Course Specifications

Postgraduate courses

(Ph.D)

Prepared By

Anatomy & Embryology Department

University: Benha
Faculty: Veterinary Medicine

Course Title: Comparative Respiratory, Lymphatic and Cardiovascular Systems
Code: 5 (advanced)
Department offering the course: Anatomy and Embryology Department
Semester(s) on which the course is given: Ph.D. Degree in Veterinary science (Anatomy)
Academic year / Level: 2011-2012
Date of specification approval: /2012

Basic Information

Title: Comparative Respiratory, Lymphatic and Cardiovascular Systems
Credit Hours: Lecture: 2, Tutorial: 2, Practical: 2, Total: 4/w

Professional Information

- Overall Aims of Course: The postgraduate student gain the experience in the anatomy of the nasal cavity, larynx, trachea, lung, lymph nodes, spleen and heart of ruminants, camel, horse, dog and pig. At the end of the course, they are provided with the advanced knowledge of the anatomy of the respiratory, lymphatic and cardiovascular systems and organs in domestic animals. The student will be able to identify the comparative organs of different animal species and use these anatomical knowledge in other veterinary fields such as medicine, surgery, meat hygiene………..etc.

Intended Learning Outcomes of Course (ILOs)

Knowledge and Understanding:
After successful completion of this course the student should be able to:

- Understand the anatomy of the respiratory system on a comparative basis between different animal species.

2- Distinguish the anatomy of the heart on a comparative basis between species.

3- Recognize the anatomy of the lymphatic system on a comparative basis between species and recognize the anatomy of the vascular system in different animals.

4- Recognize the boundaries of the normal area for percussion and auscultation of the lung in each species.

5- Identify the position of the heart in the body with reference to external landmarks and to palpate the heart beat and identify the position of the lymph nodes in the body of different animals.

**Intellectual Skills**

After successful completion of this course the student should be able to:

1- Estimate the problems of the heart and lung.

2- Determine the different degrees of resonance and heart sounds heard in the area of percussion and auscultation.

3- Assess inquiries from the animal owners and the official authorities reports (e.g. Forensic Medicine) and answer it.

4- Estimate the problems of the lymphatic system in different animals.

**Professional and Practical Skills**

After successful completion of this course the student should be able to:

1- Implement surface anatomy knowledge on the living animals and in approaching some field cases.

2- Use the radiographic anatomy of the heart and lung in clearing some field problems.

3- Demonstrate the position of lymph nodes in the body.

4- Do hard and wet formalin preserved anatomical specimens for display.

5- Make modules for lung and heart in different animals.
General and Transferable Skills

After successful completion of this course the student should be able to:

D.1 Prepare a scientific papers and essays.
D.2 Acquires the skill of oral Presentation (Using the Over Head Projector, power point program and 3D programs).
D.3 Constructing a poster and its presentation.
D.4 Time management.
D.5 Work in a team.

Attitude

E1- Scientific integrity
E2- know the rules and ethics of scientific research

Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>No. of hours</th>
<th>Lecture</th>
<th>Tutorial/Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy of Respiratory system</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Anatomy of Lymphatic system</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Anatomy of the Heart</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Arteries, Veins and capillaries</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Review article</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Seminar</td>
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Program - Course ILO Matrix:

<table>
<thead>
<tr>
<th>Content title</th>
<th>A (K&amp;U)</th>
<th>B (I.S)</th>
<th>C (P&amp;P.S)</th>
<th>D (G&amp;T.S)</th>
<th>E (A)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1  2   3 4 5</td>
<td>1  2   3 4</td>
<td>1  2   3 4 5</td>
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<tr>
<td>Anatomy of Respiratory system</td>
<td>A1 A2 A3 A4 A5</td>
<td>B1 B2 B3 B4 C1 C2 C3 C4 C5</td>
<td>D1 D2 D3 D4 D5</td>
<td>E1 E2</td>
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<tr>
<td>Anatomy of Lymphatic system</td>
<td>A1 A2 A3 A4 A5</td>
<td>B1 B2 B3 B4 C1 C2 C3 C4 C5</td>
<td>D1 D2 D3 D4 D5</td>
<td>E1 E2</td>
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<tr>
<td>Anatomy of the Heart</td>
<td>A1 A2 A3 A4 A5</td>
<td>B1 B2 B3 B4 C1 C2 C3 C4 C5</td>
<td>D1 D2 D3 D4 D5</td>
<td>E1</td>
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<tr>
<td>Arteries, Veins and capillaries</td>
<td>A1 A2 A3 A4</td>
<td>B1 B2 B3 B4 C1 C2 C3 C4 C5</td>
<td>D1 D2 D3 D4 D5</td>
<td>E1 E2</td>
<td></td>
</tr>
</tbody>
</table>
Teaching and Learning Methods

1. Lectures
2. Practical
   - practical training on living animals
3. Reports

Student Assessment Methods

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Purpose</th>
</tr>
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<tbody>
<tr>
<td>Seminar &amp; researches</td>
<td>to assess student ability discussion his attendants</td>
</tr>
<tr>
<td>Oral examination</td>
<td>to assess ability to demonstrate his knowledge</td>
</tr>
<tr>
<td>Practical exam</td>
<td>to assess practical skills</td>
</tr>
<tr>
<td>Final exam</td>
<td>to assess different skills</td>
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</tbody>
</table>

Assessment Schedule

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Time</th>
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<tbody>
<tr>
<td>Assessment 1</td>
<td>7th week</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Week 14th</td>
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<tr>
<td>Assessment 3</td>
<td>Week 21st</td>
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<td>Assessment 4</td>
<td>Week 28th</td>
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Weighting of Assessments

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<tr>
<th>Assessment Type</th>
<th>Percentage</th>
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<td>Mid-Term Examination</td>
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<tr>
<td>Final-Term Examination</td>
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<tr>
<td>Oral Examination</td>
<td>10%</td>
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<tr>
<td>Practical Examination</td>
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</tr>
<tr>
<td>Seminar &amp; Researches</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

List of References

7.1- Books


7.2- Periodicals, web sites, ... etc.

Periodicals
- Anatomia Histologia Embryologia (Journal of the World Association of Veterinary Anatomists)
- Anatomical Record
- Veterinary Radiology

Websites
- WAVA
- Veterinary Anatomy Course.
- CONVINCE
- Comparative Mammalian Brain Collection.
- Veterinary Courseware at Massey University, New Zealand

**Facilities required for teaching and Learning**

**Available**
- Formalin preserved specimens.
- X-ray images.
- Over Head Projector.
- Posters and colored sheets and transparencies.

**Required**
- Models of comparative organs of different animal species.
- Comparative Plastinated organs.
- Stereo-Microscope.
- Tools and electric appliances for organs, skeletons and bone preparation.
- Mobile ultrasonic apparatus.
- Data Show.
- CDs. (anatomy, applied anatomy, radiographic anatomy ..etc.)
- Television circuit for the dissection room.

Course Coordinator: Prof. Dr. Hatem Bahgat

Date of Department: Prof. Dr. Hatem Bahgat

17/1/2012