SYLLABUS FOR THE FIRST YEAR DIPLOMA COURSE UNDER

ALLIED HEALTH SCIENCES

1. Diploma in Operation Theatre and Anesthesia Technology
2. Diploma in Critical Care Technology
3. Diploma in Scope Support Technology

Subjects – Teaching hours

Anatomy, Physiology and Lab Sciences	**-**	**80 hours**
Communication skills in English	**-**	**80 hours**
Computer Skills	**-**	**80 hours**
Principles of Management	**-**	**30 hours**
		270 hours
Hospital Orientation & Training		**1665 hours**

BASIC ANATOMY

THEORY

Introduction to Anatomy

Basic Anatomical terminology

Osteology- Upper limb – clavicle, scapula, humerous, radius, ulna
Lower limb - femur, hipbone, sacrum, tibia, fibula
Vertebral column

Thorax – Intercostal space, pleura, bony thoracic cage, ribs sternum & thoracic vertebrae

Lungs – Trachea, bronchial tree

Heart – Surface anatomy of heart, chambers of the heart, valves of the heart, major blood vessels of heart, pericardium, coronary arteries.

Skeleto-muscular system – Muscles of thorax, muscles of upper limb (arm & fore arm) Flexor and extensor group of muscles (origin, insertion, action)

Excretory sytem – Kidneys**,** ureters, bladder

PRACTICALS

Mannequins to be provided for Teaching

Osteology – Bones identification (right and left side) and prominent features and muscle attachment of the bone, clavicle, scapula, radius, ulna, humerous, femur, hip bone, sacrum, tibia, fibula.

Surface Anatomy,

Radiology, X-ray Chest PA view

PHYSIOLOGY
THEORY

1) The Cell:
(i) Cell Structure and functions of the varies organelles.
(ii) Endocytosis and exocytosis
(iii) Acid base balance and disturbances of acid base balances (Alkalosis, Acidosis)
2) The Blood:
(i) Composition of Blood, functions of the blood and plasma proteins, classification and protein.
(ii) Pathological and Physiological variation of the RBC.
(iii) Function of Hemoglobin
(iv) Erythrocyte Sedimentation Rate.
(v) Detailed description about WBC-Total count (TC), Diffierential count (DC) and functions.
(vi) Platelets – formation and normal level and functions
(vii) Blood groups and Rh factor
3) Cardio-Vascular System:
(i) Physiology of the heart
(ii) Heart sounds
(iii) Cardiac cycle, Cardiac output.
(iv) Auscultatory areas.
(v) Arterial pressures, blood pressure
(vi) Hypertension
(vii) Electro cardiogram (ECG)
4. Respiratory system:
(i) Respiratory movements.
(ii) Definitions and Normal values of Lung volumes and Lung capacities.
5. **Excretory system:**
(i) Normal Urinary output
(ii) Micturation
(iii) Renal function tests, renal disorders.
6. Reproductive system:
(i) Formation of semen and spermatogenesis.
(ii) Brief account of menstrual cycle.
7. Central Nervous system:
(i) Functions of CSF.
8. **Endocrine sytem:**
Functions of the pituitary, thyroid, parathyroid, adrenal and pancreatic Hormones.

9. **Digestive system (for the students of Diploma in Scope Support Technology)**
(i) Physiological Anatomy of the GIT.
(ii) Food Digestion in the mouth, stomach, intestine
(iii) Absorption of foods
(iv) Role of bile in the digestion.

PRACTICAL
1) The compound Microscope
2) Determination of ESR-By westergren's method
3) Determination of Blood Groups.
4) Measurement of human blood pressure.
5) Examination of Respiratory system to count respiratory rate and measure inspiration and respiration

BIO-CHEMISTRY
Carbohydrates
Glucose and Glycogen Metabolism
Proteins:
Classification of proteins and functions
Lipids:
Classification of lipids and functions
Enzymes:
Definition – Nomenclature – Classification – Factors affecting enzyme activity – Active site – Coenzyme – Enzyme Inhibition – Units of enzyme – Isoeznzymes – Enzyme pattern in diseases.
Vitamins & Minerals:
Fat soluble vitamins(A,D,E,K) – Water soluble vitamins – B-complex vitamins- principal elements(Calcium, Phosphorus, Magnesium, Sodium, Potassium, Chlorine and sulphur)- Trace elements – Calorific value of foods – Basal metabolic rate(BMR) – respiratory quotient(RQ) Specific dynamic action(SDA) – Balanced diet – Marasmus – Kwasoirkar
Acids and bases:
Definition, pH, Henderson – Hasselbalch equation, Buffers, Indicators, Normality, Molarity, Molality

BIOCHEMISTRY SYLLABUS FOR PRACTICALS
1 Benedict's test
2. Heat coagulation tests

PATHOLOGY

1. Cellular adaptation, Cell injury & cell death.

Introduction to pathology.
Overview: Cellular response to stress and noxious stimuli.
Cellular adaptations of growth and differentiation.
Overview of cell injury and cell death.
Causes of cell injury.
Mechanisms of cell injury.
Reversible and irreversible cell injury.
Examples of cell injury and necrosis

2. Inflammation.

General features of inflammation
Historical highlights
Acute inflammation
Chemical mediators of inflammation
Outcomes of acute inflammation
Morphologic patterns of acute inflammation
Summary of acute inflammation
Chronic inflammation

3. Immunity disorders.

General features of the immune system
Disorders of the immune system

4. Infectious diseases.

General principles of microbial pathogenesis
Viral infections
Bacterial infections-Rheumatic heart disease.
Fungal infections
Parasitic infections

5. Neoplasia.

Definitions
Nomenclature
Biology of tumor growth benign and malignant neoplasms
Epidemiology
Carcinogenic agents and their cellular interactions
Clinical features of tumors

6. Environmental and nutritional disorders.

Environmental and disease
Common environmental and occupational exposures
Nutrition and disease.
Coronary artery disease.

PRINCIPLES OF MANAGEMENT

(a): PRINCIPLES OF MANAGEMENT

Development of Management: Definitions of Management – Contributions of F.W. Taylor, Henry Fayol and others

Functions of Management: Planning – Organizing – Directing – Controlling Planning: Types of planning – Short–term and long plans – Corporate or Strategic

Planning – Planning premises – Polices – Characteristics and sources – principles of policy making – Strategies as different from policies – Procedures and methods – Limitations of planning

Organizing: Importance of organization – Hierarchy – Scalar chain – Organization relationship – Line relationship – Staff relationship - Line staff relationship – Functional relationship - Committee organization – Management committees – Departmentation

Motivation: Motivation theories – McGregor's theory X and theory Y – Maslow's and Herzberg's theory – Porter and Lawler model of complex view of motivation – Other theories – Diagnostic signs of motivational problems – Motivational Techniques

Communication: Types of communication – Barriers of effective communication – Techniques for improved communication

Directing: Principles relating to Direction process – Principles and theories of leadership – Leadership Styles – Delegation of authority

Controlling: Span of control – Factors limiting effective span of control – Supper management, General managers, Middles managers and supervisors – Planning and controlling relationships – Management control process – Corrective measures – Strategic control points – Budgetary control – Types of budgets

Co-ordination: Co-ordination and co-operation – Principles of co-ordination – Techniques of co-ordination charts and records – Standard procedure instructions

(b): PERSONNEL MANAGEMENT

Objective of Personnel Management – Role of Personnel Manager in an organization – Staffing and work distribution techniques – Job analysis and description – Recruitment and selection processes – Orientation and training – Coaching and counseling – disciplining – Complaints and grievances – Termination of employees – Performance appraisal – Health and safety of employees - Consumer Protection Act as applicable to health care services

(c): FINANCIAL MANAGEMENT

Definition of financial Management – Profit maximization – Return maximization – wealth maximization – Short term Financing – Intermediate Financing – Long term Financing – leasing as a source of Finance – cash and Security Management – Inventory Management – Dividend policies – Valuations of Shares – Financial Management in a hospital – Third party payments on behalf of patients.

Insurance – health schemes and policies

ENGLISH

Communication:-

Role of communication
Defining Communication
Classification of communication
Purpose of communication
Major difficulties in communication
Barriers to communication
Characteristics of successful communication – The seven Cs
Communication at the work place
Human needs and communication "Mind mapping"
Information communication

Comprehension passage:-

Reading purposefully
Understanding what is read
Drawing conclusion
Finding and analysis

Explaining:-

How to explain clearly
Defining and giving reasons
Explaining differences
Explaining procedures
Giving directions

Writing business letters:-

How to construct correctly
Formal language
Address
Salutation
Body
Conclusion

Report writing:-
Reporting an accident
Reporting what happened at a session
Reporting what happened at a meeting

BASICS OF COMPUTER

COURSE CONTENT:

Introduction to computer – I/O devices – memories – RAM and ROM – Different kinds of ROM – kilobytes. MB, GB their conversions – large computer – Medium, Micro, Mini computers – Different computer languages – Number system – Binary and decimal conversions – Different operating system – MS DOS – Basic commands – MD, CD, DIR,TYPE and COPY CON commands – Networking – LAN, WAN,MAN(only basic ideas)

Typing text in MS word – Manipulating text – Formatting the text – using different font sizes, bold, italics – Bullets and numbering – Pictures, file insertion – Aligning the text and justify – choosing paper size – adjusting margins – Header and footer, inserting page No's in a document – Printing a file with options – Using spell check and grammar – Find and replace – Mail merge – inserting tables in a document.

Creating table in MS-Excel – Cell editing – Using formulas and functions – Manipulating data with excel – Using sort function to sort numbers and alphabets – Drawing graphs and charts using data in excel – Auto formatting – Inserting data from other worksheets.

Preparing new slides using MS-POWERPOINT – Inserting slides – slide transition and animation – Using templates – Different text and font sizes – slides with sounds – Inserting clip arts, pictures, tables and graphs – Presentation using wizards.

Introduction to Internet – Using search engine – Google search – Exploring the next using Internet Explorer and Navigator – Uploading and Download of files and images – E-mail ID creation – Sending messages – Attaching files in E-mail – Introduction to "C" language – Different variables, declaration, usage – writing small programs using functions and sub – functions.

PRACTICAL

Typing a text and aligning the text with different formats using MS-Word
Inserting a table with proper alignment and using MS-Word
Create mail merge document using MS-word to prepare greetings for 10 friends
Preparing a slide show with transition, animation and sound effect using MS-Powerpoint
Customizing the slide show and inserting pictures and tables in the slides using MS-powerpoint
Creating a worksheet using MS-Excel with data and sue of functions
Using MS-Excel prepare a worksheet with text, date time and data

Preparing a chart and pie diagrams using MS-Excel

Using Internet for searching, uploading files, downloading files creating e-mail ID

Using C language writing programs using functions

DIPLOMA - ALLIED HEALTH SCIENCES

EXAMINATION PATTERN – I YEAR

1. Diploma Course in Operation Theatre and Anesthesia Technology
2. Diploma Course in Critical Care Technology
3. Diploma Course in Scope Support Technology

Sl. No.	Subject Title	I A		University Exam		Practical		Viva Voce	
		Max	Min	Max	Min	Max	Min		
1.	Paper I -Anatomy, Physiology & Biochemistry	50	25	100	50	100	50	50	25
2.	Paper II- English	50	25	100	50	-	-	-	-
3.	Paper III - Computer	50	25	100	50	-	-	-	-

Internal Assessment :

Paper I & III Theory	- 20 Marks
Practical	– 30 Marks
Paper – II Theory	- 20 Marks
Communication Skills	– 20 Marks
Seminar/Presentation	– 10 Marks

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