Course specification

University/Academy: Damanhour

Faculty/Institute: Science Damanhour

Department: Physics

1. course Data:		
Course code: PHY 204	**Course title:** physics 2	**Academic year/level:** 2008/2009 2nd year/ second term
Specialization: biological science group	**No. of instructional units:** lecture 2hrs/ week tutorial 1hrs/ week practical 3hrs/ week	

2. course Aim	• The course introduces the interaction of radiation with matter and biological systems besides the radiation detection and dosemetry. • The course introduces the fundamentals of application of physics in biological systems.
3. Intended learning outcome	
a) Knowledge and understanding	A1: Define the interaction of radiation with matter. A2: Recognize the radiation detection and detectors. A3: Describe the biophysics- biophysical systems. A4: Recognize the Biophysics techniques.
b) Intellectual skills	B1: Discuss Radiation detection and detectors. B2: Discuss Biological effects of radiation. B3: Show the difference between External and internal hazards of radiation sources.

	B4: Analyze the applications of Bioelectric potentials. B5: Show the Physical properties of living cells with emphasis on passive electrical properties.
c) Professional skills	C1: Dissect storage of radioactive materials and disposal of radioactive wastes. C2: Dissect Biomechanics of living cells, forces, in the body Physics of some parts of human body. C3: Dissect the physical knowledge to analyze a suitable technique to solve problems. C4: Dissect some physical problems helping in understanding the course parts.
d) General skills	D1: Use of technology tools: - use the internet/electronic resources to obtain subject specific information,. - use a number of computer packages to present information. D2: The ability to work in groups: work with other as a part of a team to collect data and/or to produce reports and presentations. D3: Write reports improving Self-learning: - study independently, set realistic targets and plan work and time to met targets within deadlines. D4: Write reports and Problem solving: - Regular problem exercises and example will give students the chance to develop their theoretical understanding and problem. D5: The ability to communicate: Students will have write reports and give oral presentation.
4. course content	- Interaction of radiation with matter. The interaction between charged particles. Gamma radiation and neutrons with matter. - Introduction, Electrode technique. - Methods of radiation. - Detection and radiation detectors.

	- Units of radiation. - Biological effects of ionizing radiations, genetic and somatic effects. - Fundamentals of electrochemistry and Resting potential. - Action potential and Surface potentials. - External and internal hazards of radiation. - Sources and radiation protection. - Treatment of contaminated persons. -Radiation contamination, storage of radioactive materials. - Physical properties of living cells and Bio mechanics.
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 notes
b) Required Books (Textbooks)	1. Principles of biophysics, Fadel M.Ali, 2003 2. Biophysics. An introduction, Rodney Cottenill, 2003, John Wiley& Sons LTD 3. Atoms, Radiation and Radiation protection, James E.Turner. 1985 4. Interscience publication, John Wiley & Sons, Inc.
c) Recommended Books	5. Interscience publication, John Wiley & Sons, Inc.
d) Periodicals, web sites,…,etc	----------

Course Instructor Dr. Nadia Abd-Elaty **Date:** -----/-----/----

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