Course Specification

A- Basic Information

Programme(s) on which the course is given:	MSc of Cytology, Histology and Histochemistry
Depaetment responsible for offering the course:	Zoology
Depaetment responsible for teaching the course:	Zoology
Academic year:	2012-2013
Course title and code:	Tissue Culture Z6624
Contact hours (credit hours):	Lecture: 2 hrs Practical: 2hrs Total: 3 hrs
Course coordinator:	Prof. Sobhy Hassab El-Naby

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

* Demonstrate knowledge of basic concept of culture medium, blood and solid tissue culture.
* Exploring different techniques used for tissue culture.

2- Intended Learning Outcomes of Course (ILOs):

a- Knowledge and Understanding:

a1- Summarize different culture medium.
a2- Identify the contents of culture medium.
a3- Describe human hypreidomas.
a4- Explain the production of antibodies and cytokins by tissue culture.

b- Intellectual Skills:

b1- Analysis the differences between different culture medium.
b2- Conclude different methods of tissue culture.
b3- Modify production of antibodies cytokins by cell culture.
b4- Apply tissue culture in evaluation of hazardous of environmental pollution.

b5- Apply tissue culture preparation of chromosomes for prenatal and postnatal diagnosis.

c- Professional and Practical Skills:

c1- Use appropriate lab equipment and tools for tissue culture.
c2- Design and perform experiments in the lab and field within proper technical, scientific and ethical frameworks for obtaining tissue for in vitro culture.
c3- Collect, preserve, store and handle samples obtained from in vitro culture.

d- General and Transferable Skills:

d1- Write reports tissue culture success.
d2- Computer-based mining of databases and references about tissue culture success.
d3- Work coherently and successfully as a part of team in projects and assignments.
D4- Study and find information independently and finding realistic solutions through right analysis and anticipation.

3- Course Contents

Topic	No. of hours	Tutorial/ Practical	Lecture
Introduction to tissue culture.	**2**	**-**	**2**
tissue culture media.	**4**	**2**	**2**
Blood cell culture.	**4**	**2**	**2**
Solid tissue culture.	**4**	**2**	**2**
Hybridoma and human hybridomas.	**4**	**2**	**2**
Invertebrate tissue culture.	**6**	**2**	**2**
Stem cells.	**6**	**2**	**2**
Production of antibodies from cultured cells	**4**	**2**	**2**
Production of cytokines from cultured cells	**4**	**2**	**2**
Production of hormones from cultured cells	**4**	**2**	**2**
Production of enzymes from cultured cells	**4**	**2**	**2**
Production of drugs from cultured cells	**2**	**-**	**2**
Applications of tissue cultures in medicine and diagnosis	**2**	**-**	**2**

4- Teaching and Learning Methods

- Lectures.
- Practical sessions.
- Research assignment.
- Exam.

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%
Semester work	10%
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- Fischer, A. (2011): Tissue culture: Studies in experimental morphology and general physiology of tissue cells in vitro.

2- Vunjak-Novakovic, G and Freshney, I. (2006): Culture of cells for tissue engineering.

3- Mitsuhashi, J. (2002): Invertebrate tissue culture methods.

- **Recommended books**

1. Martin, B. (1994): Tissue culture techniques: an introduction.
2. Kruse, P. and Patterson, M. (1973): Tissue culture: methods and application.

3. Periodicals, web sites,…,etc

1-Sciencedirect.

2-Springer

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 PCR cycler, electrophoresis, and other laboratory facilities related to the subject of tissue culture

Course coordinator: Prof. Sobhy Hassab El-Naby

Head of Department: Prof. Saber Sakr