COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program offering the course:	**PhD**
(2) Department offering the program:	**Anatomy and Embryology**
(3) Department responsible for teaching the course:	**Histology and Cytology**
(4) Part of the program:	**First part**
(5) Date of approval by the Department`s council	**18/5/2016**
(6) Date of last approval of program specification by Faculty council	**9-8-2016**
(7) Course title:	**Genetics**
(8) Course code:	**ANA 601 BG**
(9) Total teaching hours:	**2 (Theoretical)**

(B) Professional information

(1) Course Aims:

The main aim of this course is to acquire deep insights into general and special principles of genetics.

(2) Intended Learning Outcomes (ILOs):

(A) Knowledge and Understanding:

By the end of the course, the candidates should be able to:

K 1 Define the principles of genetics and clinical applications dependant on genetic basis

K 2 Describe the structure, staining techniques and function of DNA.

K 3 Describe RNA and protein structure and synthesis

K 4 Recognize cell division and chromosomal abnormalities

K5 Recognize Human genome, pattern of inheritance and genetic basis of cancer

K 6 Discuss recombinant DNA technology and their clinical applications.

K7 Discuss methods of DNA sequencing , DNA fingerprinting, footprinting and their clinical uses.

K8 Recognize and describe PCR

K9 Recognize ethics in the life sciences and the integrity and misconduct in life sciences research, including issues of data collection, publication, authorship and peer review

B– Intellectual skills:

By the end of the course the candidates should achieve and demonstrate the following intellectual qualities:

I 1 Integrate anatomical events in human body with genetic basis

I 2 Correlate his/her knowledge in genetics with the clinical findings based on genetic basis.

I 3 Evaluate risk factors that can cause chromosomal aberration.

(3) Course content:

Subjects	Lectures
1. DNA structure and function	**3**
2. Gene expression	**3**
3. Human genome	**3**
4. Pattern of inheritance	**2**
5. Chromosomal aberration	**2**
6. DNA sequencing	**2**
7. PCR	**3**
8. DNA fingerprintig	**1**
9. DNA footprintig	**1**
10. Staining techniques for DNA	**2**
11.Recombinant DNA technology	**4**
12.Clinical uses of recombinant DNA	**2**
13.Ethics	**2**
Total	**30**

(4) Teaching methods:

4.1: Lectures

4.2: Group discussion

4.3: Presentation by students

(5) Assessment methods:

- **Assessment methods: Written exam (one paper, 3 hours)** for assessment of K1-9, I1-3
- **Assessment schedule: Final Exam (200 marks): at the end of the course**

- **Percentage of each assessment to the total mark: Written exam: 200 marks**

  (100% of the total mark)

(6) References of the course:

6.1: **Hand books:** prepared by the department of Histology and Cytology.

6.2: **Text books:**

Genetics (Daniel L. Hartl, Maryellen Ruvolo)

Essential Genetics: A Genomics Perspective (Daniel Hartl)

Principles of Genetics, 8th ed (Gardner, Simmons, Snustad)

6.3: **Journals:**

Journal of Medical Genetics – BMJ Journals http://jmg.bmj.com/

Journal of Human Genetics – Nature http://www.nature.com/jhg/index.html

Genetics Research – Cambridge Journals Online

http://journals.cambridge.org/action/displayJournal?jid=GRH

6.4: **Websites:**

http://learn.genetics.utah.edu/

http://genetics.thetech.org/

http://sciencenetlinks.com/tools/genetic-science-learning-center/

(7) Facilities and resources mandatory for course completion:

- Lecture room.
- Computers, data show projector and internet connection.

Course coordinator: Department of Histology and Cytology

Head of the Department: Prof. Dr. Adel Al-Hawary

Date: **18/5/2016**