## COURSE SPECIFICATIONS

### Master Degree

**University:** Benha.

**Faculty:** Veterinary Medicine.

**Course Title:** Biochemistry Of Lipids and Phospholipids

**Code:** 32.

**Department offering the course:** Biochemistry Department.

**Program (s) on which the course is given:** Master degree in veterinary science (Biochemistry).

**Academic Year / level:** 2011-2012.

**Date of specification approval:** 10 / 1 / 2012.

### A- Basic Information

**Title:** Biochemistry Of Lipids and Phospholipids

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

### B- Professional Information

1- **Overall Aims of the Course:** The postgraduate student:

1- gain the opportunity to have research skills

2- improve the ability of graduate to apply knowledge in professional skills for diagnosis the fatty liver.

3- competency in modern laboratory technology

4- provide the students with skills in interpretation of published literature to prepare them to incorporate and integrate new developments into research and clinical activities.

5- to demonstrate an awareness of the connection with different disciplines of the world – wide research by reviewing the scientific literature.

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

**A- knowledge and Understanding**

After the completion of these courses the student should be able to:

a.1. Define the different Scientific terms in Lipids.
a.2. list a lipid classifications.
a.3. Understand the basic knowledge about Lipids and Phospholipids
a.4. Illustrate the basic knowledge about their chemical composition.
a.5. List the basis of comparison with other chemical compounds related to them.
a.6. Mention Knowledge of best recent practice in fatty acids separation.
a.7. enumerate the causes of obesity and how it done.
a.8 identify the pathways of fatty acids in the body.
a.9 define a fatty liver, causes and protections.
a.10. mention energy production from fatty acids oxidation.
a.11. describe a role of liver in lipid metabolism.

**B-Intellectual skills:**

After the completion of these courses the student should be able to:

b.1. Identify how can write a thesis and research proposal in lipids.
b.2. Design a research proposal in the lipid field.
b.3. determined the articles and collected research papers in Lipids.
b.4. estimate a problems produced from abnormal pathways of fatty acids metabolism.
b.5. Criticize and Assess their own research data regarding the research area.
b.6. Comment accurately up on the obtained results on his given results.
b.7. judge data produced from their practical research.

**C-Professional and practical skills:**

After the completion of these courses the student should be able to:

C.1. Write Correctively a report in the lipid profile analysis.
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:
c.4. analyze a different types of fatty acids.
c.5. explain a results of their thesis.

**D-General and transferable skills:**

After the completion of these courses the student should be able to:

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).

E- **Attitude:**

After the students fishing this courses they should be able to:

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>
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<tr>
<td>Classification and chemistry of lipids</td>
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<td>44</td>
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<tr>
<td>Digestion and absorption of lipids</td>
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<td>Oxidation of Fatty acids</td>
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<tr>
<td>Biosynthesis of Fatty acids</td>
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<tr>
<td>Obesity and fatty liver</td>
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<tr>
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<td><strong>176</strong></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. *Research 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. *written Exam*    To assess different skills.

**Weighing of assessments:**

| Mid-year work | 10 % |
Oral examination & 10 %
Practical examination & 15 %
Research work & 15 %
Final examination & 50 %
Total & 100 %

6- List of References:


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.indstate.edu/thcme/mwking/enzyme-kinetics.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. Prof. Dr/ Hussein Abd El-Maksoud Ali
2. Assistant Prof./ Yakout A. El-Senosy.
3. Assistant Prof./ Omnia Mahmoud Abd El-Hamid

**Head of Biochemistry Department:**
Prof. Dr / Yakout Abdel- Fattah

Date: 10 / 1 / 2012.

**Matrix of the course no: 31(biochemistry of lipids and phospholipids)**

<table>
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<tr>
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