

Course Specification

University: Menoufiya Faculty: Science

Course Specifications:

Programme (s) on which the Course is given: MSC.cytology ,Histology histochemistry

Major or Minor Element of Programmes : Major.

Department offering the Program: Zoology.

Department offering the Course: Zoology.

Qualifying course for M.SC. Students

Date of Specification Approval: 2013

A- Basic Information

Title: Embryo Culture Code: Z6416

Credit Hours: 2 Lecture: 1

Tutorial: 0 Practical: 2 Total: 3

B- Professional Information

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

* Recognize the different instruments and other requirements of embryo culture lab.

* Stand upon the superiority of the holy creator.

* Exploring different techniques used for embryo culture.

2- Intended Learning Outcomes of Course (ILOs):

a Knowledge and Understanding:

Student should acquire knowledge and understanding of:

a1- The differences between Embryology and Embryo culture.

a2- The related basic scientific principles and techniques.

a3- The differences related to the culture of vertebrate embryos.

a4- The related terminology, nomenclature and classification systems.

b- Intellectual Skills:

Student should be able to

b1- Deduce the superiority of the holy creator.

b2- Differentiate between subject-related theories and assess their concepts and principles.

b3 - Analyze , assess and interpret qualitatively and quantitatively science relevant data.

b4- Identify the main aspects upon which vertebrate embryo culturing stands.

b5- Construct several related integrated information to confirm, make evidence and test hypotheses.

b6- Think about mechanisms of embryonic development.

c- Professional and Practical Skills:

Student should be able to:

c1- Distinguish between different embryological courses.

c2- Plan and report on the investigated data, using appropriate techniques and considering scientific guidance.

c3- Write notes on embryo culturing.

c4- Apply techniques and tools considering scientific ethics.

c5- Make clear labeled drawings for different developmental stages.

d- General and transferable Skills:

Student should be able to:

d1- Monitoring different stages of embryo culturing .

d2- Use effectively information and communication technology.

d3- Development of scientific writing skills.

d4- Acquire self- and long life–learning.

d5- Think independently, set tasks and solve problems on scientific basis.

d6- Work in group effectively; manage time, collaborate and communicate with others positively.

d7- Consider community linked ethics.

3- Contents

Topic	No. of Hours	Lecture	Tutorial / Practical
Instruments, Aseptic techniques, Oxygen and carbon dioxide and life food.	6	2	2
Culturing of amphibian larvae, induced ovulation.	6	2	2
Basic techniques for experimentation with amphibian embryos (Saline-removal of egg membranes- narcosis-vital staining and grafting operation)	6	2	2
Incubation of avian eggs, development in the opened egg- candling and making windows.	6	2	2
Avian embryos explantation	6	2	2
Culturing of mammalian eggs and blastocysts - Removal of the mammalian zona pellucida	6	2	2
Normal tables of early embryonic development in vertebrates	6	2	2

4- Teaching and Learning methods

4.1- Lectures

4.2- Practical sessions.

4.3- Writing essays.

4.4- Oral presentation.

5- Student assessment methods

- 1- Essays to assess ability of writing
- 2- Oral exam to assess the degree of understanding
- 3- Mid-term to assess the degree of following up
- 4- Final exam to assess the whole performance.

Assessment schedule

Assessment 1 Essay	1 essay/term
Assessment 2 Oral exam	Twice / term
Assessment 3 midterm	Week 7 Midterm
Assessment 4 final exam	Week 15 final exam

Weighting of assessments

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Mid-term examination	20%
Final-term examination	40%
Oral examination	10%
Practical examination	20%
Semester work	10%
Other type of assessment	00%
Total	100%

5- List of references

5.1- Recent books in Embryo culture.

5.2- Scientific papers related to the subject of Embryo culture.

5.3- Related web sites.

6- 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 oven, hot plate, incubator, microtome, and other laboratory facilities related to the subject of Embryo culture ..

Course coordinator: Dr. Gamal M Badawy

Head of Department: Prof. Dr. Saber Sakr