COURSE SPECIFICATION

Histochemistry

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	Master degree of Histology & Cytology
(2) Department offering the programme:	Histology & Cell biology
(3) Department responsible for teaching the course:	Histology & Cell biology
(4) Part of the programme:	First part
(5) Date of approval by the Department`s council	30/4/2016
(6) Date of last approval of programme specification by Faculty council	**9-8-2016**
(7) Course title:	Histochemistry
(8) Course code:	HIST 502 HI
(9) Course credits:	4 hours + 2 practical
(10) Total teaching hours:	60 lectures–60 practical

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows:

The aim of this course is to prepare the candidate to be professional in the field of Histochemistry through increasing his/ her awareness about:

1. The principles of specific stains of Histochemistry.
2. The preparation of the stains of Histochemistry.
3. The cell reaction in Histochemistry.
4. Cell related changes in the reactions for the Histochemistry stains.

(2) Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.
On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A 1 Recognize the normal structure and function of the cells through its reactions in histochemistry stains

A 2 Describe different patterns of cell reactions in histochemistry stains.

A 3 Discuss the process of cell reactions in different physiological and pathological conditions

A 4 Recognize various techniques to study certain specific tissues as bone.

B- Intellectual skills

B1 Relate the histochemical staining findings to the function of the cell. B2 Integrate the histochemical staining pattern with clinical data.

C- Professional/practical skills

C 1 Examine the normal tissue reaction of the body cells at the histochemistry level C 2 Perform tests showing the histochemical and cellular mechanisms.

D- Communication & Transferable skills

D 1 Work in team. D 2 Communicate and use internet.

(3) Course content:

A- Theoretical Module:

Subjects	Lectures
• Connective tissue stains	12
• Mucins stains	4
• Glycogen stains	4
• Lipids stains	4
• proteins &nucleic acids stains	4
• Bone stains	4
• Pigment & minerals stains	4
• Cytoplasmic granules & organelles	4
• Enzyme histochemistry & diagnostic applications	8
• Amyloids	4

• Neuroendocrine	4
• Techniques in neuropathology	4
Total	60

B-Practical Module:

Subjects	Practical
1. Performing connective tissue stains(Trichrome, Azan, crosirius Red, Silver, Gordon And Sweet, Van Gieson, Verhoeff-Van Gieson, Orcein Stains)	12
2. Performing mucins stains (Alcian Blue, pH 2.5, 1.0 & Alcian Blue/PAS& High Iron Diamine－Alcian Blue Stains)	4
3. Performing Glycogen stains(Periodic Acid Schiff's, Periodic Acid Schiff's with Diastase, Best's carmine Stains)	4
4. Performing Lipids stains(Sudan III, IV, Sudan black B, Blue B.Z.L. Nile blue, osmium tetroxide and Oil red 0).	4
1. Performing proteins &nucleic acids stains(Trichrome methods Reticulin methods, Feulgen's, Methyl Green Pyronin Stains)	4
1. Performing Bone stains (Heidenain 's iron hematoxylin and 2. Mallory 's phosphotungstic acid hematoxylin	4
3. Pigment & minerals staining (Perl's iron, Rhodanine, Von Kossa, Gomori's Methenamine Silver, Fontana-Masson Silver, phloxine tartrtrazine, Stains)	4
4. Satining of Cytoplasmic granules & organelles(toluidine blue, Silver, Gordon And Sweet, phloxine tartrtrazine, Champy-Kull Altmann acid-fuchsin picric acid, Hcidenhain 's iron hematoxylin Stains	4
5. Perform enzyme histochemical staining:alkaline phosphatase ATPase, acid phosphatase and succinic dehydrogenase	8
6. Staining of Amyloids (iodine and metachromasia)	4
7. Staining of Neuroendocrine system (Periodic acid-Schiff-orunge G technique, OFG method OFG of 'the anterior pituitary, aldehyde fuchsin,	4
1. Performs techniques in neuropathology (Cresyl fast violet (Nissl), Bielschowsky's silver, Marsland and, Glees & Erikson's method for axons stains).	4
Total	60

(4) Teaching methods:

4.1: Lectures

4.2: Practical sessions (microscopic analysis of slides consisting of human and animal tissues and organs stained histochemically)

4.3: Self learning (internet search for specific topics)

(5) Assessment methods:

5.1: Written exam for assessment of A1-4, B1, B2

5.2: OSPE for assessment of A1-4, B1, B2, C1, 2

5.3: Structured oral exam for assessment of A1-4, B1,2

5.4 :MCQ exam or assessment **of** A1-4, B1,2

Percentage of each assessment to the total mark:

Written exam: 144 marks

MCQ: 36 marks

OSPE: : 60 marks

Structured oral exam: : 60 marks

(6) References of the course:

6.1: Hand books: Histology and cell biology department book

6.2: Text books: Bancroft

6.3: Journals: Histology & histochemistry journal, Cell, Cell biology, Science, Egyptian Journal of Histology and Cytology

6.4: Websites: http://www.lab.anhb.uwa.edu.au/mb140/, http://www.histology-world.com/stains/stains.htm, http://www.bu.edu/histology/m/index.htm, http://www.uni-mainz.de/FB/Medizin/Anatomie/workshop/EM/EMAtlas.html

(7) Facilities and resources mandatory for course completion:

Data show for power point presentations

Laboratories

Library

Computers

Microscopes

Course coordinator: Dr. Samar A. Asker

Head of the department: Dr. Salwa Gawish.

Date: