The University of Jordan

Accreditation & Quality Assurance Center

Course Syllabus

Course Name:
<table>
<thead>
<tr>
<th></th>
<th>Course title</th>
<th>Electricity and Magnetism 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Course number</td>
<td>342332</td>
</tr>
<tr>
<td>3</td>
<td>Credit hours (theory, practical)</td>
<td>3 hrs (Theory)</td>
</tr>
<tr>
<td>4</td>
<td>Contact hours (theory, practical)</td>
<td>3 hrs (Theory / week)</td>
</tr>
<tr>
<td>5</td>
<td>Prerequisites/corequisites</td>
<td>342331, 302102</td>
</tr>
<tr>
<td>6</td>
<td>Program title</td>
<td>B.Sc. In physics</td>
</tr>
<tr>
<td>7</td>
<td>Program code</td>
<td>03023</td>
</tr>
<tr>
<td>8</td>
<td>Awarding institution</td>
<td>The University of Jordan</td>
</tr>
<tr>
<td>9</td>
<td>Faculty</td>
<td>Science</td>
</tr>
<tr>
<td>10</td>
<td>Department</td>
<td>Physics</td>
</tr>
<tr>
<td>11</td>
<td>Level of course</td>
<td>B.Sc.</td>
</tr>
<tr>
<td>12</td>
<td>Year of study and semester (s)</td>
<td>2016-2017; First Semester</td>
</tr>
<tr>
<td>13</td>
<td>Final Qualification</td>
<td>B.Sc. In Physics</td>
</tr>
<tr>
<td>14</td>
<td>Other department(s) involved in teaching the course</td>
<td>None</td>
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<tr>
<td>15</td>
<td>Language of Instruction</td>
<td>English/Arabic</td>
</tr>
<tr>
<td>16</td>
<td>Date of production/revision</td>
<td>December 15 2016</td>
</tr>
</tbody>
</table>

**16. Course Coordinator:**

*Office numbers, office hours, phone numbers, and email addresses should be listed.*

- **Office number**: Ph 304
- **Phone number**: 0777659911 ext. 22035
- **Office Hrs**: Sun, Tue, Thu, 10 - 11 am
  - Mon, Wed, 1 - 2 pm

*Email Y. ramadin @ ju. Edu. Jo.*

**17. Other instructors:** None

*Office numbers, office hours, phone numbers, and email addresses should be listed.*

**18. Course Description:**

*As stated in the approved study plan.*

1: Electrodynamics
2: Conservation Laws
3: Electromagnetic Waves
4: Potentials and Fields
5: Radiation
19. Course aims and outcomes:

A- Aims:

1. To study theoretically Maxwell's equations in electrodynamics
2. The application in technology.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to

1. The sources of electricity and magnetism
2. To study the relation between the electric fields and the magnetic fields
3. To relate the electric charges and the hope of existing the magnetic charges
4. It is a time to move from electric technology to magnetic technology
5. To learn more about radiation and its application
6. Investigate the idea of vector potentials
### 20. Topic Outline and Schedule:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Week</th>
<th>Instructor</th>
<th>Achieved ILOs</th>
<th>Evaluation Methods</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Electromotive force, Electromagnetic Induction, Maxweels Eqns.</td>
<td>1, 2, 3, 4</td>
<td>Y. ramadin</td>
<td>94 %</td>
<td>Section 21 &amp; 22</td>
<td>As in sec 25</td>
</tr>
<tr>
<td>2- Conservation Laws : The continuity Eqn. Poynting Theorem, Momentum</td>
<td>5, 6, 7</td>
<td>Y. ramadin</td>
<td>96 %</td>
<td>Section 21, 22</td>
<td>As in Sec. 25</td>
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<tr>
<td>Electro - magnetic Waves: Waves in one dimension, EM Waves in Vacuum, EM-Waves in Matter, Absorption &amp; Desperation, Guided Waves</td>
<td>8, 9, 10, 11, 12</td>
<td>Y. ramadin</td>
<td>94%</td>
<td>Section 21, 22</td>
<td>As in Sec. 25</td>
</tr>
<tr>
<td>Potentials &amp; Fields</td>
<td>13, 14</td>
<td>Y. ramadin</td>
<td>92%</td>
<td>Sec. 21, 22</td>
<td>As in 25</td>
</tr>
</tbody>
</table>

### 21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

1: Weekly Assignments : Home work Problems

### 22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

1 - Two written Exams
2 - Problem Sheets
3 - Oral evaluation
23. Course Policies:

A- Attendance policies:
   As stated in the university laws

B- Absences from exams and handing in assignments on time:
   As stated in the university laws

C- Health and safety procedures:
   As provided by the university

D- Honesty policy regarding cheating, plagiarism, misbehavior:
   As stated by the university laws

E- Grading policy:
   20 % First Exam
   20 % Second Exam
   10 % Home Works % attendance
   50 % Final Exam

F- Available university services that support achievement in the course:

24. Required equipment:

25. References:

A- Required book (s), assigned reading and audio-visuals:
   Introduction to electrodynamics, third edition, By David J. Griffiths.

B- Recommended books, materials, and media:


26. Additional information:

Name of Course Coordinator: Yahya Al- Ramadin Signature: Date: 15 Dec @016

Head of curriculum committee/Department: Signature: 

Head of Department: Signature: 

Head of curriculum committee/Faculty: Signature: 

Dean: Signature: 

Copy to:
Head of Department
Assistant Dean for Quality Assurance
Course File