INSTITUTE	**FACULTY OF SCIENCE**
PROGRAM	**POSTGRADUATE DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY**
SEMESTER	**1**
COURSE TITLE	**BASIC AND CLINICAL PATHOLOGY**
COURSE CODE	**02ML1101**
COURSE CREDITS	**4**

Objective:

1 To provide deep insights of principles and analysis of pathological samples and associated diseases.

Course Outcomes: After completion of this course, student will be able to:

1 Students will be able to distinguish and differentiate between various pathological conditions.

2 Students will gain knowledge of cellular level changes in the event of tissue infection and injury

3 Students will become well versed with sample collection methods and its pathological analysis.

4 Students will gain deep insights into the pathophysiology of health disorders and deficiency diseases.

Pre-requisite of course: Basic knowledge of biomolecules

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
4	0	0	50	30	20	0	0

Contents : Unit	Topics	Contact Hours
1	**Basic Pathology** Introduction & History of pathology, Basic definitions, and familiarization with the common terms used in pathology, Causes and mechanisms of cell injury, reversible and irreversible injury, Introduction of hyperplasia, hypoplasia, hypertrophy, atrophy, metaplasia, necrosis and apoptosis.	10

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Contents : Unit	Topics	Contact Hours
2	**Urine Analysis** Urinary system, the composition of urine. Collection & preservation of urine sample. Physical Examination: Volume, Colour, Appearance, Specific gravity, pH. Chemical Examination: Sugar, Protein, Ketone bodies, Bile salt, Bile pigment, urobilinogen, occult blood, Bence-Jones protein. Microscopic examination: Cells, crystals, casts, parasites. Pregnancy test-Production of HCG.	5
3	**Faeces Analysis** Method of collection. Physical Examination: colour, mucous, consistency. Chemical Examination: Occult blood, faecal urobilinogen & fat. Microscopic Examination: Pus cells, RBCs, Crystals & Parasitic trophozoites, ova, cyst, adult parasites.Various concentration method of microscopic examination.	30
4	**Sputum Examination** Methods for collection & preservation. Physical examination. Microscopic examination of sputum: crystals, various staining preparation, concentration method for AFB. Examination of Miscellaneous Body Fluids: Transudate & Exudate. Cerebrospinal fluid, Pleural fluid, Synovial fluid, Gastric juice, Pericardial fluid, Peritoneal fluid, Semen.	15
Total Hours		**60**

Textbook :

1 Textbook of Pathology, Harshmohan , Jaypee Publications, 2017

References:

1 Textbook of Pathology, Textbook of Pathology, Harshmohan , Jaypee Publications , 2017

2 Medical Laboratory Technology , Medical Laboratory Technology , Praful B. Godkar, Springer publications, 2016

3 Textbook of Pathology, Textbook of Pathology, Robbins, Elsevier Publications, 2012

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
30.00	25.00	25.00	15.00	5.00	

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Instructional Method:

1 The course delivery method will depend upon the requirement of the content and need of students. The teacher in addition to the conventional teaching method by blackboard may also use any of the tools such as demonstration, role play, Quiz, brainstorming, etc.

2 The internal evaluation will be done based on continuous evaluation of students in the classroom in the form of attendance, assignments, verbal interactions, etc.

3 Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory.

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