



Quality Assurance Unit
Department of Pharmaceutical
Analytical Chemistry



كلية الصيدلة - جامعة أسيوط
Course Specification

Course Specification

1-Basic Information

Title: Instrumental Analysis

Code: MGC001

Level: year 1 (Master Students) (Pharm.anal.Chem.)

Department: Pharmaceutical Analytical Chemistry

Unit: 2 units

Lecture: 2hr / week **Tutorial:** --- **Practical:** --- **Total:** 2hr / week

Year: 2014-2015

2- Aims of Course

Advanced study of instrumental methods of pharmaceutical analysis, concentrating on the theoretical backgrounds of these methods and important applications in the field of pharmacy.

3- Intended Learning Outcomes of Course (ILOs)

Knowledge and Understanding:

- a1- Describe different methods of instrumental analysis
- a2- Illustrate theoretical basis of each method
- a3- Explain important applications of each method in pharmaceutical field.

b- Intellectual Skills:

- b1- Qualitative and quantitative analysis of pharmaceutical compounds via physico-chemical properties.
- b2- Select the most suitable instrumental method for analysis of medicinal compounds.
- b3- Apply chromatographic analytical methods for separation of mixtures.

c- Professional and practical Skills:

- c1- Perform analysis on different instruments e.g. spectrophotometric, electroanalytical and chromatographic instruments.

- c2- Use mathematical and statistical methods for instrumental analytical data .
- c3- Elucidate the structures of compounds through IR, NMR and MS.

d- General and Transferable Skills:

- d1- Communication with other colleagues.
- d2- Team work skill on working on analytical instruments.
- d3- Time management for complex analytical procedures.

4- Course Contents

Topic	No. of hours	Lecture	Tutorial / Practical
Spectrophotometry	8	8	---
Electrochemistry	10	10	---
Chromatography	10	10	---
IR spectroscopy	6	6	---
NMR spectroscopy	8	8	---
Mass spectrometry	6	6	---

5- Teaching and Learning Methods

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

6- Teaching and learning methods for disables

Same as above

7- student Assessment

a- Student Assessment methods

- 6.1- Written Exam to assess 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%

8- 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.
- Dr. P.D. Sphthi HPLC, quantitative analysis of pharm. Formulations, Vol1, CBS.
- Dewine Sounder. Introducton on to HPLC training program(1) & trouplshooting(4).
- R. Silverstein, G. Bassler and T. Morrill " Spectrometric Identification of Organic Compounds " , 6th Ed., John wiley, New York 1998.
- F.W. Fifield and D. Kealey " Principles and practice of Analytical chemistry ", Blachwell science, London, 2000.
- D. C. Harris, : Quantitative chemical Analysis ", W. H. Freeman and Co, San Francisco, 1982.

c-Recommended Books

- G. D. Christian " Analytical chemistry ", 6th Ed., John wiley & sons, N. Y., 2003.

d- Periodicals, Web Sites, etc

Analyst-Talanta- J. pharm. Sci.
Spectrochimica Acta- J. Chromatography

Course Coordinator: Prof. Dr. Ibrahim H. Refaat

Head of Department: Prof.Dr. Hanaa M. Abdel-Wadoud

Program Coordinator

Date: 30 /11 /2014

University	Assiut	Course Title	Instrumental Analysis
Faculty	Pharmacy	Course Code.	MGC001
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	Spectrophotometry	a1,a2,a3	b1, b2	c1, c2	d1, d2
5-9	Electrochemistry	a1,a2,a3	b1, b2	c1, c2	d1, d3
10-15	Chromatography	a1, a2, a3	b1, b3	c1, c2	d1, d3
16-18	IR spectroscopy	a2, a3	b1	c3	d2, d3
19-22	NMR spectroscopy	a2, a3	b1	c3	d2, d3
23-25	Mass spectrometry	a1, a2, a3	b1, b3	c3	d2, d3

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