Course Description of Bio Physics

- The course is presented through the programme of Chemistry teacher.
- This is a core course in the programme.
- The Physics Department is responsible for teaching the course.
- The course is targeted to be presented for Second Year General Education students (for Chemistry section) / First semester.
- Date of accrediting the course description ( / / )

Basic Data

(1) Course Title: Biophysics  
(2) Course Code No.: 222 ph  
(3) Credit Hours: Three credit hours

Lectures: 2 credit hours  
Laboratory practice: 1 credit hour  
Total hours: 3 credit hours

Professional Data

1) General goals of the course

- The course is designed to help student-teachers achieve the following goals:  
  Developing a clear understanding of the basis concepts of human body physics.

2) Operational learning objectives of the course

By the end of this course, student teachers are expected to achieve the following objectives:

A) Knowledge and Comprehension:

The students have to recognize the following:
1- What are biophysics – biophysical systems?
2- Biophysics techniques.
3- Bioelectric potentials and its applications.
4- Physical properties of living cells with emphasis on passive electrical properties.
5- Biomechanics of living cells, forces, in the body Physics of some parts of human body.

B) Cognitive Skills:
- Develop an understanding and appreciation for the nature of scientific inquiry
- Apply mathematics, including statistics and calculus and introductory differential equations, to investigations in physics and the analysis of data.
- Locate resources, design and conduct inquiry-based open-ended investigations in Biophysics, interpret findings, communicate results, and make judgments based on evidence.

C) Practical Skills:
- the appropriate use and storage of scientific equipment.
- safe storage, use, and disposal of materials.

D) Enabling Skills:
1- Relate the concepts of Biophysics to contemporary, historical, technological, and societal issues; in particular.
2- Relate concepts of Biophysics to current controversies and other issues.
3- Construct new knowledge for themselves through research, reading and discussion, and reflect in an informed way on the role of Biophysics in human affairs

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### Contents

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assigned hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

المحتويات
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Lectures</th>
<th>Laboratory</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Introduction</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Second</td>
<td>Electrode technique.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Third</td>
<td>Fundamentals of electrochemistry.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Fourth</td>
<td>Resting potential.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Fifth</td>
<td>Action potential.</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Sixth</td>
<td>Surface potential</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Seventh</td>
<td>The electro/myogram (E.M.G.)</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Eighth</td>
<td>The electro/cardiogram (E.C.G.)</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ninth</td>
<td>The electro/encephalogram (E.E.G.)</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Tenth</td>
<td>Physical properties of living cells.</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Eleventh</td>
<td>Bio mechanics.</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<td>• Mechanical properties of living cells.</td>
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<tr>
<td>Twelfth</td>
<td>• Forces on and in the body.</td>
<td>2</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Thirteenth</td>
<td>• Physics of the skeleton.</td>
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<td>1</td>
<td>3</td>
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**Activities, tasks and assignments:**

- Lectures
- Laboratory experiments.
- Demonstrations
- Report writing
- Brainstorming
- Discussions
- Problem assignments and essay.

**Assessment and Evaluation tools:**

- Semester activities including classroom interactions and Quizzes.
- Lab performance evaluation
- Oral exam.
- Final exam.

**Summative Evaluation table**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Midterm</td>
<td>Seventh</td>
<td></td>
</tr>
</tbody>
</table>

**Assessment and Evaluation tools:**

- Semester activities including classroom interactions and Quizzes.
- Lab performance evaluation
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- Final exam.
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Week</th>
<th>التقييم</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Assessment</td>
<td>Fifteenth Week</td>
<td>التقييم الثاني</td>
</tr>
<tr>
<td>Final exam</td>
<td></td>
<td>امتحان نهاية الفصل الدراسي</td>
</tr>
<tr>
<td>Final exam</td>
<td></td>
<td>امتحان نهاية الفصل الدراسي</td>
</tr>
<tr>
<td>Final oral exam</td>
<td></td>
<td>امتحان الشفوي</td>
</tr>
<tr>
<td>assignments</td>
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<td>أعمال السنة</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>المجموع</td>
</tr>
</tbody>
</table>

**References:**

Students’ Textbooks


Lecturer’s References


Periodicals and websites

- The physics teacher

**Educational Resources**

- Computer simulation programs and slides.
- Transparencences.
- Manual of solved problems (answer and solutions)
- Text books.

**Course coordinator:**

**Head of the Department:**