

CMJ UNIVERSITY

SHILLONG, MEGHALAYA.

Recognized by UGC

DETAILED SYLLABUS

Certificate Program Medical Laboratory Technology

(YEARLY SYSTEM)

**COURSE TITLE : CERTIFICATE IN MEDICAL
LABORATORY TECHNOLOGY**

DURATION : 1 YEAR

TOTAL DIPLOMA MARKS : 1300

<i>COURSE TITLE</i>	<i>Paper Code</i>	<i>MARKS</i>		
		THEORY	PRACTICAL	TOTAL
BASICS OF HUMAN ANATOMY	CMLT-110 CMLT-110/P	100	100	200
BASICS OF MEDICAL PHYSIOLOGY	CMLT-120 CMLT-120/P	100	100	200
PATHOLOGY	CMLT-130 CMLT-130/P	100	100	200
COMPUTER SKILLS	CMLT-140	100	00	100
COMMUNICATION SKILLS	CMLT-210	100	00	100
BASICS OF BIOCHEMISTRY	CMLT-220 CMLT-120/P	100	100	200
INTRODUCTION TO MICROBIOLOGY	CMLT-230 CMLT-130/P	100	100	200
MS-OFFICE	CMLT-240	50	50	100

Note:

Theory Paper: 30% Continuous Internal Assessment and 70% University examination.

Practical Paper: 30% Continuous Internal Assessment and 70% University examination.

Continuous Internal Assessment:

- 1) Two or three tests out of which minimum two Internal Assessment will be considered for Assessment 60% of Continuous Internal Assessment 30% of Continuous Internal Assessment
- 2) Seminars/Assignments/Quizzes 10% of Continuous Internal Assessment
- 3) Attendance, class participation and beha

CMLT-110

BASICS OF HUMAN ANATOMY

Maximum Time : 3 Hrs.
:70 %

University Examination

Total Marks : 100

Continuous Internal Assessment:30 %

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Skeleton Structures of Bone, Vertebral Column, Upper Extremity, Lower Extremity, superior extremity, inferior extremity, ossification centers, bone of upper limb, radius and uina, surface marker of thorax abdomen, head and neck.

CMLT-110 P BASICS OF HUMAN ANATOMY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. CMLT 110.

CMLT -120

BASICS OF MEDICAL PHYSIOLOGY

Maximum Time : 3 Hrs.

University Examination

:70 %

Total Marks : 100

Continuous Internal Assessment :

30%

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

General information:- The cell, membrane potential, some common terms used in physiology.

Blood:- Red blood corpuscles, hemoglobin, the leucocytes, immunity, origin and function of lymphocytes, reticulate endothelial system, the platelets, homeostasis, coagulation of blood, the plasma proteins, blood groups.

Digestive system:- introduction to digestive system. Elementary functional anatomical considerations, the salivary glands, the stomach and its secretion, pancreas, the bile, the small intestine, movement of the alimentary tract, gastrointestinal hormones, apud cells.

Respiratory system:- Functional anatomy, ventilation, control of ventilation, exchange of gases between the alveoli and pulmonary capillary blood, carriage of O₂ and CO₂ by the blood and their exchange at the tissue level, applied and environment physiology Defense mechanism. Changes with age.

CMLT –120P BASICS OF MEDICAL PHYSIOLOGY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. CMLT 120.

CMLT-130

Maximum Time : 3 Hrs.

:70 %

Total Marks : 100
30%

Minimum Pass Marks : 40%

PATHOLOGY

University Examination

Continuous Internal Assessment :

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

The Cell in Health and Disease:- Introduction to Pathology, Cellular Structure and Metabolism, Etiology and Pathogenesis of Disease, Intracellular Accumulations and Disorders of Metabolism, Amyloidosis, Degenerations and Cell Death.

Inflammation and Healing, Immunity and Hypersensitivity, Infection and infestation:- Inflammation-Acute and Chronic, Granulomatous Inflammation, Healing, immunity and Hypersensitivity, Infection and Infestation.

Fluid and Haemodynamic Derangements:- Derangements of Body Fluids and Electrolytes, Haemodynamic Disorders due to Deranged Blood Volume, Haemodynamic Disorders of Obstructive Nature, Ischaemia and Infarction.

Growth Disorders and Neoplasia:- Adaptive Disorders of Growth, General Aspects of Neoplasia, Etiology and pathogenesis of Neoplasia, Clinical Aspects of Neoplasia, Common Specific Tumors.

CMLT-130 P

PATHOLOGY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. CMLT 130.

CMLT-140

COMPUTER SKILLS

Maximum Time : 3 Hrs.

University Examination

:70 %

Total Marks : 100

Continuous Internal Assessment :

30%

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Hardware & Software: CPU, RAM, SSD, Operating Systems, System Software's, and Application Software. Inside Computers. Computer Systems. Input-Output devices: Monitor, Keyboard, Mouse, System Unit, Printer, and Scanner.

Storage devices : Floppy disk, Hard disk, Cartridge tape, CD-ROM

Printers : Dot-Matrix, Inkjet, LaserJet, Colour printer, High speed printer, Label printer, Plotters.

PROGRAMMING LANGUAGE: -Compiler, Assembly Language, Machine Language.

Graphical user interface: Windows 3x, Program manager, Main & accessories program groups, Multitasking.

CMLT-210

COMMUNICATION SKILLS

**Maximum Time : 3 Hrs.
:70 %**

University Examination

Total Marks : 100

Continuous Internal Assessment:30 %

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Basic Skills: - Listening, Speaking, Reading and Writing.

Comprehension: - Reading Comprehension, Passages, Poems.

Listening Comprehension: - Talks, Reports, Poems

Writing Skills: - Paragraph Writing, Composition Writing, Report Writing, Application & Letter Writing

Grammar: - Simple, Compound and complex sentences, Co-ordinate clause (with, but or either-or, Neither-Nor otherwise or else), Subordinate clauses-noun clauses-as subjects object and complement: Relative Clauses (restrictive and non-restrictive clauses). Adverb clauses (open and hypothetical, Comparative Clauses

Simple present, progressive and present perfect, simple past, progressive and past perfect, indication of futurity, the passive (Sample present and past, present and past perfect and 'to' infinitive structure), Reported Speech: - (I) Declarative sentences, (ii) Imperatives (iii) Interrogatives –question, Yes/No Questions, Exclamation sentences, Modals (will, shall, should, would, ought to, have to/have got to, can, could, me-might and need), Verb structures (infinitives and gerundial)

CMLT-220

BASICS OF BIOCHEMISTRY

Maximum Time : 3 Hrs.

University Examination

:70 %

Total Marks : 100

Continuous Internal Assessment :

30%

Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Basics of Biochemistry: - Definition of solutions, Methods of Expressing Concentration; Dilution Problems; Specific Gravity.

CMLT-220 P

BASICS OF BIOCHEMISTRY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. CMLT 220.

**CMLT-230
MICROBIOLOGY**

INTRODUCTION OF

Maximum Time : 3 Hrs. University Examination :70 %
Total Marks : 100 Continuous Internal Assessment : 30%
Minimum Pass Marks : 40%

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

Structure, characteristics & classification of bacteria, viruses, fungi and protozoa. The handling and control of microorganisms. Basic principles of medical microbiology and immunology.

CMLT-230P INTRODUCTION OF MICROBIOLOGY

The laboratory course will comprise of exercises on what is learnt in the theory classes of the same course i.e. CMLT 230.

CMLT-240

MS-OFFICE

Maximum Time	: 3 Hrs.	University Examination	:70
%			
Total Marks	: 100	Continuous Internal Assessment	:
30%			
Minimum Pass Marks	: 40%		

A) Instructions for paper-setter

1. The question paper will be divided into two parts. Part-I will contain subjective questions. This part will carry 60% of the total marks.
2. Part-II will comprise of 10-15 short questions, which will cover the entire syllabus and will carry 40% of the total marks.

B) Instructions for the candidates

1. Candidates are required to attempt Part-I as defined in the question paper and the entire part-II.
2. Use of non-programmable scientific calculator is allowed

COURSE CONTENTS

MS Word: Creating documents, Formatting, Auto text, Auto correct, Tables, Page setup, Printing, Object linking & embedding, Spell check, Thesaurus, Mail merge, Word art, Clip art.
Setup.

MS Excel: Creating workbooks & worksheets, Formulas & functions, Linking workbooks & worksheets, Cell references, Formatting, Creating charts, Data lists, Page setup, Printing.

MS Power Point: Creating slides with different layouts and templates, Inserting charts, Tables, Organization charts, Pictures, Running a screen show, Presenta