COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	**Postgraduate Master Degree in Clinical Pathology-CPATH 530**
(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 530CC** **CPATH 530 CCP**
(9) Credit hours	**CPATH 530CC (6)** **CPATH 530CCP (5)**

(10) Total teaching hours:	**CPATH 530CC(90)** **CPATH 530 CCP (150)**

(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-Describe disorders of carbohydrate, lipid and protein metabolism
A2-List the important cardiac and tumor biomarkers
A3-Recognize the unique aspects of obstetric and pediatric chemical pathology
A4-Identify the appropriate laboratory tests for assessment of hypothalamic-pituitary, thyroid, adrenal and gonadal functions
A5-Explain the applications of molecular techniques in clinical chemistry laboratory
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B- Intellectual skills

B1-Use appropriately and competently basic chemical pathology laboratory techniques
B2-Compare different technologies and designs of biochemistry analyzers
B3- Interpret results of tests of assessment of mineral, bone,vitamines, porphyrin and trace element metabolism
B4- apply appropriate laboratory tests for assessment of hepatic , renal, gastric and pancreatic functions

C- Professional/practical skills

C1-Apply spectrometry and immunochemical techniques in laboratory work
C2-Perform assessment of blood gases, acid-base balance and serum electrolytes
C3-Carry out the appropriate laboratory tests for diagnosis of diabetes , dyslipidemias and inborn errors of metabolisms
C4-Be able to detect errors and sources of errors in interpretation of clinical chemistry laboratory data

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- Work effectively and cooperatively and demonstrate interpersonal skills in functioning as member of a multidisciplinary health care team .
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		4		5	
DM pathogenesis, C/P, complications & diagnosis.	2		4		6	
Classification of lipids & lipid metabolism	2		4		5	
Cardiovascular risk factors	2		4		5	
Amino acids classification and Protein structure	2		3		4	
Acute phase proteins	3		4		6	
Inborn error of metabolism: - *Inborn error of amino acids* - *Inborn error of fatty acids and organic acids metabolism.*	3		4		7	
Physiology of normal renal functions, Glomeruler & tubular function tests	2		4		4	
Chemical pathology of renal disorders	3		4		7	
Water homeostasis & Electrolyte balance	2		4		7	
Acid base balance disorders	2		4		6	
Physiology of liver function & Liver function tests	2		4		4	
Chemical pathology of hepatic disorders	3		4		7	
Gastric function tests and gastric diseases	3		4		7	
Exocrine pancreatic function tests, intestinal function tests & malabsorbtion syndromes	3		4		7	
Cardiac function study	2		4		5	
Diagnosis of ischemic heart diseases	2		3		4	
Clinical enzymology I	2		4		5	
Clinical enzymology II	2		4		5	
Ca homeostasis & assay	2		4		5	
Phosphorous & Mg disorders & assay	2		4		6	
Vitamin assessment I	2		4		5	

Vitamin assessment II	2		4		5	
Trace element assessment Iron metabolism	3		4		7	
Nutrition and obesity	2		3		5	
Biochemical Tumor markers I	2		3		5	
Biochemical Tumor markers II	2		3		5	
Hypothalamopituitary adrenal axis	2		3		5	
Hypothalamopituitary thyroid axis	2		3		5	
Pancreatic hormones	2		4		5	
Reproductive related disorders	2		4		6	
Clinical chemistry of pregnancy Fetal risk assessment	3		4		7	
Assessment of porphyrins and disorders of porphyrin metabolism.	3		4		7	
Clinical chemistry of pediatric	2		4		6	
Multiple endocrine neoplasm	3		4		7	
Clinical chemistry of geriatric	2		4		6	
Adipose tissue as an endocrine organ	2		4		6	
General Principals of molecular biology techniques	3		4		7	
Applications of molecular biology in clinical chemistry	3		5		9	

(4) Teaching methods:

4.1: Lectures

4.2: Case study

4.3: Practical Lab.

4.4: Self-learning

4.5: Student teaching

(5) Assessment methods:

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

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

5.3: Practical exam for assessment of practical and transferrable skills.

5.4: MCQ continuous assessment at the end of each semester

Percentage of each Assessment to the total mark:

Written exam:	40%	(160 marks)
Oral exam	25%	(100 marks)
Practical exam:	25%	(100 marks)
M CQ exam:	10%	(40 marks)

(6) References of the course:

6.1: Hand books: Guide to Clinical Pathology

6.2: Text books: Tietz Text Book of Clinical Chemistry and Molecular Diagnostics.

6.3: Journals: Clinical Chemistry Journal

Course coordinator: Prof. Tarek Selim

Head of the department: Prof. Osama Elbaz