# COURSE SPECIFICATIONS

**(Ph D) Degree**

**Prepared By**

**Histology Department**

**University:** Benha.

**Faculty:** Veterinary Medicine.

**Course Title:** Cytology and general histology (advanced).

**Code:** 9.

**Department offering the course:** Histology & Cytology Department.

**Program(s) on which the course is given:** Ph. D. Degree in veterinary science (histology and cytology).

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

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

## A- Basic Information

**Title:** Cytology and general histology.

| Lecture: 2 | Practical: 2 | Total: 4h /w |

## B- Professional Information

1- **Overall Aims of the Course:** The postgraduate student gain the experience in identifying the advanced histological methods and techniques used in Cytology and general histology of the different tissues.

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

   **A- knowledge and Understanding**

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

   A1- Familiarize the use of electron microscope and Interpret the electron photo micrograph for different tissue of the body.
A2- Understand using of cytogenetic.

A3- Understand using of immunocytochemistry.

A4-Identify the plan work within the governmental frame work regulation in animal experiments.

A5-Recognize the ability to collate different pieces of accurate information.

A6- realize the different forms of the cells,tissue and function of each one.

**B-Intellectual skills:**

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

B1- Design a research proposal in the area of specialization

B2 - Estimate, Identify and evaluate the articles and collected research papers in histology and cytology in different animals.

B3-Criticize and Assess their own research data regarding the muscular, nervous and lymphatic tissue

B4-Comment accurately upon the obtained results on his given results

B5-Determine area where further research is necessary and be aware beyond current ethical codes List

**C-Professional and practical skills:**

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

C1- Write correctly the report of the different tissues in animals.

C2- Perform relevant statistical analysis on data obtained from own research which support his practical skills on light and electron microscope and be able to make immunohistochemistry if needed.

C3- Conduct research project using appropriate range of experimental techniques

**D-General and transferable skills:**

After the completion of these courses the student should be able to:
D1-Problem solving skills
D2-Communication skills
D3-Information technology skill
D4 - Continuous self learning (life long learning)
D5- Focus in his role in community development

**E- Attitude:**
After the students fishing this courses they should be able to:

E1- Scientific integrity
E2- 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>Cytology</td>
<td>15</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Cytogenetics</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cytochemistry</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Epithelial tissue</td>
<td>9</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Connective tissue</td>
<td>11</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Muscular tissue</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Nervous tissue</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Lymphatic tissue</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>58</strong></td>
<td><strong>25</strong></td>
<td><strong>38</strong></td>
</tr>
</tbody>
</table>

**4- Teaching and learning methods:**

4.1. Lectures.
4.2. Practical microscopical examination.
4.3. 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:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-year examination</td>
<td>10 %</td>
</tr>
<tr>
<td>Oral examination</td>
<td>10 %</td>
</tr>
<tr>
<td>Practical examination</td>
<td>15 %</td>
</tr>
<tr>
<td>research work</td>
<td>15 %</td>
</tr>
<tr>
<td>Final-term examination</td>
<td>50 %</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
</tr>
</tbody>
</table>

6- List of References:


6.2. Essential books (Text books):

6.3. Periodicals, Web sites, etc:

http://www.Vetanat.com

http://www.pubmed.com

http://www.Sciencedirect.com

7- Facilities Required for Teaching and Learning:

7.1. Data show and TV.
7.2. Histology Laboratory.
7.3. Library.

Course Coordinators (Teaching Committee):

1. Prof. Dr. Ihab El-Zoghby
**Head of Biochemistry Department:**
Prof. Dr. Ihab El-Zoghby
Date: 10 / 1 / 2012.

**Matrix of the course no: 9 (Cytology and general histology)**

<table>
<thead>
<tr>
<th>Course title</th>
<th>No of hours teaching</th>
<th>Lecture</th>
<th>Practical Lab</th>
<th>Program ILOs covered by No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>k-u (a)</td>
</tr>
<tr>
<td>Cytology</td>
<td>5</td>
<td>10</td>
<td></td>
<td>A1,A2,A4</td>
</tr>
<tr>
<td>Cytogenetic</td>
<td>1</td>
<td>2</td>
<td></td>
<td>A1,A2,A3</td>
</tr>
<tr>
<td>Cytochemistry</td>
<td>1</td>
<td>1</td>
<td></td>
<td>A2,A4,A5</td>
</tr>
<tr>
<td>Epithelial tissue</td>
<td>3</td>
<td>6</td>
<td></td>
<td>A2,A3</td>
</tr>
<tr>
<td>Connective tissue</td>
<td>5</td>
<td>11</td>
<td></td>
<td>A1,A2,A3</td>
</tr>
<tr>
<td>Muscular tissue</td>
<td>3</td>
<td>2</td>
<td></td>
<td>A2,A4</td>
</tr>
<tr>
<td>Nervous tissue</td>
<td>3</td>
<td>2</td>
<td></td>
<td>A3,A6</td>
</tr>
<tr>
<td>Lymphatic tissue</td>
<td>4</td>
<td>4</td>
<td>A1,A2</td>
<td>B3,B5</td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
<td>---</td>
<td>-------</td>
<td>-------</td>
</tr>
</tbody>
</table>