Course specification

University/Academy: Damanhour

Faculty/Institute: Science

Department: Physics

1. course Data:		
Course code: PHY (304)	Course title: Atomic spectroscopy	Academic year/level: 2009-2010 3rd year (second term)
Specialization: Mathematics and physics	No. of instructional units: lecture 2hrs/ week tutorial - practical 3hrs/ week	

2. course Aim	• This course aims at a better understanding of physical meaning of atomic spectroscopy that leads to a better understanding of the atomic structure.
3. Intended learning outcome	
a) Knowledge and understanding	**A1**: Understanding the physical meaning of spectra and spectral analysis. **A2**: Recognize the Energy levels diagrams.
b) Intellectual skills	B1: Compare between both theoretical and practical parts of course. B2. Developing the ability of imagination and creation of students. B3: Create theoretical dealing of the topic under

	investigation.
c) Professional skills	C1: using of spectroscopy as a tool for characterization, identification, and analysis of materials. C2: Solving some physical problems helping in understanding the course parts.
d) General skills	D1: IT skills: - use the internet/electronic resources to obtain subject specific information,. - use a number of computer packages to present information. D2: Working with others: work with other as a part of a team to collect data and/or to produce reports and presentations. D3: Self-learning: - study independently, set realistic targets and plan work and time to met targets within deadlines. D4: Prpblem solving: - Regular problem exercises and example will give students the chance to develop their theoretical understanding and problem. D5: Communication: Students will have write reports and give oral presentation.
4. course content	- Observation of spectra and spectral analysis. - The Bohr theory of Balmer terms. - Energy levels diagrams (Spectra of hydrogen-like ions, consideration of the fine structure of H lines). - Wave mechanics of H atom. - Transition probabilities and selection rules according to wave mechanics. - Alkali spectra.

5. Teaching and learning methods	5.1. lecture using PowerPoint presentations. 5.2. practical sections. 5.3. independent reading throughout basic text books and research papers.
6. teaching and learning methods for students with special needs	Data show – computer – blackboard – Student oral presentations
7. Student Assessment	**7-1.** Semester Work. **7-2.** Mid-Term Examination . 7-3. **Practical Examination** 7-4. **Final Term Examination**
a) Procedures used:	7.1. Reaserch and presentation to assess skills of presenting data and discussion. 7.2. Mid-Term Examination To accesses ability to **continue in course** 7.3. practical exam. To access professional and practical skills. 7.4. written exam. To accesses ability to remember &.understand scientific background.

b) Schedule:	Assessment1:Semesterwork Week: 4-8 Assessment 2: Mid-term Week: 10 Assessment 3: Practical final Week: 12 Assessment 4: Written final Week: 14
c) Weighing of Assessment:	Mid-Term Examination: 10 Final-Term Examination: 100 Practical Examination: 30 Semester Work: 10 Total: 150
8. List of Textbooks and References:	----------
a) Course Notes	Lecturer private note
b) Required Books (Textbooks)	G. Hertzberg, atomic spectra and atomic structure, Dover publications, Inc., New York, 1945.
c) Recommended Books	G. Hertzberg, Spectra of Diatomic Molecules, D. Van Nostrand Company, Inc., Princeton, N. J., 1950.
d) Periodicals, web sites,…,etc	

Course Instructor: Dr. Shaker Ibrahim

Head of Department

Date: -----/-----/----

Prof. Dr. El. M. Elmaghrby