Course Specifications

Postgraduate courses
(ph D)

Prepared By
Anatomy & Embryology Department

University: Benha
Faculty: Veterinary Medicine

Course Title: General and Special Embryology

Code: 7 (advanced)

Department offering the course: Anatomy and Embryology Department

Program(s) on which the course is given: Ph. D. Degree in Veterinary science (Anatomy)

Academic year / Level: 2011-2012

Date of specification approval: /2012

A - Basic Information

Title: General and Special Embryology

Credit Hours:

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Tutorial</th>
<th>Practical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
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</tbody>
</table>

B - Professional Information

1 - Overall Aims of Course: The postgraduate student gain the experience in embryology of the different systems and organs in domestic animals and poultry. At the end of the course, they are provided with the knowledge of the general and special embryology to be able to identify the organogenesis of animals and birds and this helps in understanding the teratology and its causes.

2 - Intended Learning Outcomes of Course (ILOs)

A-Knowledge and Understanding:

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

A1- Understand the gametogenesis and fertilization.
A2- Understand the cleavage, gastrulation, implantation and placentation.
A3- Understand the comparative features of placenta in different animal species.
A4- Understand the principals of special embryology and development of different systems and organs of the body.

**B-Intellectual Skills**

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

B1- Estimate the problems of the different organs of the body that may takes place during their development.

B.2- Assess inquiries from the animal owners and the official authorities reports (e.g. Forensic Medicine) and how to answer it.

**C-Professional and Practical Skills**

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

C1- Implement developmental knowledge on the living animals and in approaching some field cases.

C.2- Do slides for embryological development.

**D-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 other 3D programs).
D.3 Constructing a poster and its presentation.
D.4 Time management & Work in a team.
D.5 Has self confidence and be creative that will help him to create another ways for diagnosis and assist him to help if asked.
3. Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>No. of hours</th>
<th>Lecture</th>
<th>Tutorial/Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Embryology</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Development of nervous system and sense organs</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Development of digestive and urogenital system</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Development of respiratory and circulatory system</td>
<td>25</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Review article</td>
<td>10</td>
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<td></td>
</tr>
<tr>
<td>seminar</td>
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</table>

4. 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>General Embryology</td>
<td>A1</td>
<td>A2</td>
<td>A3</td>
<td>A4</td>
<td>B1</td>
</tr>
<tr>
<td>Development of nervous system and sense organs</td>
<td>A1</td>
<td>A3</td>
<td>A4</td>
<td>B1</td>
<td>B2</td>
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<tr>
<td>Development of digestive and urogenital system</td>
<td>A1</td>
<td>A3</td>
<td>A4</td>
<td>B1</td>
<td>B2</td>
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<tr>
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<td>A1</td>
<td>A3</td>
<td>A4</td>
<td>B1</td>
<td>B2</td>
</tr>
</tbody>
</table>

5- Teaching and Learning Methods

5.1-lectures

5.2-Practical

5.3- practical training on living animals

5.4-reports

6- Student Assessment Methods

6.1 seminar & researches to assess student ability discussion his attendants
6.2 oral examination to assess ability to demonstrate his knowledge

6.3 practical exam to assess practical skills

6.4 final exam to assess different skills

Assessment Schedule

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

<table>
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<tr>
<th>Assessment</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Final-term Examination</td>
<td>50%</td>
</tr>
<tr>
<td>Oral Examination</td>
<td>10%</td>
</tr>
<tr>
<td>Practical Examination</td>
<td>20%</td>
</tr>
<tr>
<td>seminar &amp; researches</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

7- 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

8- Facilities required for teaching and Learning

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

**B) 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, embryology and teratology, applied anatomy, radiographic anatomy...etc.)
- Television circuit for the dissection room.
- Monitors for the embryology lab.

**Course Coordinator: Prof. Dr. Hatem Bahgat**

**Head of Department: Prof. Dr. Hatem Bahgat**

**Date:** 17/1/2012