

Ministry of Higher Education and Scientific Research



Paitaxt Private Institute

(Medical Lab. Instrument) Course Catalogue

2020-2021

College/ Institute	Medical Technical Institute	
Department	Medical Laboratory Technology	
Module Name	Medical Lab. Instrument	
Module Code		
Semester	1	
Credit		
Module type	General	
Weekly hours	2	
Weekly hours (Theory)	(2)hr Class	(3)hr Workload
Weekly hours (Practical)	(2)hr Class	(1)hr Workload
Lecturer (Theory)	Dr. Fouad Hussein kamel	
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Course Book

<p>- Course overview: The student will demonstrate proper handling of laboratory chemicals; operate common analytical instruments; describe the theory and applications of various analytical instruments including types of electrophoresis, spectrophotometer, chromatography, and centrifugation; and practice laboratory safety.</p>
<p>- Course objective: identify in two or three paragraphs the important objectives of the course and show those points that students should learn at the end of the course.</p>
<p>- Student's obligation - This course will introduce the student to the general role of health care provider as well as the specific role of the Medical Laboratory Technician. Basic aspects of medical terminology, laboratory safety, quality control, microscopy, pipette techniques, laboratory mathematics .as the followings 1-The student attention in all theoretical and practical lectures in academic year. 2-Completion of all tests. 3-Attendance in exams. 4-Write or prepare reports.</p>
<p>- Forms of teaching lecture halls with data show equipment for lecture presentations, white board, overhead projector, posters</p>
<p>- Assessment scheme 6% Mid. Theory exam 10% Mid. practical exam 4% Quiz 40%Activity 25%final practical 15% final theory</p>
<p>- Specific learning outcome: - Ability to develop general knowledge - Knowledge and understanding of the subject area and understanding of the profession - Ability to identify, differentiate, pose and resolve problem - Demonstrate the ability to think critically and solve problems in a laboratory setting</p>

<ul style="list-style-type: none"> - Ability to apply knowledge in practice - Ability to search for process and analyze information from a variety of sources 		
<ul style="list-style-type: none"> - Course Reading List and References: - General or text book of Lab. Instrument (Author), Donald M. West (Author), - Modern Analytical Chemistry 1st Edition - by David T Harvey - 		
- Course topics (Theory)	Week	Learning Outcome
Microscope (Parts of Microscope, Use of Microscope & care of microscope).	1	Describe the identify each part
Phase contrast & Dark field microscope	2	Explain the types of Microscope
Centrifuge	3	Define and explain each part with type of instrument
Balances Oven	4	Two devices in detail
Incubator	5	Known types of of incubator and parts
Autoclave	6	Learning to how can using the oven and the part
CBC	7	Count blood cell ,principle and measurement
Ph. meter	8	Describe the acidity and alkaline solutions
Water bath	9	Describe principle of device
Spectrophotometer	10	Measurement the wavelength of substance
VIDUS+ MiniVIDUS	11	Application this device in viral field
Electrophoresis Elisa	12	Parts and operation of devices
Practical Topics (If there is any)		Learning Outcome

Microscope (Parts of Microscope, Use of Microscope & care of microscope).	1	Describe the operation of device and identify each part
Phase contrast & Dark field microscope	2	Explain the types of Microscope in details
Centrifuge	3	Operation of device and explain each part with type of instrument
Balances Oven	4	Two devices in detail
Incubator	5	Explain the operation device and the effect of temperature then types of of incubator and parts
Autoclave	6	Learning to how can using the autoclave and the part
CBC	7	Operation the Count blood cell devices ,principle and measurement
Ph. meter	8	Describe the acidity and alkaline solutions Describe principle of device in practical
Water bath	9	Describe principle of device
Spectrophotometer	10	Measurement the wavelength of substance and applied in many solution to the see the different between them
VIDUS+MiniVIDUS	11	Application this device in viral field
Electrophoresis Elisa	12	Parts and operation of devices
Q1) Fill the blanks with suitable words:		(28M)
<p>1- The centrifuge works using the -----</p> <p>2- Distillation is a process of ----- the component or substances from a liquid (Mixture) by selective ----- and ----- .</p> <p>3-The working principle of ----- is to heat a mixture at a specific temperature.</p> <p>4-In a laboratory centrifuge that uses sample tubes, the radial acceleration causes ----- particles to settle to the bottom of the tube, while ----- substances rise to the top.</p>		
Q2) Answer the followings:		(24M)

A- Types of pH meter:

B- Write the different between the light microscope and electron microscope

C- Enumerate the classification of centrifuges:

- **Extra notes:**

- **External Evaluator**

The outcome of course book evaluation is commonly more explicit and follows the principles and rules in general.

