



# Course Specifications

Institution:	....	College of Education at Zulfy.....
Academic Department :	.....	Physics.....
Programme :	.....	B.Edu. Degree in Physics...
Course :		Biophysics
Course Coordinator :	.....	Dr. Emad Alhami.....
Programme Coordinator :	.....	Dr. Fatema Alzahraa'.....
Course Specification Approved Date :		21./ 12... / 1437 H



## A. Course Identification and General Information

1 - Course title :	biophysics	Course Code: .....	Phys 378..
2. Credit hours :	(.2 ....)		
3 - Program(s) in which the course is offered:	B.Edu. Degree in Physics		
4 – Course Language :	.....Arabic...		
5 - Name of faculty member responsible for the course:	.... Dr. Emad Alhami..		
6 - Level/year at which this course is offered :	. 8 <sup>th</sup> level.....		
7 - Pre-requisites for this course (if any) :	•		
8 - Co-requisites for this course (if any) :	• .....		
9 - Location if not on main campus :	( .....		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	80%
B - Blended (traditional and online)	<input type="checkbox"/>	What percentage?	
D - e-learning	<input checked="" type="checkbox"/>	What percentage?	10 %
E – Correspondence	<input type="checkbox"/>	What percentage?	
F - Other	<input checked="" type="checkbox"/>	What percentage?	10%
Comments :	.....		

## B Objectives

1. To give the student an idea of the branches of the science of biophysics - Historical Overview - radiation interaction with the material - Medical radiation applications in diagnosis and treatment
Briefly describe any plans for developing and improving the course that are being implemented :
Lectures - the research presented by students





## C. Course Description

### 1. Topics to be covered

List of Topics	No. of Weeks	Contact Hours
Branches of the science of biophysics - A Brief History	2	4
Matter interaction with radiation - radiation applications in medical diagnosis and treatment	1	2
Random effects and the inevitable effects - the impact of radiation on biological molecules - the effects of radiation with a high linear energy transfer rate:	2	4
The ability of the suspension and the rate of linear energy transfer - the relative biological effectiveness - the direct and indirect effects of damage to biodiversity -	2	4
The nature of the sound and the level of intensity of sound - ultrasound and how they produce - the application of ultrasound in the diagnosis and treatment	2	4
Laser Radiations in Medical Physics -	1	2
X-ray and CT - NMR - Methods Altair	1	2
The application of Nano Technology in the diagnosis and treatment	2	4
Revision	2	4

### 2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
<b>Contact Hours</b>	..... <b>30</b> .....	.....	.....-	.....	.....	30
<b>Credit</b>	..... <b>2</b> .....	.....	.....-.....	.....	.....	2

### 3. Learning hours expected for students per week.

2
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#### 4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
	-Learning fundamentals of biophysics -identify some important programs to help solve the equations of motion of different aspects. Identify the scientific basis. Article interaction with radiation - radiation applications in medical diagnosis and treatment	interactive lectures Strategy discussion and dialogue Strategy - practical learning Strategy - Strategy for teaching thinking skills. - Problem-solving strategy. - decision-making Strategy Cooperative Education Strategy.	-Exercises and assignments home or classroom. -Worksheets, reports and scientific research. -Discussions
<b>2.0</b>	<b>Cognitive Skills</b>		
	Gain knowledge of student applications Biophysics Knowledge of X-ray and CT - NMR - The application of physics in treatment And the use of physical concepts such as electron spin resonance -	Strategy to solve the problems - E-learning strategy - Self-learning strategy - - Project based learning Strategy -Modeling and simulation Strategy	Tests - Scientific research
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
	Communication skills with others Skills to take responsibility and lead the team Collaborative work skills	- Practical training - Seminars - Attending meetings / scientific meetings	Assignments, reports and projects and offers the seminar offered by the students - Tests.
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
	-The use of technology in communication and scientific research. -the use of software and computers to solve problems in the physical and numerical difficulties. . - the use of technology in teaching and	Lectures practical training research projects	Tests. conduct exercises and homework and classroom by technology. Preparation of research using the





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
	learning..		technology. perform tasks by use of technology
<b>5.0</b>	Psychomotor		

### 5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Attendance	Every week	10%
2	Oral discussions	Every week	10%
3	Mid term	8 <sup>th</sup>	30%
4	Final exam	17 <sup>th</sup>	40%

### D. Student Academic Counseling and Support

4 office hours per week

- Communicate; ask questions and inquiries through the site on the World Wide Web.

- To provide assistance and guidance to any inquiry or consulted regarding the article and given that

Include helping students understand the material and contribute to the process of academic guidance, And assist students in the face of any problems and academic scholarships in this cours.

### E. Learning Resources

2. List Essential References Materials :

- **fundamentals in biophysics -talev Dr. Marwan Ahmad Fahad -dar Obeikan Publishing.**
- .....





<ul style="list-style-type: none"> <li>• .....</li> </ul>
<b>3. List Recommended Textbooks and Reference Material :</b> <ul style="list-style-type: none"> <li>• Perutz M.F. Proteins and Nucleic Acids, Elsevier, Amsterdam, 196</li> <li>• .....</li> <li>• .....</li> </ul>
<b>4. List Electronic Materials :</b> <ul style="list-style-type: none"> <li>• <a href="http://www.physicsclassroom.com">http://www.physicsclassroom.com</a></li> <li>• .....</li> </ul>
<b>5. Other learning material :</b> <ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> <li>• .....</li> </ul>

## F. Facilities Required

<b>1. Accommodation</b> <ul style="list-style-type: none"> <li>• Lecture room for 30 students</li> <li>• Library</li> <li>• Laboratory for experimental solid state</li> </ul>
<b>2. Computing resources</b> <ul style="list-style-type: none"> <li>• Computer room</li> <li>• Scientific calculator.</li> </ul>
<b>3. Other resources</b> <ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> <li>• .....</li> </ul>

## G Course Evaluation and Improvement Processes

<b>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:</b> <ul style="list-style-type: none"> <li>• Midterm and final exam.</li> <li>• Quiz.</li> </ul>
<b>2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :</b> <ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> </ul>
<b>3 Processes for Improvement of Teaching :</b> <ul style="list-style-type: none"> <li>• Fortification of the student learning.</li> <li>• Handling the weakness point.</li> </ul>





#### **4. Processes for Verifying Standards of Student Achievement**

- The instructors of the course are checking together and put a unique process of evaluation
- Check marking of a sample of papers by others in the department.
- **Feedback evaluation of teaching from independent organization.**

#### **5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :**

- 1- The following points may help to get the course effectiveness
  - Student evaluation
  - Course report
  - Program report
  - Program Self study
- 2- According to point 1 the plan of improvement should be given.
- 3- Contact the college to evaluate the course and the benefit it add to other courses.
- 4- Add some subject and cut off others depending on the new discoveries in physics.

**Course Specification Approved**  
**Department Official Meeting (    ) Date 14 / 2 / 1437 H**

Course's Coordinator  
Dr. Emad Alhami

Department Head  
Dr. Fatema Alzahraa'

