Course Specification

Programme on which the course is given: M.Sc. Zoology (Genetic engineering and molecular biology).

Major or Minor Element of Programme:

Department offering the progarmme: Zoology

Department offering the course: Zoology.

Academic Year/Level: 2012

Date of Specification approval: 2012

A- Basic Information

Title: *Gene therapy* Code: *Z661*

Credit Hours: 2 Lecture: 2

Tutorial: 2 Practical: 2 Total: 2

B- Professional Information

1- Overall aims of the course: By the end of this course, the student will be able to:

By the end of this course the student should be able to demonstrate knowledge of basic concepts in gene therapy strategies and different vectors that applied on it. Also gene therapy for neoplastic and infectious diseases.

2- Intended Learning Outcomes (ILOs):

a- Knowledge and Understanding:

a1- describe gene therapy strategies.

a2. summarize the different types of vectors.

a3. explain gene therapy for some genetic disease.

a4. illustrate infectious disease and its reasons.

b- Intellectual Skills:

b1- determine different strategies of gene therapy

b2. conclude vectors that applied in gene therapy

b3. diagnosis of some infectious disease

b4. suggest the suitable gene therapy for some genetic diseases.

c- Professional Skills:

c1- Identify general gene therapy strategies.

c2- Use cloning vectors.

c3- Use appropriate equipment for gene transfer into tissues to be manipulated for therapy.

d- General and Transferable Skills:

d1- Write reports for gene cloning and therapy success.

d2- Computer-based mining of databases and references about gene therapy.

d3- PowerPoint- based presentations for reports in seminars or group meetings.

d4- Work coherently and successfully as a part of team in projects and assignments.

d5- Study and find information independently, and finding realistic solutions through right analysis and anticipation.

3- Contents:

Topic	No. of hours	Tutorial/ Practical	Lecture
Gene therapy strategies	2	-	2
Gene therapy strategies	2	-	2
Gene therapy strategies	2	-	2
Cloning vectors	2	-	2
Cloning vectors	2	-	2
Use of cloning vectors for gene therapy	2	-	2
Use of cloning vectors for gene therapy	2	-	2
Use of cloning vectors for gene therapy	2	-	2
Gene therapy for infectious diseases	2	-	2
Gene therapy for infectious diseases	2	-	2
Gene therapy for infectious diseases	2	-	2
Gene therapy for neoplastic diseases	2	-	2
Gene therapy for neoplastic diseases	2	-	2

4- Teaching and Learning Methods

4.1- Lectures
4.2- Oral presentations.
4.3- Research assignment.
4.4- Exams.

5- Student Assessment Methods

5.1- Reports to assess collection of course material.
5.2- Mid-term exam to assess mid-term performance.
5.3- Final exam to assess final term performance.

Assessment Schedule

Assessment 1: Reports	a report/ three weeks.
Assessment 2: Report defense	a presentation/ three weeks.
Assessment 3: Mid-Term	week 8 (Mid-Term week)
Assessment 4: Final term exam	week 15 -16 (final-Term week)

Weighing of Assessments

Mid-term examination:	20 %.
Final-term examination	60 %.
Oral examination	00%
Practical examination	00%
Semester work	20%
Other types of assessment 00%	
Total	100%

6- List of references

6.1. Essential Books

- Gene Therapy. By: Joseph Panno, 2004.
- Gene Therapy. By: Evelyn B. Kelly, 2007.
- Gene Therapy. By: Mauro Giacca - 2010.

6.2. Recommended Books:

- Gene therapy: fact and fiction in biology's new approaches to disease. By: Theodore Friedmann, 1994.
- Gene therapy: principles and applications. By: Thomas Blankenstein – 1999.
- Gene therapy: the use of DNA as a drug. By: Gavin Brooks, 2002.

6.3. Periodicals, Websites, ….etc

- Google books: http://books.google.com/bkshp?hl=en&tab=wp
- http://www.sciencedirect.com/
- http://www.ncbi.nlm.nih.gov/pubmed/
- http://www.genetherapynet.com/clinical-trials.html

7- Facilities Required for Teaching and Learning:

- Dark class room equipped with Data show device.
- Molecular biology lab equipped with: PCR cycler, electrophoresis units, trans-illuminator, incubator and water path-shaker.

Course coordinator: Prof. Sobhy Hassab El-naby

Head of Department. Prof. Saber Sakr