

Course Specifications

Programme(s) on which the course is given M.Sc.Chemistry

Major or Minor element of programmes: Major

Department offering the programme: chemistry

Department offering the course: chemistry

Academic year / Level: 2012

Date of specification approval: 2012

A- Basic Information

Title: advanced analytical chemistry **Code:** CH6319

Credit Hours: 2

Lecture: 2

Tutorial: 2

Practical:0

Total: 2

B- Professional Information

1 – Overall Aims of Course

- a- familiarize to students with Advanced analytical techniques.
- b- Development of student's capability of how to treat with the physical and chemical phenomena in our life .

2 – Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

After completing the course the student should be able to

a1- show calibration of volumetric apparatus

a2- clarify principles of volumetric analysis

a3- define complexometric titrations

b- Intellectual Skills

b1- Build the students capability for improvement and thinking in theoretical aspects of titration curves

b2- Improvement the capability of students to out line the research in analytical chemistry

b3- illustrate the meaning of gravimetric analysis

c- Professional and Practical Skills

c1- interpret precipitation reactions

c2- compare aging and crystal growyh

c3- show precipitation from homogenous solution

d- General and Transferable Skills

d1- Enhancing the writing and oral communication capability

d2- problem solving

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Principals of volumetric analysis	4	4	-
Acid – base titration, Complexometric titrations, Precipitation titrations, Redox titrations, Theoretical aspects of titration curves and end point evaluation	4	4	-
Introduction to Gravimetric Analysis, Precipitation reactions, conditions of precipitation, nucleation, particle size, crystal growth, colloidal state, aging, impurities in the analytical precipitate, co-precipitation, precipitation from homogenous solution, drying and ignition of precipitation, Applications.	4	4	-
Evaluation and Procession of Analytical Data, Precision and Accuracy	4	4	-
Types of Errors, Normal Distribution Curve, Standard deviation, Confidence limit	2	2	-

4– Teaching and Learning Methods

4.1- lectures

4.2 – practical for solving problems

4.3- discussion

5- Student Assessment Methods

5.1 written examination to assess the understanding and comprehension

5.2- practical exam to assess the performance and professionalism

Assessment Schedule

Assessment 1 short exam (class activities) Week every two weeks

Assessment 2 mid-term (written and practical) Week 8

Assessment 3 final-term (written and practical) Week 13 and 14

Weighting of Assessments

Mid-Term Examination 20%

Final-term Examination 60%

Semester Work 20%

Total 100%

6- List of References

6.1- Course Notes

prepared in the form of book authorized by department

6.2- Text Book

Dean's Analytical Chemistry Handbook 2d ed - Pradyot Patnaik

7- Facilities Required for Teaching and Learning

Over head projector and data show

Course Coordinator: Prof. Dr. Ramadan El-Bahnasawy

Head of Department: Prof. Dr. Ahmed Abd El-meged

Date: 2012