Course Specifications

Cell Physiology

First year of M.B.B.Ch. Program

Cell Physiology

(2nd semester)

Cell Physiology

Course specifications:

Program (s) on which the course is given: M.B.B.Ch. program

Major elements of program

Department offering the program: All Departments

Department offering the course: Department of Histology& physiology

Date of specification approval :3\2010

Date of modification: 11\2018

Academic year / Level: First year (2nd semester)

A- Basic information

Title: 1- cell physiology, Code: CPH102,

Credit hours/ week: - Lectures: 2 hours - practical: 1 hour

Note: this course is teached in integration with Histology & physiology

B-Professional information

1-Overall aims

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

- Demonstrate knowledge of the structures, functions, cellular components and molecular constructions of the cartilage & bone.
- Mention and describe the histological structure of muscular tissue and the mechanism of muscle contraction.
- Know about and recognize the normal structure and function of the excitable tissues.
- Acquire an appropriate functional background of excitable tissues.
- Describe the integration of physiological functions, which characterize the performance of the human body as a whole in health

- Know the physiological principles underlying diseases states that aids in interpretation of symptoms

2- Intended learning outcomes (ILOs)

A- Knowledge and understanding

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

Histology :

A1-Describe the composition of the cartilaginous tissue (cells and matrix)
A2-Identify different types of cartilage (hyaline, elastic and white fibrocartilage).
A3-Describe the composition of the bone tissue (cells, organic and inorganic matrix).
A4-Identify different types of bone (compact and cancellous).
A5- Identify different types of muscles (skeletal, cardiac and smooth).

.**physiology :**

A1 - Mention the properties of excitability of living tissues, membrane potentials, and their relation to different phases of excitability.
A2 –Describe physiological anatomy of the skeletal muscle and mechanism of contraction and changes occurring during it.
A3 identify physiological anatomy of the smooth muscle and mechanism of contraction and changes occurring during it.

B-Intellectual skills

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

Histology :

B1- Study bone growth ; intramembranous and endochondrial.
B2- Identify types of epidermal cells.

Physiology:

B1 - Impart fundamental cellular processes such as stimulation, transportation, secretion, etc.
B2 - Emphasis on physiological processes and in certain cases with references to pathophysiological situations of excitable tissues

C- Professional skills

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

Histology :

C1-Differentiate between different types of cartilage.

C2- Differentiate between different types of bone.

C3-Differentiate between different types of muscle fibers.

Physiology :

C1- comment on experiments of (simple muscle twitch, factors affecting it)

D- General skills

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

Histology :

D1- Appreciate the importance of life long learning and show a strong commitment to it.

D2- Use the sources of biomedical information to remain current with advances in knowledge and practice.

Physiology :

D1 - Work separately or in a team to research and prepare a scientific topic.

D2- Value the ethics and respect to all individuals inside and outside the dissecting room

D3- Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other workers

D4- Be responsible towards work

3-Course Contents

Histology :

Topic	No. of credit Hours	Lecture	Tutorial / Practical
1-cartilage (composition & types)	3	2	1
2- bone (composition, types & bone growth)	6	4	2
3- muscular tissue	4	3	1
Total	**13**	**9**	**4**

Physiology :

Weeks	Topics	Lectures	Practical	Total	Weight
1st week	Structure of nerve fiber	1	1	2	8.3
2nd week	Resting membrane potential	1	1	2	8.3
3rd week	Action potential	1	1	2	8.3

4th week	Propagation of action potential	1	1	2	8.3
5th week	Excitability and factors affecting it	1	1	2	8.3
6th week	Strength duration curve	1	1	2	8.3
7th week	Structure of skeletal muscle fiber and motor unit	1	1	2	8.3
8th week	Excitation contraction coupling	1	1	2	8.3
9th week	Energy sources during muscle contraction	1	1	2	8.3
10th week	Types of muscle contraction	1	1	2	8.3
11th week	Types of skeletal muscle fiber and Pathophysiology of muscle contraction	1	1	2	8.3
12th week	Structure of smooth muscle fiber and Excitation contraction coupling in smooth muscle	1	1	2	8.3
Total		12	12	24	100%

4- Teaching and learning Methods

4.1- Lectures.

4.2- Practical sessions to gain practical skills.

4.3- Practical book for drawing.

- Student assessment Methods

Histology :

5.1- Written exams (short essays and MCQs).

5.2- Oral exam.

5.3- Practical exam (Identification of histological slides).

5.4- Course assignment and (practical) book to assess.

5.5- Attendance Criteria: The minimal acceptable attendance is 75%.

Assessment schedule of the 1st turn

Assessment1: Periodic and mid term MCQ assessment.

Assessment 2: Final practical examination.

Assessment 3: Final written examination.

Assessment 4: Final oral examination.

Assessment 5: Final drawing examination.

Assessment 6: Course assignment (practical book).

Weighting of assessments of the 1st turn

Periodic and mid term MCQ assessment	10 marks	22,2%
Final practical examination	5 marks	11, 1%
Final written Examination	16 marks	35 , 5%
Final Oral Examination	5 marks	11, 1%
Final drawing examination	6 marks	13, 3%
Course assignment (practical book)	3 marks	6, 6%
Total	**45 marks**	**1OO %**

Physiology :

Measured Skills (ILOs)	Tools	Time Schedule	Weight
Written exams to assess knowledge and intellectual ILOs (A1-A2, B1-B2).	**Assessment 1:** Periodic (formative/summative) (short assay and MCQ)	By the end of the5th week	30% (27 Marks)
Written exams to assess knowledge and intellectual ILOs (A1-A3, B1-B2).	**Assessment2:-** Periodic (formative/summative) (short assay and MCQ	By the end of the 9th week	
Practical examinations to assess intellectual, Practical and general ILOs (B1-B2, C1, D1-D3	**Assessment3:** Final practical examination	By the end of the 14th week	25% (22 marks)
Written exams to assess knowledge and intellectual ILOs (A1-A3, B1-B2).	**Assessment4:** Final written examination (short assay and MCQ)	By the end of the semester	35% (32 Marks)
Oral exams to	**Assessment4:**	By the end of	10% (9

assess knowledge, general and intellectual ILOs ((A1-A3, B1-B2, D1-D4).	Final oral examination	the semester	marks)

6- List of references

Histology :

6.1- Essential Books (Text Books):

Junqueira, Cameino and Kelly(2008) L.C,2016 Basic Histology,7th ed .Librairrie du liban and Lang buruit ,London ,New York

6.2-Recommended Books:

Fawcett (2006):A Text book ofHistology ,12th edition .Chapman and Hall. New york ,London

6.3- Periodicals and Web Sites of histology

Physiology:

Lecture notes

Recommended books

1-Physiology department book and Lectures note. (Lectures and practical)

2-Ganon textbook of physiology

3-Essential pathophysiology

Journal and websites

1-American journal of physiology

7- Facilities required for teaching and learning

1_ Accommodation :

lecture room ,smart board to write on and computer

2_ computing resources :

Computer lab and internet lab

3_ other resources :

Library, seminar room ,

Wi-Fi internet connections .

Microscopes.

well-prepared glass slides for different tissues stained by routine and special stains.

Course coordinator of Histology : Dr. Eman Ahmed Abd El-Rahim

Head of the department of Histology : Dr/ Amal Taha Abou-Elghit

Head Of The Departement of physiology : Dr/ Omayma Galal Ahmed