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:

Date of specification approval: 2010

A- Basic Information

Title: spectroscopy Code: CH6314
Credit Hours: 2 h Lecture: 1 -
Tutorial: 0 Practicals:0 Total: 2h

B- Professional Information

1 – Overall Aims of Course

Understanding the infrared and ^{1}H-,^{13}C-NMR spectroscopy and mass spectrometry. This is turn assist the student to determine the organic structure.

2 – Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

a1- The importance of spectroscopy as a tool for structure elucidation.

a2- Practice different spectroscopic techniques for structure elucidation.

a3- Experimental work and confirmation of the structure by spectroscopy

b- Intellectual Skills

b1-Building the students capability by determination of organic compounds.
b2-Improve the capability of thinking of student with field of Spectroscopy.

c- Professional and Practical Skills

c1-be familiar with what has been written on the improvement and applications of spectroscopy

d- General and Transferable Skills

d1-problem solving

3- Contents

Week	Topic	No. of	Lecture	Tutorial/

		hours		Practical
1	Infrared (IR)	2	1	2
2	Practical exercises on IR	2	1	2
3	Proton Nuclear Magnetic Resonance (^{1}H-NMR)	2	1	2
4	Practical exercises on ^{1}H-NMR	2	1	2
5	Carbon Nuclear Magnetic Resonance (^{13}C-NMR)	2	1	2
6	Practical exercises on ^{1}H and ^{13}C – NMR	2	1	2
7	Two dimension Nuclear Magnetic Resonance (2D-NMR) as HMBC, HMQC, HSQC, DEPT, H-H COSY, H-C HETCOR	2	1	2
8	Practical exercises on 1D and 2D-NMR	2	1	2
9	Mid-term exam	2	1	2
10	Mass spectrometer (MS)	2	1	2
11	Practical exercises on MS	2	1	2
12	General Practical exercises	2	1	2

4– Teaching and Learning Methods

4.1-lectures
4.2- Lab experimentation

5- Student Assessment Methods

5.1 written examination to assess the understanding and comprehension
5.2- practical exam to assess the performance, attendance and interesting

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 14 and 15

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 dep.

6.2- Recommended Books
Advanced organic chemistry books.

6.4- Periodicals, Web Sites, etc (None)

7- Facilities Required for Teaching and Learning
Over head projector

Course Coordinator: Prof. Dr. Ahmed Abdel Megeid

Head of Department: Prof. Dr. Ahmed Abdel Megeid

Date: / /