## COURSE SPECIFICATIONS

### PH DEGREE

**BIOCHEMISTRY DEPARTMENT.**

<table>
<thead>
<tr>
<th>University:</th>
<th>Benha.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty:</td>
<td>Veterinary Medicine.</td>
</tr>
<tr>
<td>Course Title:</td>
<td>Biochemistry of biological fluids and Tissues.</td>
</tr>
<tr>
<td>Code:</td>
<td>28 (advanced).</td>
</tr>
<tr>
<td>Department offering the course:</td>
<td>Biochemistry Department.</td>
</tr>
<tr>
<td>Program(s) on which the course is given:</td>
<td>PH degree in veterinary science (Biochemistry).</td>
</tr>
<tr>
<td>Academic Year / level:</td>
<td>2010-2011.</td>
</tr>
<tr>
<td>Date of specification approval:</td>
<td>10 / 1 / 2011.</td>
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### A- Basic Information

**Title:** Biochemistry of biological fluids and Tissues.

**Credit Hours:**

<table>
<thead>
<tr>
<th>Lecture:</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practical:</td>
<td>2</td>
</tr>
<tr>
<td>Total:</td>
<td>4h /w</td>
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</table>

### B- Professional Information

1- **Overall Aims of the Course:**

The postgraduate student develop research skills, competency in modern laboratory technology and provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities. In addition to decision making in different areas of specialization.

2- **Intended Learning Outcomes of the Course: ( ILOs )**

   **A- knowledge and Understanding**

   A.1. Define the different Scientific terms in Biological fluids.
   A.2. Illustrate the basic knowledge about their Biochemical composition.
   A.3. Summarize the role of these Fluids in the living cells.
   A.4. Mention Knowledge of best recent practice in Biological fluids.
**B-Intellectual skills:**

B.1. Design a research proposal in the area of specialization
B.2. Estimate, Identify and Evaluate the articles and collected research papers in Biochemistry of Body fluids and tissues
B.3. Criticize and Assess their own research data regarding the research area.
B.4. Comment accurately up on the obtained results on his given results.
B.5. Determine area where further research is necessary and be aware beyond current ethical codes list.

**C-Professional and practical skills:**

C.1. Write Correctively the report of the Biochemical reactions that have been tested.
C.2. Perform relevant statistical analysis on data obtained from own research which support his Biochemical skills
C.3. Conduct research project using appropriate range of Experimental techniques:

**D-General and transferable skills:**

D.1. Be a successful member chemist.
D.2. Illustrate a scientific study in the Biochemistry laboratories.
D.3. Set the basis of the scientific chemists' terms.
D.4. Have problem solving skills.
D.5. Communication skills.
D.6. Information technology skills.
D.7. Continuous self learning (life long learning).
D.8. Focus in his role in community development.

**E-Attitude:**

E.1. Scientific Integrity.
E.2. Know the rules and ethics of Scientific research

**3 – CONTENTS:**

<table>
<thead>
<tr>
<th>Topic</th>
<th>No. of hours</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>New techniques in Blood analysis</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>New techniques in Urine analysis</td>
<td>24</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>New techniques in Milk analysis</td>
<td>24</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>New techniques in Saliva analysis</td>
<td>12</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>New techniques in Semen analysis</td>
<td>16</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>New techniques in Cerebrospinal fluid analysis</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>New techniques in Synovial fluid analysis</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>New techniques in Pericardial fluid analysis</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>New techniques in Peritoneal Fluid analysis</td>
<td>20</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>176</td>
<td>88</td>
<td>88</td>
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### 4- Teaching and learning methods:

4.1. Lectures.

4.2. Practical demonstration of chemical reactions.

4.3. Visiting the Central Laboratory.

4.4. Reports.

### 5- Student assessment methods:

#### 5.1. Semester work
To assess student ability for discussion of his attendants.

#### 5.2. Oral Examination
To assess student ability to demonstrate his knowledge

#### 5.3. Practical Exam
To assess Practical skills.

#### 5.4. Final Exam
To assess different skills.

**Assessment Schedule:**

- **Assessment 1:** Week 7
- **Assessment 2:** Week 14
- **Assessment 3:** Week 15
- **Assessment 4:** Week 16

**Weighing of assessments:**

- **Seminar:** 10 %
- **Oral examination:** 10 %
- **Practical examination:** 15 %
- **Semester work:** 15 %
- **Final-term examination:** 50 %
### Other types of assessment

<table>
<thead>
<tr>
<th>title</th>
<th>Course ILOs covered by No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Blood</td>
<td>1,2,3,4</td>
</tr>
<tr>
<td>Urine</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Milk</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Saliva</td>
<td>2,3,4</td>
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<tr>
<td>Semen</td>
<td>2,3,4</td>
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<tr>
<td>Cerebrospinal fluid</td>
<td>2,3,4</td>
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<td>Synovial fluid</td>
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<td>Peritoneal Fluid</td>
<td>2,3,4</td>
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#### Total

<table>
<thead>
<tr>
<th>Total</th>
<th>100 %</th>
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6- **List of References:**

**6.1. Course Notes:** A concise Guide of General Biochemistry

**6.2. Essential books (Text books):**


**6.3. Recommended books:**


### 6.4. Periodicals, Web sites, etc:

- Journal of Biochemistry.
- American Journal of Veterinary research.
- [http://www.labtestsonline.org](http://www.labtestsonline.org)
- [http://www.indstate.edu/thecme/mwking/enzyme-kinetics.html](http://www.indstate.edu/thecme/mwking/enzyme-kinetics.html)
- [http://www-biol.paisley.ac.uk/kinetics/contents.html](http://www-biol.paisley.ac.uk/kinetics/contents.html)

### 7- Facilities Required for Teaching and Learning:

- 7.1. Data show and computer.
- 7.2. Biochemistry Laboratory.
- 7.3. Laboratory animals.
- 7.4. Library.

### Course Coordinators (Teaching Committee):

1. Assistant Prof./ Yakout A. El-Senosy
2. Assistant Prof./ Afaf Desoky Abd El-Magid
3. Assistant Prof./ Omnia Mahmoud Abd El-Hamid

### Head of Biochemistry Department:

Prof. Dr / Hussein Abd El-Maksoud Ali Abd El-Maksoud

**Date:** 10 / 1 / 2011.