Course Specifications

Programme(s) on which the course is given : P., P.&las., P.&comp., P.&G., P.&Ch.

Major or Minor element of programmes : major - major -minor - major - major

Department offering the programme : P., P., P.&Math., P.&G., P.&Ch.

Department offering the course Physics

Academic year / Level 4

Date of specification approval: 2012

A- Basic Information

Title: Molecular spectra Code: P433

Credit Hours: 2 h Lecture:2h

Tutorial: 00 Practicals:00 Total: 2h

B- Professional Information

1 – Overall Aims of Course

the student should be able to understand the fundamentals of molecular spectroscopy, its categories and instrumentations and how it can tell us about the structure of matter

2 – Intended Learning Outcomes of Course (ILOs)

a Knowledge and Understanding:

After completing the course the student should be able to:

a1- describe the principals of molecular spectroscopy

a2- give some accounts on modern analytical methods

b Intellectual Skills

b1-the ability of student to analyze a given molecular spectra

c Professional and Practical Skills

The student will be :

c1-able to select the proper method of analysis
c2- abile to correlate spectral changes with structure

d General and Transferable Skills
d1- the student should be able work in a team working on other properties so that their results could be correlated
d2- enhancement of internet and writing skills for report admission.

3- Contents

Topic	No. of hours	Lecture	Tutorial/Practical
Introduction fundamentals and classifications	4	2	00
Microwave spectroscopy	4	2	00
Infrared spectroscopy	4	2	00
Raman spectroscopy	6	3	00
Electronic spectroscopy	4	2	00
Spin resonance (NMR, ESR)	6	3	00

4– Teaching and Learning Methods

4.1- lectures

4.2 – discussion at the end of each lecture

4.3- submission of an essay about a specific point related to the course based on collected information

5- Student Assessment Methods

5.1- reports to assess skill of collecting data

5.2-oral to assess skill of scientific discussion.

5.3- mide term exam to assess understanding and memorizing skills

5.4- final term exam to assess the overall performance.

Assessment Schedule

Assessment 1 one report/ three weeks

Assessment 2 every 3 weeks

Assessment 3 7 th week

Assessment 4 15 th week

Weighting of Assessments

Mid-Term Examination	**20**	**%**
Final-term Examination	**60**	**%**
Oral Examination.	**10**	**%**
Semester Work	**10**	**%**
Total	**100**	**%**

6- List of References

6.1- Course Notes

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6.2- Essential Books (Text Books)

C.N. Banwell "fundamentals of molecular spectroscopy", 3rd ed, 1983

D.J. Mowthorpe"Infrared spectroscopy", 2 nd , 1987.

6.3- Recommended Books

"Elementary modern physics", Atam P.Arya, 1974.

6.4- Periodicals, Web Sites, … etc

http//www.sciencedirect.com

7- Facilities Required for Teaching and Learning

General library, written books, dark room equipped with overhead projector.

Course Coordinator: Prof.Dr.Zenat El-Gohary

Head of Department: Prof.Dr. Sana Maize

Date: / /