	4
Measuring of decomposition potential for acids, bases and salt	2	4
Anodic Polarization of iron in acidic media	1	2
Anodic Polarization of aluminum in basic media	1	2
Anodic Polarization of aluminum in acidic media	1	2

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	**3**	**---**	**2**	**---**	**---**	**5**
Credit	**3**	**---**	**1**	**---**	**---**	**4**

3. Additional private study/learning hours expected for students per week. **2**

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Know the Definitions for potential difference – decomposition potential and polarization- over -voltage.	lecture discussion, mutual dialogue	Oral tests at the beginning of each lecture, Written tests, final examination
1.2	Definition of Cathodic and Anodic Processes		
١.٣	Recognize Cathodic precipitation of metals		
١.٤	Know the phenomenon of corrosion		
2.0	**Cognitive Skills**		
2.1	measurement of Corrosion rate	problems, Laboratory study Open discussions	Continuous questions- duties - practical test
2.2	the application of laws to resolve proplems		
٢.٣	connect between practical and theoretical		
3.0	**Interpersonal Skills & Responsibility**		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
3.1	Dealing with team spirit in experiments	Working in groups within the lab Collective seminars	Oral questions, Correct experimental results
3.2	Creating constructive competitive spirit		
٣.٣	Encourage communication between students		
4.0	Communication, Information Technology, Numerical		
4.1	Development of communication skills	Proplems research, study discussion	Oral and written exercises Follow-up practical books,
4.2	Development of numerical skills		
٤.٣	Use chemical Internet sites and doing some calculation		
5.0	Psychomotor		
5.1	Mastering laboratory experiments	Practical course	Follow-up practical books,

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Questions and exercises	fourth and fifth	10%
2	Theoretical midterm exam	sixth	20%
3	practical midterm exam	eighth	20%
4	Final practical exam.	fourteenth	20%
5	Final Theoretical exam	Last week	40%

D. Student Academic Counseling and Support

Two hours of weekly academic guidance

E. Learning Resources

1. List Required Textbooks :

— **Theoretical Electrochemistry ",L.I.Antropove,Mir Publishers in Moscow,English**
— **Translation in (1977).**

2. List Essential References Materials :

- **. "An Introduction to Corrosion and Protection of Metals" G.Wranglen, Chapman and Hall New York,London ,(1985).**

  An Introduction to Electrochemical Corrosion Testing For Practicing Engineers and Scintists,William S. Tait (1994).

3. List Recommended Textbooks and Reference Material :

- **"Corrosion and Corrosion Control ",Herbert H. Uhling and John Wilcy and Sons Inc., 2nd Ed .London (1971)**

4. List Electronic Materials :

- **Wikipedia**

5. Other learning material :

- Power point, show- CD

F. Facilities Required

1. Accommodation

- **Prepared Classroom with Interactive whiteboard**
- **40 chair** .

2. Computing resources

- **Laptop special for Professor only**
- .....

3. Other resources

- .....

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

• Meeting with the students academic excellence and the stumble • Identification of evaluation for the course form students
2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor : • Benefit from the expertise of the members of the section • Identify assessment for teachers • Report of the expert from College matchups
3 Processes for Improvement of Teaching : • Courses for Faculty members • Workshop to improve methods of evaluation
4. Processes for Verifying Standards of Student Achievement • The patch is checked by faculty member
5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement : • discussion the members section regularly to improve the course • feedback processes for course quality

Course Specification Approved
Department Official Meeting No (…..) Date … / …. / ….. *H*

Course's Coordinator	**Department Head**
Name : **Ebthag Elhassan**	***Name :*** .....
Signature :	***Signature :*** .....
Date : …./ … / …… *H*	***Date :*** …./ … / …… *H*