

Part A Introduction

Program: Under Graduate Degree Course

Level - IIIrd Year

Session: 2024-25

Course Code	V3-ZOO-MEDT - V Sem
Course Title	Medical Diagnostics and Health Care
Course Type	Vocational
Pre-requisite (if any)	Diploma Course
Course Learning outcomes (CLO)	After completion of course, students will be able to - 1. Handle all laboratory diagnostics instruments. 2. Learn the fundamental concepts of ancient India and modern medical diagnostic tools. 3. Understand the role of microbes by its identification. 4. Learn the basic skills needed for health care management. 5. Know about career opportunities available in these fields.
Expected Job Role / career opportunities	1) Medical Lab Technician 3) Medical Transcriptionist 5) Medical Representative 2) Forensic Science 4) Laboratory Receptionist 6) Health Care Worker
Credit Value	2 (Theory) + 2 (Practical) = 04

Part B- Content of the Course

Total No. of Lectures + Practical (in hours per week): L-1 Hr / P-1 Lab Hr (=2 Hrs)

Total No. of Lectures/ Practical: L-30 /P-30 (60 Hrs)

Module	Topics	No. of lectures (Total 30)
I	Ancient Medical Techniques in India and Modern Medical System 1.1 Ayurveda the oldest medical disciplines Charak Samhita and Sushruta Samhita 1.2 Shodana and Shaman Chikitsa. 1.2 Modern medical system Allopathic medicine. 1.4 Medical history of diagnosis. 1.5 General concept of genomic era in diagnostics.	10
II	Infectious Disease and Immuno technology 2.1 Infectious Diseases Symptoms and Causes (Common Cold, Flu, Covid -19, Hepatitis) 2.2 Immune response to viral infections AIDS, Tuberculosis. 2.3 Introduction to animal tissue culture techniques Culture media preparation 2.4 Tissue Biopsy. 2.5 Blood Bank Management	10

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III	Fundamentals of Health care machines used in diagnostics.	
	3.1 Principle and working of machines X-ray, CT Scan, USG, ECG.	
	3.2 Training of Health care workers.	
	3.3 Integrative Pain Management/ Cardiopulmonary Resuscitation, Steps of CPR Techniques.	10
	3.4 Women Health Care.	
	3.5 Palliative Care – Overview.	
	Practical	No. of lecture (30)
1.	Study of safety measure and protocols of diagnostic laboratory.	2
2.	To identify Pathogenic microbes Bacteria – Ecoli, Salmonella Virus – Hepatistis A, Covid Virus, HIV Virus Fungi – Candida, Microsporidia	8
3.	Preparation of Culture media (Liquid + Solid)	4
4.	Sterilisation method and its uses	4
5.	Study of 2 immunological disorders AIDS , Type I Diabetes	4
6.	Demonstration of Steps of CPR & Biopsy.	4
7.	Study of common imaging instruments X-rays, CT Scan, MRI Scan, ECG (By images and Laboratory Visit)	4

Project/ Field Trip: Visit to any medical diagnostics laboratory.

Part C-Learning Resources

Text Books, Reference Books, Other resources

1. Godkar P.B., 'Text Book of Medical Laboratory Technology', Bhalani Publishers Vol. I & II.
2. J.Owen, Punk Stranford, 'Kuby's Immunology' 7th Edition, Macmillan Higher Education, England.
3. Rajendra Prasad Gupta, 'Health care reforms in India', Elsevier.
4. Chitabrata Palt, Achintya Dutta, 'History of Medicine in India'.
5. Christina Faull, 'Handbook of Palliative Care', Willey- Blackwell, 3rd Edition 2012
6. Nagoba B.S., Picharu Asha, 'Medical Microbiology & Parasitology'
7. Verma O.P., "Sankramak Rog evam Chikitsa", Chowkhamba Oriental Publishers 2011.
8. गुजराल, एम.एल., आधुनिक चिकित्सा, प्रकाशक मोतीलाल बनारसीदास, वाराणसी, 1956.
9. Vinay Kumar, Abdul K. Abbas, C, John Aster, Fausto Nelson "Robbins and Cotran Pathologic Basis of Disease", 8th Edition, 2009, Saunders Publishers.

Suggested equivalent online courses: e-reading:

1. <https://www.mooc-list.com>
2. <https://www.coursera.org>
3. <https://www.futurlearn.com>
4. www.onlinecourses.nptel.ac.in
5. <https://www.swayam.com>

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