Course specification

University/Academy: Damanhour
Faculty/Institute: Science
Department: Zoology

1. course Data:

<table>
<thead>
<tr>
<th>Course code:</th>
<th>Course title:</th>
<th>Academic year</th>
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<tbody>
<tr>
<td>Zool 307</td>
<td>Embryology</td>
<td>2009-2010</td>
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</tbody>
</table>

level: 1st term 3rd year

Specialization:
Special Zoology

No. of instructional units: lecture 3hrs/week practical 4hrs/week

2. course Aim

- Describing the structure of gonads.
- Recognizing the formation of gametes.
- Understanding the mechanisms of developmental process in Amphioxus, toad, Avas and Mammals

3. Intended learning outcome

a) Knowledge and understanding

A1. Mention the main concepts of embryonic development and discussing the possibility of their medical application..

A2. Recognize the mechanism of development with cloning issue, bank of organ and developmental disorders to facilitate the theoretical topics and stimulate students to think in a great depth.

A3. Summarize different thinking of evolutionary vertebrate development.

b) Intellectual skills

By the end of the course the student would be able to:

B1. Formulate the embryonic development among different classes of vertebrates.

B3. Apply different levels of sections from whole embryos.

c) Professional skills

By the end of the course student will have the ability to:

C1. Prepare the different developmental stages of animal model systems.

C2. Elicit the main developmental structure and ability to refer them to embryonic origin.

d) General skills

At the end of this course students will have:

D1: Communicate with each other for covering both written & oral tasks.

D2: Exchange ideas, principles, and theories

4. course content

- Gametogenesis,
- Fertilization and cortical reaction

- Embryonic development of *Amphioxus* as an intermediate link between invertebrates & vertebrates.
- Developmental descriptions of some vital internal systems of *Amphioxus*.

- Embryonic development of Amphibia.
- Establishment of the vital internal organs.

- Avian reproductive system, egg and it’s accessory membranes
- Early embryonic development of the chick
- Avian Patterning and cell movements
- Avian Neurulation

- Body Axes formation in the chick embryo
- Establishment of the internal body systems of the chick embryo

- Development of the mammals "Human Development" Mammalian reproduction cycle Early embryonic development of human “From fertilization up to 12 days of implantation
- Test-tube baby (in vitro fertilization )

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<tr>
<th>5. Teaching and learning methods</th>
<th>1- Lecture</th>
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<tbody>
<tr>
<td></td>
<td>2 - Practical</td>
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<td></td>
<td>3- Problem-Based Learning.</td>
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<td></td>
<td>4- Encourage students to use online and library resources</td>
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</table>
6. teaching and learning methods for students with special needs

7. Student Assessment

a- procedures used

1- **Final-Term Examination**: to assess student writing and drawing ability expressing his/her understanding of chordate Embryology

2- **Class activities** (reports, discussions, practical…etc): to assess the student intellectual, professional, practical and general and transferable skills

b- assessment schedule

Assessment 1 **Practical Examination** Week 14

Assessment 1 **Final-Term Examination** At the end of the term
### Weighing of Assessments

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Mid-Term Examination</td>
<td>15</td>
<td>7.5%</td>
</tr>
<tr>
<td>Final-Term Examination</td>
<td>150</td>
<td>75%</td>
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<tr>
<td>Oral Examination</td>
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<td>0.0%</td>
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<tr>
<td>Practical Examination</td>
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<td>12.5%</td>
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<tr>
<td>Semester Work</td>
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<td>5%</td>
</tr>
<tr>
<td>Other types of assessment</td>
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<td>0.0%</td>
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<tr>
<td><strong>Total</strong></td>
<td>200</td>
<td>100%</td>
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### 8. List of Textbooks and References:

#### a) Course Notes


#### b) Required Books (Textbooks)


6.3. Recommended Books

#### c) Recommended Books


Harvey Lodish, Arnold Berk, Chris A. Kaiser, Monty Krieger,
|--------------------------------|--------------------------------------------------------------------------------------------------|
| 6.4. Periodicals, Web Sites, etc | • http://www.zygote.swarthmore.edu  
• [http://www.devbio.com](http://www.devbio.com) |

Course Instructor: Dr. Abd El-Fatah El-Beltagy

Head of Department: Prof. Karoline Kamel Abdel Aziz

Date: -----/-----/2011