Clinical Nutrition

NUTRITION ASSESSMENT LABORATORY

INTRODUCTION

Lab sessions complement the theory taught regarding different aspects of nutritional assessment, anthropometric, laboratory, clinical, dietary assessments, and include an evaluation of their strengths and limitations. The lab provides development of practical skills and active application of tools and techniques used for assessment of nutritional status.

EQUIPMENT AND INSTRUMENTS:

- Weighing Scale
- Height Meter
- Skin Fold Calipers
- Measuring Tapes
- Body Composition Analyzer (BCA Machine)
- Stethoscope
- Blood Pressure Instrument
- Stop Watch
- Diet Sheets/Questionnaires/Formats
- Simulated Food Models
- Step for Fitness Test

EXPERIMENTS

- Body Measurements: Standing Height, Circumferences (Head, Mid-Upper Arm, Chest, Waist, Hips, Wrist)
- Body Mass: Weight
- Body Composition: Skin Fold Thickness (Biceps, Triceps, Sub-Scapular, Supra-Iliac); Body Composition Through BCA Machine
- Blood Pressure
- Pulse Rate
• Nutritional Assessment Through Anthropometric Indices (Weight for Height, Height for Age and Weight for Age, Body Mass Index- BMI, Ideal Body Weight, Adjusted Body Weight, Body Frame Size, Waist Hip Ratio, Head to Chest Ratio)
• Nutritional Assessment in Hospitalized Condition and Weight Changes
• Energy Expenditure: Basal Energy Expenditure (BEE) Using Harris Benedict and Mifflin Equations
• Dietary Intake: 24-Hour Recall, Diet History, Food Frequency, Observation, Weighment Methods
• Nutrient Intakes Calculations Based on the Dietary Intake
• Functional Test Using a Step to Assess Fitness
• Clinical Assessment Through Examination of Clinical Signs from Head to Toe
• Hospital Visits to Collect Information on the Important Biochemical Parameters Used in Nutritional Assessment and Their Normal Ranges
• Effective Counseling: Demonstration of Nutritional Counseling and Mock Sessions

TESTS AND SERVICES

• Body Composition
• Nutritional Assessment
FOOD PROCESSING AND PREPARATION LABORATORY

INTRODUCTION
Practical training is combined with theoretical knowledge to equip students with the skills and scientific applications for food processing and preparation.

EQUIPMENT AND INSTRUMENTS
Kitchenette-working stations for students equipped with the equipment required in the kitchen for processing and preparation of food

EXPERIMENTS
- Measuring Techniques
- Methods of Cooking Including Moist Heat, Dry Heat & Microwave Cooking
- Sanitation in Food Processing and Preparation
- Vegetables and Dried Legumes Cooking
- Cereals Cooking
- Fruit Cooking
- Meat and Poultry Cooking
- Milk and Milk Products
- Eggs and Custards
- Lipid Absorption During Frying
- Yeast Leavened Breads
- Butter Type Cakes
- Design of Food Label
PRACTICAL FOOD ANALYSIS LABORATORY

INTRODUCTION

This lab introduces students to the methods of food analysis, its use and limitations. Procedures and instruments for the analysis of specific chemicals and food components are demonstrated and practiced. Practical training focuses on the analysis of various food groups for their major and minor food components including their chemical separation, identification and quantification using classical and modern instrumental food analysis techniques.

EQUIPMENT AND INSTRUMENTS

- pH Meter
- Top Loading Analytical Balance
- Balance
- Oven (up to 120°C)
- Vacuum Oven
- Muffle Furnace ~ 550°C
- Water Activity Meter
- Dessicator
- Complete Soxhelt Unit for Fat
- Kjeldahl (Digestion and Distillation Units) System for Total Proteins
- Gerber Centrifuge for Milk Fat Determination
- Fiber Tech System
- Digital Refractometer for Food Application
- Digital Colorimeter for Food Applications

EXPERIMENTS

- Determination of Food Components
- Moisture and Ash
- Water Activity
- Lipids
- Proteins
- Carbohydrates
- Fiber
- Minerals
- Vitamins
- Color
- Food Additives