



## COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

### (A) Administrative information

(1) Programme offering the course.	Ph.D Postgraduate degree of clinical pharmacology
(2) Department offering the programme.	Clinical pharmacology department
(3) Department responsible for teaching the course.	Clinical pharmacology department
(4) Part of the programme.	Second part
(5) Date of approval by the Department's council	10/7/2016
(6) Date of last approval of programme specification by Faculty council	9-8-2016
(7) Course title.	Pharmaceutics & Gene therapy
(8) Course code.	CPHARM 606 PG
(9) Total teaching hours.	15
(10) Credit hours	1

## **(B) Professional information**

### **(1) Course Aims.**

The broad aims of the course are:

- 1-** Acquire knowledge related to strategies, safety & efficacy of gene therapy in different diseases.
- 2-** Understand challenges facing development of this new era of therapy.

## **(2) Intended Learning Outcomes (ILOs):**

On successful completion of the course, the candidate will be able to:

### **A- Knowledge and Understanding**

1. Discuss different methods, strategies of gene therapy.
2. Describe gene silencing techniques & their applications
3. Detail mechanisms of DNA repair.
4. Characterize contributions of gene sequencing to precision medicine.
5. Outline current clinical applications of gene therapy.
6. Discuss cancer management using gene therapy, including Immunostimulatory gene therapy and oncolytic virotherapy.

## **B- Intellectual skills**

1. Explain different obstacles facing development of gene therapy.
2. Apply gene sequencing, rt-PCR and gene silencing techniques in testing pharmacological effects of drugs.
3. Use known genetic defects related to common diseases for individualizing therapy.
4. Predict disease amenable to be treated with gene suppression, addition & repair.

**(3) Course content:**

<b>Topics</b>	<b>Lectures</b>	<b>Laboratory</b>
<b>Goals of Gene therapy</b>		-
• <b>Tissue engineering.</b>	<b>2</b>	-
• <b>Antiproliferative gene therapy.</b>	<b>2</b>	-
• <b>Immunostimulatory therapy.</b>	<b>2</b>	-
<b>Gene addition.</b>		-
• <b>Genes as drugs.</b>	<b>2</b>	-
• <b>Pharmacokinetics and pharmacodynamics.</b>	<b>2</b>	-
<b>Gene Suppression.</b>	<b>1</b>	-
<b>Gene Repair.</b>	<b>1</b>	-
<b>Oncolytic virotherapy.</b>	<b>1</b>	-
<b>Clinical status and prospects</b>	<b>2</b>	-
<b>Total teaching hours.</b>	<b>15</b>	

**(4) Teaching methods:**

4.1: Lectures

**(5) Assessment methods:**

5.1. - **Written exam** for assessment of knowledge & intellectual ILOs.

5.2. **MCQ exam** at the end of the semester for assessment of knowledge & intellectual ILOs.

### Assessment schedule.

المجموع	الدرجة	الاختبار	المقرر
٥٠	٤٠	اختبار تحريري (مدته ساعة)	الادويه و العلاج الجيني
	١٠	اختبار MCQ	

### (6) References of the course.

#### 6.1. Text books:

Pharmacology and therapeutics (Goodman) [Last edition].  
Pharmacology (Rang and Dale) [last edition].

#### 6.2. Journals :

Pharmacological reviews, ..... etc

### (7) Facilities and resources mandatory for course completion.

- Computer labs with open access to medical research databases
- Upgraded library
- Induction course introducing study skills.
- Candidate's logbook.
- Computer laboratories with a wide range of software.
- Internet with a wide range of learning support material.

#### Course coordinator:

- prof. Dr. Ali Gaballa
- Prof. Dr. Hussein Mahmoud El-Beltagi
- Assistant .lecturer. Hossam El-din Abdel-Monem

#### Head of the department:

- Prof. Dr. Hussein Mahmoud El-Beltagi