COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program offering the course:	**Postgraduate Doctor Degree in Clinical Pathology-CPATH 630**
(2) Department offering the program:	**Clinical Pathology Department**
(3) Department responsible for teaching the course:	**Clinical Pathology Department**
(4) Part of the program:	**Second Part**
(5) Date of approval by the Department`s council	**16 – 5 - 2016**
(6) Date of last approval of program specification by Faculty council	9/8/2016
(7) Course title:	**Clinical Chemistry**
(8) Course code:	**CPATH 630CC** **CPATH 630 CCP**
(9) Credit hours	**CPATH 630CC (8)** **CPATH 630 CCP(4)**
(10) Total teaching hours:	**CPATH 630CC (120)** **CPATH 630 CCP(120)**

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows: (either to be written in items or as a paragraph)

The overall aim of the course is to:

Provide the student with the technical knowledge, technical skills to perform laboratory tests in the field of clinical chemistry as well as interpretative skills of the clinical chemistry laboratory data and communication skills with the referring clinicians and other health care providers so that a clinically useful opinion can be derived from data.

(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

A1 - Classify vitamins, tumor markers and disorders of porphyrin metabolism
A2- Recognize the biochemistry, Physiology and metabolism of carbohydrates, lipids, proteins, minerals and trace elements.
A3- Discuss the physiological actions, tissue distribution and clinical significance of clinically relevant enzymes
A4- Describe biochemistry , physiology , metabolism and regulation of different endocrine and exocrine glands
A5- Explain laboratory assessment of maternal, fetal, pediatric and geriatric clinical chemistry disorders

B- Intellectual skills

B1- Use cut off points in cancer detection and reference values variations in different age groups

B2- Apply the American diabetes association definition for diagnosis of diabetes, NCEPP for the detection, evaluation and treatment of lipid disorders, guidelines for interpretation of tumor markers , cardiac markers and thyroid profile in clinical chemistry practice .

B3- Interpret the functional laboratory tests that could be used in assessment of different endocrine system disorders

B4- Apply the different analytical methods used for monitoring of therapeutic drugs and drugs of abuse

C- Professional/practical skills

C1- Perform the analytical methods involved in diagnosis of different forms of diabetes , lipids , proteins, amino acids , minerals and trace elements disorders .

C2- Carry out the methods available for analysis of clinically significant enzymes

C3- Setup the clinical laboratory tests used to assess cardiac , kidney , liver, gastrointestinal , blood gases and electrolytes .

C4- Observe different molecular biological techniques relevant to diagnosis of clinical chemistry disorders

D- Communication & Transferable skills

D1- Show compassion : be understanding and respectful of patients, their families, and the staff and physicians caring for them .

D2- Interact with others without discrimination based on religious , ethnic , sexual , or educational differences .

D3- Conduct individual presentations at multidisciplinary conferences that are focused, clear and concise

D4- Communicate with, consult and respect the role of other health care providers .

(3) Course content:

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
Carbohydrate homeostasis	2		2		4
DM pathogenesis, C/P complications & diagnosis (Updates)	2		2		4
Classification of lipids & lipid metabolism	2		2		4
Cardiovascular risk factors	2		2		4
Metabolic syndrome	2		2		4
Amino acids classification and metabolism	2		2		4
Protein structure & metabolism	2		2		4
Acute phase proteins	2		2		4
Inborn error of metabolism I	2		2		4
Inborn error of metabolism II	2		2		4
Inborn error of fatty acids and organic acids metabolism	2		2		4
Physiology of normal renal functions & Glomeruler & tubular function tests	2		2		4
Chemical pathology of renal disorders	2		2		4
Water homeostasis & related factors	2		2		4
Electrolyte balance, electrolyte disturbance and there assay	2		2		4
Acid base balance disorders	2		2		4
Physiology of liver function & Liver function tests	2		2		4
Chemical pathology of hepatic disorders	2		2		4
Gastric function tests and gastric diseases	2		2		4
Exocrine pancreatic function tests & pancreatic diseases	2		2		4
Intestinal function tests & malabsorbtion syndromes	2		2		4
Cardiac function study	2		2		4
Diagnosis of ischemic heart diseases	2		2		4

Rule of laboratory in diagnosis & follow up of heart failure & hypertension	2		2		4
Clinical enzymology I	2		2		4
Clinical enzymology II	2		2		4
Clinical enzymology III	2		2		4
Ca homeostasis & assay	2		2		4
Phosphorous & Mg disorders & assay	2		2		4
Markesr of bone turnover	2		2		4
Vitamin assessment	2		2		4
Multiple endocrine neoplasm	2		2		4
Trace element assessment	2		2		4
Nutrition and obesity	2		2		4
Biochemical Tumor markers	2		2		4
Hypothalamopituitary unit	2		2		4
Hypothalamopituitary adrenal axis	2		2		4
Hypothalamopituitary thyroid axis	2		2		4
Pancreatic hormones	2		2		4
Reproductive related disorders	2		2		4
Clinical chemistry of pregnancy & fetal monitoring	2		2		4
Assessment of porphyrins and disorders of porphyrin metabolism ***Iron homeostasis***	2		2		4
Clinical chemistry of pediatric	2		2		4
Clinical chemistry of geriatric	2		2		4
Adipose tissue as an endocrine organ	2		2		4
Applications of molecular biology in clinical chemistry	2		2		4
Microarray in clinical chemistry	2		2		4
Therapeutic drug monitoring	2		2		4
Updates in Clinical Chemistry	24		24		48

- ***Genetic updates in clinical chemistry*** - ***Metabolic updates in clinical chemistry*** - ***Free radicals & oxidative stress*** - ***Cytokines, endothelial markers & oxidant stress.*** - ***Trace elements, elicit substance abuse & toxic elements in clinical chemistry field.*** - ***Newly advanced markers in disease management & prognosis.*** - ***Proteomics/genomics applications in clinical chemistry*** - ***Nano-concepts in clinical lab. medicine***					

(4)Teaching methods:

4.1: Lectures

4.2: Case study

4.3: Practical Lab

4.4: Self learning

5.4: Student teaching

(5) Assessment methods:

5.1: Written exam for assessment of knowledge & intellectual skills.

5.2: Oral exam for assessment of knowledge, intellectual & communication skills.

5.3: Practical exam for assessment of practical skills.

5.4: MCQ continuous assessment at the end of each semester

Percentage of each Assessment to the total mark:

Written exam: 26 . 66% (80)

Practical exam: 33 . 33% (100)

Oral exam: 33 . 33% (100)

MCQ exam: 6 . 66% (20)

(6)References of the course:

6.1: Hand books: Guide to Clinical Pathology

6.2: Text books: Tietz textbook of Clinical Chemistry and Molecular Diagnostics

6.3: Journals: Journal of Clinical Chemistry.

Course coordinator: Prof. / Tarek Selim

Head of the department: Prof. / Osama Elbaz

Date: