

DEPARTMENT OF BIO-TECHNOLOGY
VALUE ADDED COURSE
CLINICAL DIAGNOSTIC METHODS

HOURS: 30

Course Outcomes:

At the end of the course, students will be able to:

- CO.1. Develop fundamental understanding on diagnostic methods performed at laboratories and hospitals for diagnosing human diseases.
- CO.2. Learnt various techniques like blood glucose test, blood pressure measurement, blood cells counting, Lipid profile etc.
- CO.3. Demonstrate understanding of skills required to diagnose various disorders.
- CO.4. Improve awareness about the interface between values, beliefs and ethical decision making in therapeutic settings.
- CO.5. Analyse the most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements.

UNIT I

6 hrs

Introduction to diagnostic methods: Definition –invitro diagnostic methods – types, scope and applications. Physical examination – palpation, percussion and auscultation.

UNIT II

6 hrs

General Chemistry: Measurement of base compounds in the body –urine routine examination – acidity, sugar, bilirubin, ketones, protein, nitrite, leukocyte esterase and fecal occult blood tests (FOBT).

UNIT III

6 hrs

Haematology: Study of the blood -complete blood count, coagulation tests (eg., INR), calcium level test, chloride, sodium, potassium, ESR test, bleeding time and clotting time.

UNIT IV

6 hrs

Microbiology: Manifestation of infection and microbial causes of infection. Microscopic examination, antimicrobial susceptibility, KOH preparation, AFB testing, blood culture and basic metabolic panel.

UNIT V

6 hrs

Health conditions and associated tests: Heart disease lipid panel (cholesterol and triglyceride) – troponin, Respiratory disease – blood gas test, Diabetes – glucose and HbA1c, Renal disease – creatinine and BUN.

Text Books:

1. Geoffrey Beckett, Simon W. Walker, Peter Rae, Peter Ashby., Clinical Biochemistry. 7th edition. John Wiley & Sons. Blackwell Publishing, 2006.
2. M. N. Chatterjea, Rana Shinde. Textbook of medical Biochemistry. 6th edition, Jaypee Brothers, Medical Publishers (p) Ltd. New Delhi.

VALUE ADDED COURSE
HERBAL HEALTHCARE PRACTICES

HOURS: 30

Course Outcomes:

At the end of the course, students will be able to:

- CO.1. Create a comprehensive wellness plan incorporating herbal, dietary and lifestyle recommendations integrating self-awareness and lessons of nature.
- CO.2. Demonstrate the ability to critically analyze herbal research and contribute to the current body of herbal literature.
- CO.3. Integrate knowledge of raw materials, formulation, and herbal pharmacy for product development purposes
- CO.4. Bridge the information gap of evidence-based data and traditional knowledge so as to make rational decisions in developing safe and effective herbal products and formulas.
- CO.5. Gain advanced skills in Harvesting and processing of plant material and also in Rationale design, product preparation, and formulation of herbal products.

Unit I **6 hrs**

Herbal therapeutics: Introduction to indigenous herbs in medicine, History of herbal medicine, formulations types-decoctions, legium, sooranam, baspam and others.

Unit II **6 hrs**

Herbal formulation for common diseases: Treating common cold, flu, children illness and women illness, Managing diabetics and cardiovascular diseases.

Unit III **6 hrs**

Herbs in food and nutrition: Herbal food supplements, Nutritional supplements, culinary herbs, the nutritional value of herbs, beneficial use of herbs as a food supplement.

Unit IV **6 hrs**

Herbal cosmetics and first aid kits: Skin care herbal Products-Soap, face Cream, Moisturizers, lip balms, eyeliner and Kajal, Hair care products, herbal first-aid kit specific for home and travel, Common household accidents and their first-aid treatment.

Unit V **6 hrs**

Herbal gardening: Parameters to check for growing herbs, Outdoor herbal gardening, Indoor herbal gardening, drying and packaging of herbs for marketing.

Text Books:

1. Matthew Wood, The Practice of Traditional Western Herbalism: Basic Doctrine, Energetic, and Classification, 2nd edition, North Atlantic books, 2013
2. David Hoffman, Medical Herbalism: The Science and Practice of Herbal Medicine, Healing Arts, 1st edition, 2003
3. Thomas Easley and Steven Horne, The Modern Herbal Dispensatory: A Medicine-Making Guide, 4th edition, North Atlantic Book, 2016