

## - Nutrition(2201 ) 2h(per week)

- Introduction to nutrition in relation to health & disease
- Proximate principles:
  - Food & nutrition: food diet, nutrition function of food, classification of foods.
  - Relation of food to health – caloric exchanges.
  - Energy: Definition of caloric & Joule, energy in relation to activity, sources, caloric deficiency, caloric excess.
  - Carbohydrate: Introduction, definition classification, sources, functions, daily allowance.
  - Protein: Introduction, definition, sources, functions, daily allowance.
  - Fats. Introduction, definition function, essential fatty acids.
- Vitamins:
  - Definition of vitamins (in general) water soluble vitamins Introduction, sources, function, recommended intakes, deficiency.
  - Fat soluble vitamins Introduction, sources, recommended intakes, deficiency
- Minerals:
  - Calcium, sources, function, recommended daily allowance, relation with vit. D
  - Phosphorus: sources, function, recommended daily allowance and importance.
  - Iron, sources, function, recommended daily allowance, significant, classification of anaemia.
  - Iodine, zinc, magnesium: sources, function, RDA, biological significant.
  - Water: sources function, is biological requirement, water distribution in the body, water intake & output, relation & depletion, forces moving water and solutes across membranes Electrolytes Na & K sources, functions, recommended daily allowance biological significance.
- Applied nutrition:
  - Balanced diet, composition of balance diet proportion for adults.
  - Family composition unit, definition.
  - Nutritive contribution of food groups  
A, B, C, D  
Milk & product Fruit & vegetables Meat eggs Bread & cereals
  - Diet survey – methods
    - Recall method
    - Weighment
    - - Duplicate diet sampling
  - Diet & physiological status.
    - - Pregnancy & lactation
    - - Breast feeding, weaning
  - Nutritional requirement for preschool children
  - Nutritional requirement for school age
  - Adolescents & adults diet

- Diet in old age
- Diet for athletes

*C- The foods & their composition:*

23. Food composition tables

*D- National & international programs in \_\_\_\_\_ :*

24. Unicef role, FAO role, the role of world program, role of WHO program's, united development program, World Bank.

**- PHARMACOLOGY (2110) 2h(per week)**

**General pharmacology:** Definitions, sources of drugs, dosage forms of drugs, Pharmacokinetics, Pharmaco-dynamics, Adverse drug reactions, factors affecting drug response (including drug handling in elderly, pregnancy and paediatrics).

Autonomic nervous system.

Brief account of cholinergic, anticholinergic drugs. Sympathomimetics and  $\alpha$  and  $\beta$  blockers.

Systemic Pharmacology.

Very brief account of classes of drugs with examples.

**Class test I :-**

- Antihypertensive drugs
- Antianginal drugs
- Analgesics, anti-inflammatory drugs
- Drug treatment of diabetes mellitus
- Oral contraceptives
- Drugs treatment of peptic ulcer
- Drug treatment of bronchial asthma
- Drugs used in allergic disorders
- Sedatives, hypnotics
- Antimicrobials and chemotherapy of bacterial, viral, protozoal and helminthic infections, drug treatment of sexually transmitted disease.

**Class II (treatment of sexually transmitted disease)**

- Immunosuppressants
- Corticosteroids and other immunosuppressants
- Drug Abuse
- Drug toxicity and treatment of poisoning
- Over-the-counter drugs
- Drug interactions

**Class test III (drug interactions)**

**- PATHOLOGY (2109) 2h(per week)**

- *Diseases at cellular level*
  - *inflammation*
  - *Necrosis*
- *Vascular disturbance*
  - *Thrombosis*
  - *Embolism*
  - *Hemorrhage and congestion*
  - *Shock*
- *Growth disturbance*
  - *hyperplasia*
  - *hypertrophy*
  - *hypoplasia or aplasia*
  - *atrophy*
  - *metaplasia*
  - *dysplasia*
- *Neoplasia*
  - *carcinoma*
  - *sarcoma*
  - *clinical diagnosis of cancer*
- *Syphilis*
  - *mode of infection*
  - *primary and secondary syphilis*
  - *tertiary stage of syphilis*
  - *congenital syphilis*
  - *diagnosis of syphilis*
- *Atherosclerosis*
  - *definition and it's factors*
  - *morphology of atherosclerosis*
  - *distribution and complication*
- *Hypertension*
  - *definition*
  - *primary and secondary hypertension*
  - *endocrine disorder*
  - *malignant hypertension*
- *Thrombosis*
  - *embolism*
  - *mural thrombi*
  - *fate of thrombus*
- *infarction*
  - *types and clinical examples*

- *Viral hepatitis*
  - *HAV, HBV, HDV, HCV and HIV*
  - *Causes of hepatitis*
  - *Mode of transmission*
  - *Serological markers*
  - *Pathogenesis*
  - *Clinical syndromes*
- *Immune mechanism*
  - *antigen*
  - *antibodies*
  - *humoral and cellular immunity*
  - *hypersensitivity reaction*
- *Autoimmune diseases*
  - *it's mechanisms*
  - *immune defeciency*
  - *AIDS*
  - *HIV infection*
  - *Retrovirus*
  - *Spread virus through sexual transmission*
  - *Blood transmission and placental transfer*
- *Obesity*
  - *measurement of obesity*
  - *causes of obesity*
  - *diet and cancer*
  - *aflatoxins, food additives.*
- *Tuberculosis*
  - *causative organism*
  - *mode of infection*
  - *predisposing factor*
  - *primary and secondary T.B*
  - *complication and tuberculin test*
  - *prevention of T.B*
- *Ischemic heart diseases*
  - *angina pectoris*
  - *myocardial infarction*
  - *chronic heart disease*
  - *sudden death*
- *peptic ulcer*
  - *definition*
  - *distribution of peptic ulcer*

- *epidemiology of peptic ulcer*
- *pathogenesis*
- *predisposing factor for duodenal ulcer*
- *predisposing factor for gastric ulcer*
- *clinical picture of peptic ulcer*
- *complication*
- *Gall stone*
  - *types*
  - *incidence and risk factors*
  - *pathogenesis*
  - *morphology*
  - *clinical implication*
  - *symptoms*
- *Cholecystitis*
  - *types and morphology*

**- Environment(2301) 2h(per week)**

***Part One: Occupational environment***

- Introduction to occupational environment
- Physical hazards at workplaces
- Industrial noise
- Community noise
- Ventilation
- Heat stress
- Vibration
- Ionizing radiation
- Non ionizing radiation
- Decompression sickness
- Chemical hazards at workplaces
- Introduction to toxicology
- Dose response relationship
- Threshold limit values
- Lead hazard
- Mercury hazard

***Part Two: Physical and chemical environment hazards***

- *Solid Wastes*
- *Introduction*
- *Types of solid wastes*
- *Collection systems*
- *Hazards of solid wastes*
- *Sanitary landfill disposal*
- Site selection
- Cell construction
- Landfill equipment's and operations
- Environmental Hazards
- Biological activity

- *Incineration*
- *Composting*
- *Solid waste Recycling*
- *Miscellaneous*
- *Liquid Wastes*
- *Introduction*
- *Water waste*
- *Composition of sewage*
- *Characteristics of waste water*
- *Sources of waste water*
- *Waste water Treatment*
- *Aim of sewage purification*
- *Secondary sedimentation*
- *Sludge digestion*
- *Sludge disposal method*
- *Public health importance of excreta disposal*
- *How disease is carried from excreta*
- *Sanitation of excreta disposal*
- *Methods of excreta disposal*
- *Septic Tank*
- *Industrial and Radioactive wastes*
- *Types of industrial wastes and their significance*
- *Radiation at the work place*
- *Environmental radiation pollution*
- *Radioactive waste*
- *Water pollution*
- *Introduction*
- *Sources of water, uses, ground water, surface water*
- *Characteristics of water*
- *Requirement of water, quality and quantity requirement*
- *Sources of water pollution*
- *Health aspects of water related diseases*
- *Water distribution system*
- *Purification of water*
- *Air pollution*
- *Definition, history of air pollution*
- *Sources of air pollution*
- *Community air pollutants*
- *Hazardous substances*



- *Global pollutants*
- *Biological agents*
- *Air Quality standard*
- *Global effects*
- *Green house effects*
- *Ozone depletion*
- *Acid rains*
- *Food Hygiene*
- *Introduction*
- *Sources of food contamination*
- *Sanitary consideration in food handling*
- *Food service operations*
- *Cleaning techniques*
- *Waste production in the food processing industry*
- *Hazards analysis critical control points*
- *Control of food contamination*
- *Basic regulations aim at elimination of contamination of foods in shops, restaurants and factories*
- *Housing residential and institution environment*
- *Introduction to sanitary housing*
- *Health aspects of housing*
- *Housing criteria*
- *Influence of neighbor-hood*
- *Site selection of housing*
- *Internal housing environment*

***Part Three: Biological environment***

- *Introduction*
- *Classification of Arthropods*
- *Medical importance of Arthropods*
- *Insects and hygiene*
- *The ways in which injurious arthropods effect the health of man*
- *Directly injurious arthropods*
- *Indirectly injurious arthropods*
- *Class insects (Hexapoda)*
- *Orders of medical importance in class in class*
- *Insecta*
- *Diptera*

*Faculty of Public health  
Syllabus Of Second Year*

- Siphonaptera
- Anoplura
- Dictyoptera
- *Class Arachnida (Octapoda)*
- Acarina
- Araneida
- Scorpionida
- *Class crustacea (Decapoda)*
- Cyclops
- *Class chilopoda (Centipeds)*
- Scolopendra
- *Arthropods directly affecting health including the so called venomous arthropods*
- *Rodents*
- Introduction
- Biological and ecological
- Characteristics
- Public health importance

**- Epidemiology(2112) 2h(per week)**

- Measures of morbidity
- Measures of mortality
- Epidemiological studies
- Introduction and descriptive studies
- Analytical studies
- Introduction and case-control study
- Cohort study
- Experimental studies with special reference to preventive trials and field trials
- Epidemic investigation design
- Objectives, steps and tools
- Types of epidemic curves, characteristics of vector and vehicle born epidemics
- Health information system
- Community diagnosis, definition, sources of health data
- Ad hoc system of collecting data, surveys types
- Steps, merits and demerits of each type of survey
- Surveillance system
- Types, purposes, surveillance cycle
- Local surveillance system
- Notification and notifiable diseases local and international
- Diagnostic testing
- screening
- International health regulations
- Exercise sessions

## **- General statistics (2124) 2h(per week)**

### **Elementary statistics**

- Introduction to the role of statistics in human biology and health care delivery.
- Scales of measurements and sources of data.
- Presentation of numerical data.
- Presentation of Nominal and ordinal data.
- Published research examples and relevant exercises.
- Measures of central tendency
- Measures of spread
- (Dispersion)
- Meaning and concept of probability
- Basic definitions and rules of Probabilities
- Discrete probability distributions
  - a- Binominal distribution.
  - b- Poisson distribution.
- Continuous probability distribution
- Normal distribution, and its descriptor
- Standard normal distribution
- Population and samples (introduction to concept)
- Reasons for sampling and characteristics of representative sample.
- Methods of probability
- Sampling (with advantages and disadvantages of each method).
- Nonprobability sampling and related biases.
- Concept of sample size precision and sampling error.
- Estimation of sample size for different scales of measurements.
- Concept of sampling distribution and standard error.
- Sampling error of mean.
- Sampling error of proportion
- Sampling error of variance.
- Standard deviation versus standard error.

### **Applied statistics**

#### **Part A - statistical inference**

- Introduction to inferential statistic
- Estimation Need for estimates
- Confidence intervals and confidence limits
- Types of hypothesis
- Hypothesis testing and steps involved in hypothesis testing
- Errors in hypothesis testing
- Confidence interval versus hypothesis testing

#### **Part B – Tests of hypothesis and confidence interval estimation for sample means**

- T distribution
- Test of hypothesis for mean difference in paired design (parametric) – paired t test reasons and assumptions.
- Estimation of confidence interval (mean difference in paired design).

- Non parametric test – an overview and reason (paired design)
- Test and estimation of confidence interval for the difference between two independent group means. (unpaired t test)
- Non parametric test (for means of two independent groups)
- Determination of sample size for tests involving two means.
- Computer program illustration, published research examples and
- Relevant exercise.
- Intuitive overview to Anova and assumptions.
- One – way Anova
- Two – way Anova
- Test for planned comparisons (A priori test) reasons.
- Concept of post hoc comparisons and relevant tests.

**Part C – Test of hypothesis and estimation of confidence interval for comparing proportions.**

- Introduction and Assamptions
- Z Approximation test two independent proportions.
- Chi- square test : Intuitive overview and its applications.
- Using chi- square test to compare two proportions (Independent)
- Continaing (yetes) correction.
- Chi- square analysis among several groups.
- Mental – Haenszel chi- square.
- Test for small expected frequency (fishers Exact test).
- Goodness of fit test.
- Estimation of sample size for the tests, computer program illustration, published research examples and Exercises.
- Avoidence of over use of chi- square test.

**Part D – Analysing relationships**

- Basic concept of correlation, types of data required and Assumptions.
- Coefficient of correlation its strength and significance.
- Estimation of coefficient of correlation.
- Types of correlations (graphical).
- Confidence interval for correlation.
- Others measures of correlation.
- Published research examples and exercises.
- Basic concept of Regression and Assumptions.
- Estimation of Regression equation and predictions.
- Common errors in Regression.
- Uses of correlation and Regression and comparison.

**-Health Administration (2401) 2h(per week)**

**- Health services:**

Definition. Purpose, health care, public health services, personal health services, hospital operations, characteristics of health care, level of health services, preventive services.

**- Health for all and primary health care:**

Definition, health for all in the 21<sup>st</sup>. century, aspects of PHC, essential principles of PHC, PHC centers, PHC activities.

**- Health services in Libya:**

Policies and procedures.

Health indices.

Health facilities, and levels of care.

Libyan National health programs.

Examples of some programs in detail:

- MCH (mother and child health care)
- School Health.

**- Health planning:**

Definition, purpose, activities, steps, planning cycle, pre- planning conditions.

**- Human resources:**

Human resources management ( importance and role ), staffing activities.

**- Management functions:**

1. Organization:

Definition, concepts of formal organizational structures, division of work, authority and responsibility relationships, departmentation, coordination.

2. Decision making:

Definition, types, administrative, operational.

3. Motivation:

Definition, management implications, integrated frame work formotivation.

4. Leader ship:

Definition, power and influence, approaches.

5. Evaluation:

Definition, purpose, indicators.

6. Reporting:

Definition and contents.

7. Communication:

Definition, types, levels, control in health field, listening and listening techniques, communication barriers.

**- Equipment, supplies and plan for maintenance:**

- Issuing equipment.
- Ledger control.
- Inventory.
- The value of use of equipment records.
- Controlling and maintaining equipment.
- Inspection check list.
- Detecting and interpreting discrepancies.
- Plan for maintenance: Information standardization, advantages of coded control numbers, Implementing plan for maintenance, benefits of plan for maintenance.

**- International health:**

- WHO, Definition, location of.
- Control office and Regional offices.
- Objectives of WHO.
- Functions of WHO.
- Major achievements of WHO.
- Challenges facing WHO.
- Definition of some international programs.