

Program Syllabus Booklet


Diploma in Health Assistant (Code-811)



Session: 2021-22

GURU KASHI UNIVERSITY										
University College of Paramedical Sciences (Code:8)										
Diploma in Health Assistant (Code: 811)										
Study Scheme										
Semester: 1st										
Sr.	Subject Code	Subject Name	Type of Subject T/P	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks
				L	T	P				
1	811101	General Introductory Biology	T	3	1	0	4	50	50	100
2	811102	Fundamental Chemistry	T	3	1	0	4	50	50	100
3	811103	General Microbiology	T	3	1	0	4	50	50	100
4	811104	Basic Elementary Physics	T	3	1	0	4	50	50	100
5	811105	General Introductory Biology (Practical)	P	0	0	4	2	50	50	100
6	811106	Fundamental Chemistry(Practical)	P	0	0	4	2	50	50	100
7	811107	General Microbiology(Practical)	P	0	0	4	2	50	50	100
8	811108	Basic Elementary Physics(Practical)	P	0	0	4	2	50	50	100
Total No. of Credits				24						
Study Scheme										
Semester: 2nd										
Sr.	Subject Code	Subject Name	Type of Subject T/P	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks
				L	T	P				
1	811201	English and Communication Skills	T	3	1	0	4	50	50	100
2	811202	Anatomy and physiology -I	T	3	1	0	4	50	50	100
3	811203	Basic Computers and Information Science	T	3	1	0	4	50	50	100
4	811204	Basic Nursing Practice	T	3	1	0	4	50	50	100
5	811205	Mathematics and Statistics	T	3	1	0	4	50	50	100
6	811206	Basic Computers and Information Science(Practical)	P	0	0	4	2	50	50	100
7	811207	Anatomy and physiology -I (Practical)	P	0	0	4	2	50	50	100
Total No. of Credits				24						
Study Scheme										
Semester: 3rd										
Sr.	Subject Code	Subject Name	Type of Subject T/P	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks
				L	T	P				
1	811301	Anatomy & Physiology-II	T	3	1	0	4	50	50	100
2	811302	Pharmacology and Pharmacy-I	T	3	1	0	4	50	50	100
3	811303	Introduction to Quality and Patient Safety	T	3	1	0	4	50	50	100
4	811304	Principles of Management	T	3	1	0	4	50	50	100
5	811305	Environmental science	T	4	0	0	4	50	50	100
6	811306	Anatomy & Physiology- II (Practical)	P	0	0	4	2	50	50	100
7	811307	Introduction to Quality and Patient Safety (Practical)	P	0	0	4	2	50	50	100
Total No. of Credits				24						

Study Scheme											
Semester: 4th											
Sr.	Subject Code	Subject Name	Type of Subject T/P	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks	
				L	T	P					
1	811401	Community Health -I	T	3	1	0	4	50	50	100	
2	811402	General Medicine -I	T	3	0	0	3	50	50	100	
3	811403	General Surgery-I	T	3	1	0	4	50	50	100	
4	811404	Pharmacology and Pharmacy-II	T	3	1	0	4	50	50	100	
5	811405	Medical ethics and legal Aspects	T	3	1	0	4	50	50	100	
6	811406	General Medicine-I (Practical)	P	0	0	4	2	50	50	100	
7	811407	General Surgery-I (Practical)	P	0	0	4	2	50	50	100	
Total No. of Credits							23				
Study Scheme											
Semester: 5th											
Sr.	Subject Code	Subject Name	Type of Subject T/P	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks	
				L	T	P					
1	811501	General Surgery -II	T	3	1	0	4	50	50	100	
2	811502	General Medicine -II	T	3	1	0	4	50	50	100	
3	811503	Clinical Pathology	T	3	1	0	4	50	50	100	
4	811504	Community Health-II	T	4	0	0	4	50	50	100	
5	811505	Nutrition	T	4	0	0	4	50	50	100	
6	811506	General surgery-II (Practical)	P	0	0	4	2	50	50	100	
7	811507	General medicine-II (Practical)	P	0	0	4	2	50	50	100	
Total No. of Credits							24				
Study Scheme											
Semester: 6th											
Sr.	Subject Code	Subject Name	Type of Subject	(Hours Per Week)			No. of Credits	Internal Marks	External Marks	Total Marks	
				L	T	P					
1	811601	Professional Training/Internship (6 Months)	NA	NA	NA	NA	20	500	500	1000	
Total No. of Credits							20				

		University College of Paramedical Sciences DHA	
Course Title: GENERAL INTRODUCTORY BIOLOGY			
Semester: I	Course code: 811101	Credits:04	Core
No of sessions Lectures / Tutorial: 3/1		No of practical hours:	

MODFULE 1-

Biology & Its Branches; Scientific methods in Biology; Scope of biology and career options in Medical Laboratory Sciences

MODULE 2-

Structure and function of tissues - epithelial, connective, muscular and nervous

MODULE 3-

1. Cell as a basic unit of life - discovery of cell, cell theory, cell as a self - contained unit; prokaryotic and eukaryotic cell; unicellular and multicellular organisms; Ultrastructure of prokaryotic and eukaryotic cell - cell wall, cell membrane - unit membrane concept (Fluid-Mosaic model); membrane transport; cellular movement (exocytosis, endocytosis); cell organelles and their functions- nucleus, mitochondria, plastids, endoplasmic reticulum, Gogli complex, lysosomes, microtubules, centriole, vacuole, cytoskeleton, cilia and flagella, ribosomes

2. Molecules of cell; inorganic and organic materials - water, salt, mineral ions, carbohydrates, lipids, amino acids, proteins, nucleotides, nucleic acids (DNA and RNA), Cell division: Binary fission, Cell cycle: Mitosis, Meiosis

MODULE 4-


1. Continuity of life - heredity, variation; mendel's laws of inheritance, chromosomal basis of inheritance; other patterns of inheritance - incomplete dominance, multiple allelism, quantitative inheritance.

2. Chromosomes - bacterial cell and eukaryotic cell; parallelism between genes and chromosomes; genome, linkage and crossing over; gene mapping; recombination; DNA as a genetic material - its structure and replication; structure of RNA and its role in protein synthesis

Suggested Readings:

1. Reece, J.B., Urry, L.A., Cain, M.L., Wasserman, S.A., Minorsky, P.V. & Jackson, R.B. (2011). Campbell Biology (9th Edition). Pearson Benjamin Cummings Publishers, San Francisco, USA.

2. Fried, G.H. & Hademenos, G.J. (2002). Schaum's Biology. Tata McGraw Hill Publications, New Delhi.

		University College of Paramedical Sciences DHA	
Course Title: FUNDAMENTAL CHEMISTRY			
Semester: I	Course code: 811102	Credits:04	Core
No of sessions Lectures / Tutorial: 3/1		No of practical hours:	

MODULE1-

Solid State (Periods 12) Classification of solids based on different binding forces :molecular, ionic covalent and metallic solids, amorphous and crystalline solids(elementary idea),unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids ,number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties, Band theory of metals ,conductors, semiconductors and insulators and n and p type semiconductors .

MODULE 2-

Solutions (Periods 12) Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties – relative lowering of vapour pressure, Raoult's law , elevation & depression of B.P., depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Vant Hoff factor.

MODULE 3-

Electrochemistry (Periods 14) Redox reactions; conductance in electrolytic solutions, specific and molar conductivity variations of conductivity with concentration, Kohlrausch's Law, electrolysis and laws of electrolysis (elementary idea), dry cell – electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells. Relation between Gibbs energy change and EMF of a cell, fuel cells; corrosion.

MODULE 4-

Chemical Kinetics (Periods 12) Rate of a reaction (average and instantaneous), factors affecting rates of reaction: concentration, temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant, integrated rate equations and half life (only


for zero and first order reactions); concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenius equation.

MODULE 5-

Surface Chemistry (Periods 8) Adsorption – physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis :homogenous and heterogeneous and suspensions; lyophilic, lyophobic multimolecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsions – types of emulsions.

MODULE 6-

General Principles and Processes of Isolation of Elements (Periods 8) Principles and methods of extraction – concentration, oxidation, reduction electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

		University College of Paramedical Sciences DHA	
Course Title: GENERAL MICROBIOLOGY			
Semester: I	Course code: 811103	Credits:04	Core
No of sessions Lectures / Tutorial: 3/1		No of practical hours:	

MODULE 1- Introduction to Microbiology

Definition, Brief history, importance of microbiology

MODULE 2- Structure of bacteria

Types of bacteria, Classification of bacteria on the basis of shapes, Anatomical structure of a bacterial cell including spores, flagella and capsules, Bacterial growth and nutrition of bacteria.

MODULE 3- Microscopy –

1. Principle and care, working of Simple microscope and compound microscope
2. Sterilization - definition
 - By dry heat,
 - Moist heat,
 - Autoclave & hot air oven- their structure, functioning, controls and sterilization indicators.
 - By radiation and filtration

MODULE 4- Antiseptics and disinfectants.

Definitions, types, properties, use of disinfectants and antiseptics

MODULE 5- Bacterial culture and culture techniques


Inoculations of culture media, aerobic and anaerobic culture, isolation of pure and mixed cultures.

MODULE 6- Staining techniques

Methods of smear preparation, Gram stain, Ziehl-Neelson's (Z-N) stain, Albert's stain.

RECOMMENDED BOOKS

1. Textbook of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
2. Practical Book of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
3. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworth – Heinemann; Oxford
4. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
5. Medical Laboratory Technology by Kanai Lal Mukherjee; Tata McGraw Hill, New Delhi
6. Medical Laboratory Manual for Tropical Countries Vol. I and II by Monica
7. Cheesbrough; Cambridge University Press; UK
8. Text Book of Microbiology by Ananthanarayan and Paniker; Orient Longman, Hyderabad
9. Text book of Medical Microbiology by Cruickshank Vol. I and II

7		University College of Paramedical Sciences DHA
Course Title: BASIC ELIMENTRY PHYSICS		
Semester: I	Course code: 811104	Credits:04
No of sessions Lectures / Tutorial: 3/1		No of practical hours:

MODULE 1- SI UNITS

1. Need for measurement: units of measurement, system of units SI units.
2. Fundamental and derived units, length and time measurements.

MODULE 2- MAGNETIC EFFECTS OF CURRENT AND MAGNETISM

1. Concept of magnetic field, Oersted's experiment, Biot- Savart law and its application to current carrying circular loop.
2. Ampere's law and its applications to infinitely long, straight wire, straight and toroidal solenoids.

MODULE 3- ATOMS & NUCLEI


1. Alpha-particle scattering experiment, Rutherford's model of atom, Bohr model, Energy levels. hydrogen spectrum.
2. Composition and size of nucleus, atomic masses, isotopes, isobars, isotones Radioactivity-alpha, beta and gamma particles/rays and their properties, radioactive decay law.
3. Applications of radio activity

MODULE 4- OPTICS


1. Reflection of light: spherical mirrors & its types.
2. Refraction of Light: lenses & its types.
3. Image formations, magnification & power of a lens, Refraction and dispersion of light through a prism.
4. Scattering of light-blue colour of the sky and reddish appearance of the sun at sunrise and sunset.
5. Microscope & their Magnifying Powers
6. Photo chromatography

RECOMMENDED BOOKS


1. Elementary Physics by FranklinHerman Ayres
2. Exercise in Elementary Physics by Charle R.
3. Particle Physics in Laboratory by Alexander & Studiniken

		University College of Paramedical Sciences DHA	
Course Title: GENERAL INTRODUCTORY BIOLOGY (Practical)			
Semester: I	Course code: 811105	Credits:02	Core
No of sessions Lectures / Tutorial:		No of practical hours: 4	


1. Study of Mitosis and Meiosis through animal cells (Grasshopper).
2. Study of osmosis and diffusion.
3. Study of Epithelial, Muscle, Nerve and mammalian blood cells through permanent or temporary cells.

		University College of Paramedical Sciences DHA	
Course Title: FUNDAMENTAL CHEMISTRY (PRACTICAL)			
Semester: I	Course code: 811106	Credits:02	Core
No of sessions Lectures / Tutorial:		No of practical hours:4	

1. Cleaning of the laboratory glass ware.
2. Preparation of distilled water
3. Principle, working and maintenance of pH meter.
4. To prepare 0.1 N NaoH solution.
5. To prepare 0.2N HCl solution.
6. To prepare 0.1 molar H₂SO₄
7. To prepare 0.2 Molar Sodium carbonate solution.

		University College of Paramedical Sciences DHA	
Course Title: GENERAL MICROBIOLOGY (PRACTICAL)			
Semester: I	Course code: 811107	Credits:02	Core
No of sessions Lectures / Tutorial:		No of practical hours: 4	

1. Demonstration of safety rules (universal precautions) in a microbiology laboratory
2. Preparation of cleaning agents and techniques of cleaning of glass and plastic ware.
3. Sterilization by autoclave and hot air oven
4. Handling and use of compound microscope
5. Staining techniques: Gram, Albert's, Ziehl – Neelson's
6. Demonstration of motility (Hanging drop method)
7. Preparation and sterilization of various culture media (Nutrient agar, Nutrient broth, Blood agar, Chocolate agar, Mac-Conkey agar, Lowenstein-Jensen Media
8. Aerobic and anaerobic culture methods
9. Antimicrobial susceptibility testing by Stokes disc diffusion method

		University College of Paramedical Sciences DHA	
Course Title: BASIC ELIMENTARY PHYSICS (Practical)			
Semester: I	Course code: 811108	Credits:02	Core
No of sessions Lectures / Tutorial:		No of practical hours: 4	
Course Pre-requisites:		Number of sessions:	

DEMONSTRATION OF-

1-BASIC PHYSICS

2-SOUND

3-HEAT

4-FUNDAMENTALS OF DC CIRCUITS

5-AC CIRCUITS

6-MAGNETIC CIRCUITS

7-RECTIFICATION