Course Specifications

General Information

Course name	Physical Chemistry(3)
Course number	CHEM3322
Faculty	
Department	
Course type	Major Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - This course complements and consolidates the theoretical knowledge acquired in the physical chemistry (III) as Faradays law of electrolysis types of reversible electrodes , determination of activity coefficient, equilibrium constant, solubility product by e.m.f, concentration cells with and without junction potential types of over potential and its measurements. Electrolysis and electrolytes.

2 - To give the student knowledge of Faradays law of electrolysis , electrical conductance , measurement of conductivity , ion-Kohlruschs law, migration of ions, ionic transport and its determination , application of ion conductance, theories of electrolytes, Debye Huckel theory , mobility of ions Debye-Huckel equation.

3 - This course involves Faradays law of electrolysis , electrical conductance , measurement of conductivity , ion-Kohlruschs law, migration of ions, ionic transport and its determination , application of ion conductance, theories of electrolytes, Debye Huckel theory , mobility of ions Debye-Huckel equation. Reversible and irreversible process, electromotive force and its measurements, reversible electrodes potential, the galvanic cells, types of reversible electrodes , determination of activity coefficient, equilibrium constant, solubility product by e.m.f, concentration cells with and without junction potential types of over potential and its measurements. Electrolysis and electrolytes.

Intended Learning Outcomes

Intellectual Skills	* consideration of electrical cells
Professional Skills	* Plating using electrical methods
General Skill	* Methods of electrical oxidation

Course Contents

1 - This course involves Faradays law of electrolysis , electrical conductance , measurement of conductivity , ion-Kohlruschs law, migration of ions, ionic transport and its determination , application of ion conductance, theories of electrolytes, Debye Huckel theory , mobility of ions Debye-Huckel equation. Reversible and irreversible process, electromotive force and its measurements, reversible electrodes potential, the galvanic cells, types of reversible electrodes , determination of activity coefficient, equilibrium constant, solubility product by e.m.f, concentration cells with and without junction potential types of over potential and its measurements. Electrolysis and electrolytes.

Teaching and Learning Methods

1 - Teaching and discussion

Students Assessment

Assessment Method	TIME	MARKS
Final Exam	2hr	50%
First mid Exam	1hr	20%
Second Exam	1hr	20%
Research		10%

Books and References

Essential books	Physical Chemistry, Eighth Edition © 2006 by Peter Atkins and Julio de Paula