## Course specification

**University/Academy:** Damanhour.

**Faculty/Institute:** Science

**Department:** chemistry

### 1. Course Data:

<table>
<thead>
<tr>
<th>Course code:</th>
<th>Course title:</th>
<th>Academic year/level:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochem 324</td>
<td>BIO ANALYTICAL CHEMISTRY</td>
<td>2009/2010 Third year – Second semester</td>
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</tbody>
</table>

**Specialization:** Chemistry/biochemistry

<table>
<thead>
<tr>
<th>No. of instructional units: lecture</th>
<th>practical</th>
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<tbody>
<tr>
<td>2</td>
<td>3</td>
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### 2. Course Aim

The aim of the course is to know chromatographic techniques, Electrophoretic techniques, Immunochemical techniques and their applications.

### 3. Intended learning outcome

**a) Knowledge and understanding**

Successful students will have achieved a comprehensive knowledge of the major concepts, principles and theories of bio-analytical chemistry that include:

- A1 - General principles and types of chromatographic techniques.
- A2 - General principles and types of electrophoretic techniques.
- A3 - General principles of immunochemical techniques
- A4 - Production of polyclonal antibodies
- A5 - Production of monoclonal antibodies.
- A6 - Classification of immunoassays.

**b) Intellectual skills**

By the end of this course, students should be able to:

- b1: Conclude the principles of different analytical techniques,
- b2: Evaluate the principles of chromatography & immunological techniques.

**c) Professional skills**

At the end of this course students will have the ability to:

- C1 - Carry out Separation of biologically important compounds.
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| d) General skills | At the end of this course students will have
|                   | D1- Study skills needed for continuing professional development.
|                   | D2- Interpersonal skills, relating to the ability to interact with other people and to engage in team-working.
|                   | D3- Time-management and organizational skills, as evidenced by the ability to plan and implement efficient and effective modes of working. |


| 5. Teaching and learning methods | 5.1 - Lecture
|                                 | 5.2 - Practical
|                                 | 5.3 - Contact hours.
|                                 | 5.4 - Problem-Based Learning.
|                                 | 5.5 - Encourage students to use online and library resources. |

| 6. teaching and learning methods for students with | |
### 7. Student Assessment

**a) Procedures used:**

- 7.1- Final-Term Examination to assess the student skill in presenting facts, applications, theories and calculations.
- 7.2- Class activities (reports, discussions, practical…etc) to assess the student intellectual, professional and practical, and general and transferable skills.

**b) Schedule:**

- Assessment 1 Practical Examination Week 14
- Assessment 1 Final-Term Examination Week 16

**c) Weighing of Assessment:**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Mid-Term Examination</td>
<td>0 %</td>
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<tr>
<td>Final-Term Examination</td>
<td>75 %</td>
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<tr>
<td>Oral Examination</td>
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<tr>
<td>Practical Examination</td>
<td>25 %</td>
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<tr>
<td>Semester Work</td>
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<tr>
<td>Other types of assessment</td>
<td>0 %</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</table>

Any formative only assessments.

### 8. List of Textbooks and References:

**a) Course Notes**

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**b) Required Books (Textbooks)**

- Principles of biochemistry, Ed. Lehninger, AL., CBS, publishers& distributors, India

**c) Recommended Books**


**d) Periodicals, web sites,…,etc**

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**Course Instructor:**

Dr. Doha Beltagi.

**Date:** ----/--/--/2010.

**Head of Department:**

Dr. Medhat A. Shaker