

Course Specification

A- Basic Information

Programme(s) on which the course is given:	MSc of Cytology, Histology and Histochemistry
Department responsible for offering the course:	Zoology
Department responsible for teaching the course:	Zoology
Academic year:	2012-2013
Course title and code:	Experimental Embryology Z647
Contact hours (credit hours):	Lecture: 2 hrs Practical: 2hrs Total: 3 hrs
Course coordinator:	Dr. Gamal Badawy

B- Professional Information

The course aim and intended learning outcomes are based on that mentioned in the programme specifications, with more course-related specific details.

1- Overall Aims of Course: By the end of this course, the student should be able to

- * Recognize the differences between normal and artificial fertilization.
- * highlight the importance of applying experimentation on representative vertebrate embryos.
- * distinguish different aspects of the regenerative process.

2- Intended Learning Outcomes of Course (ILOs):

a- Knowledge and Understanding:

- a1- Demonstrate the experimental approaches that can be applied on vertebrate embryos.
- a2- knowledge of different embryonic stages that can be eligible for experimentation.

b- Intellectual Skills:

- b1- Be able to dismiss the false theories related to the experimental Embryology which are not in accordance to our believes.
- b2- Evaluate the applied experiments during the course span.

c- Professional and Practical Skills:

- c1- Design some experiments for breeding induction and artificial fertilization.
- c2- Perform some regeneration experiments.

d- General and Transferable Skills:

- d1- Defend the experimental design in structural reports.
- d2- Develop scientific writing skills.
- D3- Use appropriate and available tools for doing experiments.

3- Course Contents

Topic	No. of hours	Tutorial/ Practical	Lecture
Breeding induction	3	1	1
Artificial fertilization	3	1	1
Embryo cloning and stem cells.	3	1	1
Vital staining of amphibian gastrula	6	2	2
False theory of the organizer	3	2	2
Transplantation-Human test tube embryos	3	2	2
Regeneration in different animal groups-effect of hormones, nerves and developmental stage on limb and lens regeneration	9	3	3
Fate of neural crest cells	3	1	1
Cell death during necrosis	3	1	1

4- Teaching and Learning Methods

- Lectures.
- Practical sessions.
- Writing essays.
- Oral presentation.
- Research assignment.

5- Student Assessment Methods

- Essays
- Oral exms
- Written exams.
- Practical exams.
- Quizzes.

Assessment schedule

Assessment 1	Essay	Week 1 essay/term
Assessment 2	Oral exam	Twice/term
Assessment 3	Mid-term exams	Week 7
Assessment 4	Semester Work Exam	Week 10
Assessment 5	Final term exam	Week 14

Weighting of assessments

Mid-term examination	20%
Final-term examination	40%
Oral examination	10%
Practical examination	20%
<u>Semester work</u>	<u>10%</u>
Total	100%

6- List of references

1. Course Notes

- 1- Internet and library material.
- 2- Handouts given separately during the course span.

2. Essential Books (Text books):

- 1- Recent books in Experimental Embryology.
- 2- Experimental embryology text books.

• Recommended books

- 1- Molecular and Experimental Embryology.
- 2- Mechanism of embryonic development.
- 3- Cloning.
- 4- Molecular approach of limb regeneration.

3. Periodicals, web sites,...,etc

- 1-Anatomy and Embryology
- 2-Experimental Embryology.

7- Facilities required for teaching and learning

- * Lecture room provided with a white board.
- * Dark room provided with a projector or data show.
- * Student laboratory provided with teratogenic pictures, teratogenic slides, specimens and other related laboratory

Course coordinator: Dr. Gamal Badawy

Head of Department: Prof. Saber Sakr