



Quality Assurance Unit

Department of Pharmaceutical
Analytical Chemistry



Course Specification

Course Specification

1-Basic Information

Title: **Advanced Analytical Chemistry** Code: ...

Level : M. Sc. Students

Department: Pharm.Anal. Chem.

Unit: 2hr / week

Lecture: 48hr Tutorial: --- Practical: --- Total: 48hr

2- Aims of Course

Preparation of M. Sc. Student to use advanced and modern methods for analysis of drugs in pure form, in pharmaceutical dosage forms and in biological fluids and how to overcome different analytical problems.

3- Intended Learning Outcomes of Course(ILOs)

a- Knowledge and Understanding:

- a1- Explain advanced methods for analysis of drugs in pharmaceutical formulations and in biological fluids using chromatographic and thermal methods .
- a2- Illustrate the use of derivatization reactions
- a3- Describe functional group analysis for different chemical classes of drugs

b- Intellectual Skills:

- b1- Overcome analytical problems appearing in drug analysis
- b2- Formulate methods for analysis of interfering drug mixtures
- b3- Select the most suitable and accurate methods for drug analysis

c- Professional and practical Skills:

- c1- Perform the fundamental steps for carrying out validated analytical methods.
- c2- Design analytical methods for drugs in pure form and in pharmaceutical dosage forms using modern techniques.
- c3- Perform derivatization reactions prior to chromatographic

analysis

d- General and Transferable Skills:

- d1- Communication with other colleagues .
- d2- Working in a team through the different steps of analytical procedures.
- d3- Time management during operation of analytical instruments.

Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Thermal Analysis	8	8	
Functional Group Analysis	16	16	
Modern Techniques in Anal. Chem.	8	8	
Derivatization Reactions in Anal. Chem.	8	8	
Quantitative Chromatographic Analysis	8	8	

4- Teaching and Learning Methods

- 4.1- Lectures using power point
- 4.2- Writing a review paper from reference books and periodicals.
- 4.3- Carrying out a net search.

5- Teaching and learning methods for disables

The same as above.

6- student Assessment

a- Student Assessment methods

- 6.1- Written Exam to assess the theoretical background

b- Student Assessment Schedule

No.	Assessment	week
1.	Written Exam	At the end of course

c- Weighting of Assessments

No.	Exam.	Mark	%
1.	Mid-Term Examination		
2.	Final-Term Examination	100	100
3.	Oral Examination		
4.	Practical Examination		
5.	Semester Work		
6-	<u>Other types of assessment</u>		
	<u>Total</u>	100	100%

7- List of References

a-Course Notes

Students are encouraged to read reference books and periodicals and not to depend on course notes

b- Essential Books (Text Books)

- D.A. Skoog, F.J. Holler and T.A. Nieman " Principles of Instrumental Analysis ", 6th Ed., Thomson Brooks/Cole, Canada, 2007.
- F.W. Fifield and D. Kealey " Principles and practice of Analytical chemistry ", Blachwell science, London, 2000
- D. C. Harris, : Quantitive chemical Analysis ", W. H. Freeman and Co, San Francisco, 1982.
- W. A. Cookley, " Handbook of Automated analysis, 1981.
- S. Siggia, " Quantitive Organic Analysis via Functional groups ", 3rd Ed., John wiley & sons, N. Y., 1963.

c-Recommended Books

- G. D. Christian " Analytical chemistry ", 6th Ed., John wiley & sons, N. Y., 2003.
- A.A. Siddiqui " pharmaceutical Analysis ", vol.1, CBS publishers & Distributors, New Delhi, 2006.
- D.G. Watson, " Pharmaceutical Analysis ", 2nd Ed., Elsevier, N. Y. 2005
- M. Pesez and J. bartos, " Colorimetric and Fluorimetric Analysis of Organic Compounds and Drugs ", Marcel Dekker, N.Y., 1974

d- Periodicals, Web Sites, etc

Analyst-J. pharmaceutical and Biomedical Analysis, Analytical Letters-
Talanta- J. pharm. Sci.- J. chromatography.

8- Facilities Required for Teaching and Learning

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Course Coordinator: Prof. Dr. Michael E. El-Kommos.

Head of Department: Prof. Dr. Abdel-Maaboud Ismail Mohamed

Program Coordinator

Date: 8 /10 /2010

University	Assiut	Course Title	Advanced Analytical Chemistry
Faculty	Pharmacy	Course Code.
Department	Pharm. Anal. Chem.		

Matrix of the Intended Learning Outcomes (ILOs) of the Course

Week	Topic	Knowledge and Understanding	Intellectual Skills	Professional and Piratical Skills	General and Transferable Skills
1-4	Thermal Analysis	a1	b1, b2	c1, c2	d1, d2
5-12	Functional Group Analysis	a2,a3	b1, b3	c2	d1, d2
13-16	Modern Techniques in Anal. Chem.	a1, a3	b3	c2	d1, d3
17-20	Derivatization Reactions in Anal. Chem.	a2, a3	b1, b2	c3	d1
21-24	Quantitative Chromatographic Analysis	a1	b1, b2	c1, c3	d2

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