

Meenakshi Academy of Higher Education & Research



BACHELOR OF ALLIED HEALTH SCIENCES B.Sc AHS (PHYSICIAN ASSISTANT) REGULATIONS AND SYLLABUS

(Regulations-2014)

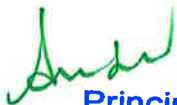
Effective from the Academic Year 2014-2015

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Chennai - 600 078.

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**MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH
FACULTY OF ALLIED HEALTH SCIENCES
BACHELOR OF ALLIED HEALTH SCIENCES
(B.Sc Physician Assistant)**

REGULATIONS-2014

VISION AND MISSION OF MAHER

Vision

To be a world-class institution, transforming society through value-based diverse programs and healthcare advancements, leading to the all-around development of human resources, knowledge, innovation, entrepreneurship, and research.

Mission

To become an institute of eminence by developing world-class professionals in the field of healthcare, science, liberal arts, technology and research with a focus on the societal good.

To create an enabling state-of-the-art infrastructure, intellectual capital and provide best-in-class learning experience with a freedom to innovate and invent.

To foster values and ethics so as to develop students and learners into responsible citizens of the Nation and the world.



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BACHELOR OF ALLIED HEALTH SCIENCES
(B.Sc AHS) PHYSICIAN ASSISTANT
REGULATION-2014
VISION AND MISSION OF FACULTY OF ALLIED HEALTH SCIENCES

VISION

To meet challenges of the present and the future by being adaptive, innovative grooming young generation into highly skilled faithful and dedicated professional experts who are fully committed to serve by contributing to the global health

Mission

- ✓ To prepare the young professionals who are committed in health care to excellence and innovation in health care.
- ✓ To develop and transmit knowledge of diverse aspects of health, health-care delivery and health research.
- ✓ To prepare the young emerging professionals who understand health from biological, behavioral, and population perspectives.
- ✓ To prepare the young emerging professionals who are committed in health care to excellence and innovation in health care.


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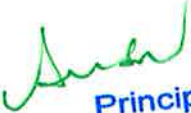
FACULTY OF ALLIED HEALTH SCIENCES

(B.Sc AHS) PHYSICIAN ASSISTANT

PROGRAMME OBJECTIVES

Programme Objectives:

- To impart necessary knowledge and training techniques in under graduate Allied Health Sciences programmes and to maintain high standards of Allied Health Sciences education.
- To offer theoretical and practical training in all the important Allied Health Sciences branches of health activity.
- To attain self-sufficiency in under graduate Allied Health Sciences education to meet the States need of Allied Health Sciences personnel.
- Providing knowledge and skill based training to create qualified and competent technical personnel in the discipline of Allied Health Sciences.
- To develop the basic skills in the students that are necessary to monitor patients within a healthcare setting.
- To create manpower who will bridge gap between staff, Nurses and consultants. To train students in all clinical skills using clinical in all clinical demonstration and simulation base training.


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MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH
FACULTY OF ALLIED HEALTH SCIENCES
PHYSICIAN ASSISTANT TECHNOLOGY
PROGRAMME OUTCOME

PO1: Academic Education

Gain proficiency in fundamentals of physician assistant technology improve our understanding of factors imparting allied health sciences

PO2 : Knowledge

Acquire comprehensive basic knowledge of coordinated functions, anatomy of heart and pathophysiology of diseases and apply them in Cases

PO3: Design and Development of Solutions

Improve knowledge to design solutions for complex problems in the associated fields and design digital imaging technology products or processes that meet the specified needs with appropriate consideration for specific diseases with specific considerations of patient .

PO4: Investigation

Analyse complex problems and investigate to develop solutions by using physician assistant technology based knowledge and research methods including digital imaging technology, analysis and interpretation of data, and use of diagnostic tools in effective development of clinical solutions

PO5: Communication

Improve appropriate language and interpersonal skills in communication of clinical outcomes and outputs, develop visual and graphical methods to communicate results effectively

PO6: Role in Society

Obtain knowledge in reasoning techniques to assess societal, health, safety, legal and cultural issues associated with use of physician assistant technology of allied health sciences and the consequent responsibilities of professionals involved in the use of the same.

PO7: Ethics

Acquire knowledge on ethical principles associated with research methods, use of human models, patient information, research and literature data collection and use and commit to ensuring sustainability of resources

PO8: Technology Usage

Understand appropriate diagnostic technology, techniques, modern scientific diagnostic tools to analytically understand, predict and analyze the outcome of use of allied health sciences and develop therapeutic products that improve clinical practices


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PO9: Environment and Sustainability

Obtain attitude toward products that are safe to the environment, is economically, environmentally and socially sustainable with a commitment to safeguard the future of life in the planet

PO10: Team Work

Implement the function effectively individually and in a team under multi-skilled, multi-cultural and multi-disciplinary settings

PO11: Project Management

Gain knowledge and understanding the principles and management techniques of physician assistant technology and apply these to ones own and teams work and also manage team based projects in real life environments, and leading to technological skills

PO12: Lifelong Learning

Engage in life long practical learning in the context of technological developments in allied health science and the changes that it brings about in the quality of human life

Programme Specific Outcome

PSO1- Function as a professional member of health care teams as shown by passing all their clinical programmes satisfactorily

PSO2-Will have the Medical knowledge and interpersonal communication skills to assist in patient care in a professional way equipping themselves with their practice based learning mythology.

PSO3-Will have the basic skills necessary to monitor patients for any type of cardiac problems within a health care setting .



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MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH

BACHELOR OF ALLIED HEALTH SCIENCES

REGULATIONS-2014

1.REGULATIONS OF THE UNIVERSITY

In exercise of the powers conferred by the Board of management, Meenakshi Academy of Higher Education And Research, Chennai hereby make the following Regulations:

2.SHORT TITLE

These Regulations shall be called 'THE REGULATIONS FOR THE BACHELOR OF SCIENCE IN ALLIED HEALTH SCIENCE DEGREE PROGRAMME OF MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH'.

3.COMMENCEMENT

They shall come into force from the academic year 2014-15 onwards. The regulations and the syllabus are subject to modification by the standing academic board from time to time.

4.TITLE OF THE PROGRAMME

It shall be called Bachelor of Science in Allied Health Science

5.ELIGIBILITY FOR ADMISSION

Candidates should have passed the higher secondary school certificate examination (12 years of study) Or Senior school certificate of Indian school certificate examination (12 years of study)

Or Intermediate examination of an Indian university/Board or other recognised examining body with physics, chemistry, Biology and English.

6.CRITERIA FOR SELECTION

Students for B.Sc. Degree Programme (Allied Health Science) shall be admitted based on performance at the competitive Examinations held by this University.

7.AGE LIMIT FOR ADMISSION

Candidate should have completed the age of 17 years at the time of admission or would complete the age of 17 years on or before 31st December of the year of admission to the first year B.Sc. Degree programme.

8.ELIGIBILITY CERTIFICATE



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No candidate shall be admitted to the B.Sc. Degree programme (AHS) unless the candidate has obtained and produced eligibility certificate issued by this university. The candidate has to make an application the university with the original and photo copies of the following documents along with the prescribed fee:

Higher secondary or equivalent examination mark sheet and
Transfer certificate

Candidate should obtain eligibility certificate before the last date for admission as notified by the university

9. REGISTRATION

A candidate admitted to the B.Sc. Degree programme (AHS) of this university shall register by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to this university through the head of the institution within the stipulated time.

10. DURATION OF THE PROGRAMME

The period of certified study for the Programme of Bachelor of Science (Medical) programme shall extend over a period of 3 academic years.

11. COMMENCEMENT OF THE PROGRAMME

ACADEMIC TERMS


First year B.Sc	-	1 st August to 31 st July
Second Year B.Sc	-	1 st September to 31 st August
Third Year B.Sc	-	1 st September to 31 st August

12. CUT OFF DATES FOR ADMISSION TO EXAMINATIONS

The candidates admitted from 1st August to 30th September of the academic year be registered to take up their first year examination on 1st August of the next year. There will not be any admission after 30th September for the academic year.

13. WORKING DAYS IN AN ACADEMIC YEAR

The first academic year shall consist of not less than 240 working days


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14.ATTENDANCE REQUIRED FOR ADMISSION TO EXAMINATION

- a) No candidate shall be permitted to any one of the parts of B.Sc exam unless he/she has attended the programme in the subject for the prescribed and produces the necessary certificates of study and attendance from the institution.
- b) A candidate is required to put in minimum of 80% of attendance in both and practical / clinical separately in each subject before admission examination.
- c) A candidate, who has not completed the programme in any subject and not submitted the programme completion certificate from the head of the department will not be permitted to appear for the particular subject alone. Candidate has got adequate attendance in other subjects he/she permitted to appear for examination in those subjects.
- d) Attendance earned by the student should be displayed on the notice board of the department monthly and a copy of the same sent to the university computerization and parents shall be informed regarding the short attendance of their wards through e-mail (if available) or by post by the institution.

15.SUBMISSION OF LABORATORY RECORD NOTE BOOK

At the time of practical/clinical examination each candidate shall submit to the examiners his/her laboratory note book duly certified by the head of the department as a bonafide record of the work done by the candidate.

The practical record shall be evaluated by the concerned Head of the department (Internal Evaluation) and the practical record marks shall be submitted to the university 15 days prior to the commencement of the theory examinations


In respect of failed candidates the marks awarded for records at previous examination will be carried over to the next examinations. If a candidate desires he/she may be permitted to improve his/her performance by submission of fresh records.

16.CONDONATION OF LACK OF ATTENDANCE

Condonation of shortage of attendance up to a maximum of 10% in the prescribed eligible attendance for admission to an examination rests with the discretionary power of the Vice-chancellor. A candidate lacking in attendance shall submit an application in the prescribed form and remit the stipulated fee 15 days prior to the commencement of the theory examination.

The head of the department and head of the institution should satisfy themselves on the reasonableness of the candidate request while forwarding the application with their endorsements to the controller of examination who would obtain the Vice-chancellor's approval for admission to the examinations. No application would be reviewed if it is not forwarded through proper channel.

Condonation for lack of attendance shall be taken up for consideration under the following circumstances:



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Any illness afflicting the candidate. (The candidate should submit to the head of the institution a medical certificate from registered medical practitioner soon after he/she returns – the institution after treatment.)

Any unforeseen tragedy in the family. (The parent/guardian should give in writing the reason for the ward's absence to the Head of the Institution)

Any other leave the Head of the Institution deems reasonable for condonation 50% of marks in internal assessment is compulsory for condonation of lack of attendance.

17.COMMENCEMENT OF EXAMINATIONS

August 1st/February 1st. If the date of commencement falls on Saturdays, Sunday declared public holidays, the examination shall begin on the next working day.

18.REVALUATION OF ANSWER SCRIPTS

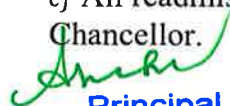
There shall be no revaluation of answers papers of failed candidates in any undergraduate examination. However, Re-totaling of failed subjects will be entertained on payment of the prescribed fee.

19.INTERNAL ASSESSMENT

- a) A minimum of four written examinations shall be conducted in each subject during an academic year and the average marks of three best performances shall be taken into consideration for the award of internal assessment of mark
- b) A minimum of three practical examinations shall be conducted in each subject during an academic year and an average of two best performances shall be taken into consideration for award of internal assessment marks.
- c) A failed candidate in any subject should be provided an opportunity to improve his / her internal Assessment marks by conducting a minimum of two examinations, in theory and practical separately and the average may be considered improvement. If failed candidate do not appear for an improvement in failed subject (s) the internal marks awarded for the previous examination shall be carried over the subsequent appearance (s).
- d) The internal assessment marks (both in written and practical's taken together should be submitted to the University endorsed by the head of the Institution 15 days prior to the commencement of the theory examinations.

20.RE-ADMISSION AFTER BREAK OF STUDY

- a) The calculation of the break of study of the candidate for readmission shall be calculated from the date of first discontinuance of the course instead of from the date of admission.
- b) Candidates having break of study shall be considered for readmission provided, they are not subjected to any disciplinary action and no charges pending or contemplated against them.
- c) All readmission of candidates are subjected to the approval of the Vice-Chancellor.



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- d) A candidate having a break of study more than 2 years and up to 5 years shall apply for the readmission condonation to the Academic officer of this University. The candidate may be readmitted to the beginning of the academic year of the programme. The candidate has to fulfil the attendance requirements of the University and shall be granted exemption in the subjects he has already passed.
- e) Candidates having a break of study of 5 years and above from the date of discontinuance and more than two spells break will not be considered for readmission.

21.MIGRATION / TRANSFER OF CANDIDATES

- a) Migration / Transfer of candidates from one recognized college to another recognized college of this university or from another University shall be granted as per the recommendation of the University regulations.
- I) Migration may be considered in exceptional cases or Extreme compassionate ground.
 - II) Death of a supporting guardian, illness of the candidate disability, disturbed condition as declared by govt. In the college area.
- b) The combination of attendance shall be granted to a transfer for admission to the examinations of this university or payment of the necessary fee and satisfying the Nursing council of India regulations.
- c) The applicant candidate should have passed first year Examination.
- d) Migration during clinical programme of study shall not be allowed on any ground.
- e) All migrations/transfers are allowed on payment of the prescribed fee.
- f) All migrations/ transfers are subject to the approval of the Vice-chancellor.

22.MARKS QUALIFYING FOR A PASS

A candidate shall be declared to have passed the examination if he/she obtain 50% of all the marks in University Theory examination, 50% of the marks in University Practical examination a 50% aggregate in University Theory, Practical, Oral and Internal Assessment taken together.

23.CLASSIFICATION OF SUCCESSFUL CANDIDATES

- a) A successful candidate who secures 75% and above of the marks in his/her first appearance in all the subjects within the prescribed period will be declared to have passed in first class with Distinction.
- b) A successful candidate who secures 75% and above of the marks in his/her first appearance in a subject within the prescribed period will be declared to have passed in first class with Distinction in that particular subject.
- c) A successful candidate who secures 60% and above of the marks in his/her first appearance in all the subjects within the prescribed period will be declared to have passed in First class.
- d) All other successful candidates shall be declared to have passed in Second class.

24.CARRY OVER OF FAILED SUBJECTS

- a) A candidate who fails in any subject can carry over the failed subject. However only three attempts are allowed in each subject including the 1st attempt.
- b) A Candidate has to pass in theory and practical examination separately in each of the paper
- c) If a candidate fails either in theory and practical examination has to reappear for both (theory and practical).
- d) The candidate has to successfully complete the programme in 6 years (i.e.) double duration of the programme from the date of joining.

25.BRANCH OF STUDY

B.Sc Allied health sciences (Physician Assistant Technology)



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26.PATTERN OF EXAMINATION AND SUBJECTS OF STUDY

Scheme of examination Ist year

Section A	2 Essays (any 1)	1 x 6 Marks each	6 Marks	25 Marks	
	4 Short Notes (any 3)	3 x 3 Marks each	9 Marks		
	5 Ultra short notes	5 x 2 Marks each	10 Marks		
Section B	2 Essays (any 1)	1 x 6 Marks each	6 Marks	25 Marks	
	4 Short Notes (any 3)	3 x 3 Marks each	9 Marks		
	5 Ultra short notes	5 x 2 Marks each	10 Marks		
	Theory Total			50	Marks
	Practical			50	Marks
	Internal Assessment			30	Marks
	Viva – Voice			20	Marks
			Grand Total	150	Marks

Scheme of examination IInd & IIIrd year

Section A	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x 2 Marks each	10 Marks		
Section B	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x 2 Marks each	10 Marks		
	Theory Total			100	Marks
	Practical			50	Marks
	Internal Assessment			30	Marks
	Viva – Voice			20	Marks
			Grand Total	200	Marks

PATTERN OF EXAMINATION IInd & IIIrd

year

Section A	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x2 Marks each	10 Marks		
Section B	2 Essays (any 1)	1 x 15 Marks each	15 Marks	50 Marks	
	6 Short Notes (any 5)	5 x 5 Marks each	25 Marks		
	5 Ultra short notes	5 x2 Marks each	10 Marks		
	Theory Total			100	Marks
	Practicals			-	Marks
	Internal Assessment			30	Marks
	Viva – Voice			-	Marks
			Grand Total	130	Marks

Minimum for Passing

50% marks in the University written examination

50% marks in the University practical examination


50% marks in the aggregate of written, oral, practical and internal assessment

27. Compulsory Rotatory Internship

All the candidates must undergo compulsory rotatory internship training for one year

28. Award of Degree

The B.Sc. degree shall be granted after successful completion of the programme and the compulsory Rotatory Internship


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**I YEAR B.Sc AHS PHYSICIAN ASSISTANT TECHNOLOGY(PROG.CODE-706)
PROGRAMME STRUCTURE**

Course Code	Course Name	Lecture Hrs/Week	Tutorial Hrs/Year	Practical Hrs/Week	Internal Assessment (Ia)	Internal Examination	External Assessment (EA) University Examination				Grand Total
							Theory	Theory	Viva	Practical	
001	Anatomy	02	150	01	30	-	50	20	50	120	150
002	Physiology	02	150	01	30	-	50	20	50	120	150
003	Biochemistry	02	150	01	30	-	50	20	50	120	150
004	Pathology	02	150	01	30	-	50	20	50	120	150
005	Microbiology	02	150	01	30	-	50	20	50	120	150
006	Pharmacology	02	150	01	30	-	50	20	50	120	150
009	Principles of Management	01	80	-	30	100	-	-	-	-	130
010	Basics of Computer	01	80	-	30	100	-	-	-	-	130
011	English	01	80	-	30	100	-	-	-	-	130



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**PHYSICIAN ASSISTANT
TECHNOLOGY(Programme code- 706)**

IInd year

Subject Code	Subject	Lecture Hrs/Week	Tutorial Hrs/Year	Practical Hrs\Week	Internal Assessment	Internal Examination	University Exam			Total Marks
							Theory	Practical (50)	Viva(20)	
601	Medical Outlines	05	200	03	30	-	100	50	20	200
602	Pediatrics and Geriatrics	05	200	03	30	-	100	50	20	200
603	Surgery, Obstetrics and Gynaecology	05	200	03	30	-	100	50	20	200



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IIIrd year

Subject code	Subject	Lecture Hrs/Week	Tutorial Hrs/Week	Practical Hrs\Week	Internal assessment	Internal Examination	University exam		
							Theory	Practical (50)	Viva(20)
5604	Cardiology and Cardiac surgery and Neurology	05	200	03	30	-	100	50	70
5605	Gastroenterology, Orthopedics, Nephrology/Pulmonology	05	200	03	30	-	100	50	70
5607	ELECTIVES (select one) 1. Clinical Psychology	05	150	-	30	-	100	-	-
5608	2. Community Medicine	05	150	-	30	-	100	-	-



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**PAPER I –
ANATOMY
SYLLABUS**
Paper I – Anatomy

SYLLABUS

COURS ECODE	Course name	L hrs/ wk	T hrs/ wk	P hrs /w k	Total hours	IA	Theory	Viva	Practical	EA	Tot
5001	ANATOMY	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION

The study of anatomy will include identification of all gross anatomical structures. Particular emphasis will be placed on description of bones, joints, muscles, the brain, Cardio-pulmonary and nervous systems, as these are related to the application of physiotherapy in patients.

COURSE OBJECTIVES

- The objective of this course is the student will be able to demonstrate knowledge in human anatomy for the study and practice of physiotherapy.
- To describe the various components of upper, lower extremity ,head and neck and thorax.
- In addition, the student will be able to fulfill with 75% accuracy (as measured written and oral internal evaluation) the following objectives of the course.

COURSE CONTENT:

1. Introduction to Anatomy
2. Basic Anatomical Terminology
3. Osteology -
 - a) Upper Limb - Clavicle, Scapula, Humerus, Radius, Ulna
 - b) Lower Limb – Hip Bone, Femur, Tibia, Fibula
 - c) Vertebral Column – Cervical, Thoracic, Lumbar & Sacral Vertebrae
4. Thorax – Thoracic Cage, Sternum, Ribs, Intercostal Space.
5. Respiratory System – Parts, Trachea, Bronchial Tree, Lungs, Pleura
6. Cardio Vascular System –
 - a) Heart – Surface anatomy, Chambers, Valves, Blood supply of the Heart Pericardium. Major Vessels of heart.
7. Vessels of Upper limb

- a) Subclavian Artery – Parts, Branches
- b) Axillary Artery – Parts, Branches
- c) Brachial Artery, Radial artery, Ulnar artery
 - d) Basilic vein, Cephalic vein, Median Cubital vein
 - e) Cubital Fossa
- 8. Vessels of Lower limb
 - a) Femoral artery,
 - b) Popliteal artery
 - c) Dorsalis Pedis Artery,
 - d) Saphenous veins, femoral vein
- 9. Muscular System
 - Muscles of Thorax.
 - Muscles of upper limb (Arm & Forearm)
 - Muscles of Lower limb (Thigh & Leg)
- 10. Excretory System
 - Kidney, Ureter, Urinary Bladder, Structure of Nephron
- 11. Digestive System
 - Parts, Stomach, Liver, Pancreas, Situation, Functions
- 12. Endocrine System
 - Pituitary gland, Thyroid gland, Adrenal gland situation, functions
- 13. Reproductive System
 - Male Reproductive system – Parts, Situation, Functions
 - Female Reproductive system 0
 - Parts, Situation, Functions
 - Central Nervous System Outline of Brain and Spinal cord

Histology

Basic tissues Brief Epithelium Connective tissue Salivary glands Bone
Cartilage Muscle

Osteology Bones :

Side Identification, Prominent features, Muscle attachment

- I. Organs – Heart, Lungs, Liver, Spleen, Stomach, Kidney.

Histology

Epithelium – Simple squamous epithelium Simple cuboidal epithelium

Simple columnar epithelium Transitional epithelium Bone

Cartilage

Hyaline cartilage Elastic cartilage White fibro cartilage Salivary glands

Serous salivary gland Mucous salivary gland Mixed salivary gland Muscles

Skeletal Muscle Smooth Muscle Cardiac Muscle

Practical record compulsory for Osteology & Histology

Total Hours :	80
Theory :	60
Practical :	20

Prescribed Text Book

Manipal Manual of Anatomy for Allied Health Science Courses

Author : Sampath Madhyastha

Edition : Third



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COURSE OUTCOME

CO1: Gain knowledge about various organs of the human body and their functions

CO2: Acquire knowledge in structural and functional relationship of Multi organ system


CO3: Proficiency on the investigation in the overall functions of each system

CO4: Understand the competency of various skeletal muscles and identify various bones and their processes in detail based on their presence in the body

CO5: Recall and reason out vital profiles that distinguishes altered functions of organ in human health and disease

COPO MAPPING OF ANATOMY

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	2	2	3	-	3	3	2	2	3	2	2	2	3	2
CO3	-	2	2	3	3	3	2	3	3	3	-	3	3	2	3
CO4	3	3	2	3	2	3	-	2	3	-	2	3	-	3	2
CO5	2	3	-	3	3	3	2	2	3	3	2	3	2	3	3
AVE	2	2.2	1.6	3	2	3	2	2.2	2.8	2.2	1.8	2.6	1.8	2.8	2.6


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PAPER II – PHYSIOLOGY

COURSE CODE	Course name	L hrs /wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5002	Physiology	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION

This course which runs concurrently with the anatomy course helps the student to understand the basis of normal human physiology with special emphasis on the functioning of the cardiovascular, musculoskeletal and nervous system.

COURSE OBJECTIVES

- To demonstrate an understanding of elementary human physiology.
- To describe the physiological functions of each system of human physiology
- The student will be able to fulfill with 75% accuracy (as measured by written and oral internal evaluation) the following objectives of the course.

COURSE CONTENT

THEORY:-

1. The cell - cell structure and functions of the various organelles, endocytosis, exocytosis and homeostasis, Acid base balance and disturbance of acid base imbalance.
2. Blood - composition of blood, functions of blood, Erythropoiesis, plasma protein, pathological and physiological variations of RBC structure, function and metabolism of hemoglobin, erythrocyte sedimentation rate, WBC, platelets, coagulation, coagulants, bleeding disorders, blood grouping.
3. Cardio vascular system- physiological anatomy of heart, functions of heart, conducting system of heart, cardiac cycle, cardiac output, heart sounds, ECG, Arterial blood pressure and its regulations, Applied physiology like hypertension, cardiac murmur.
4. Respiratory system - physiological anatomy of respiratory tract, non respiratory functions of respiratory system, Mechanism of respiration, lung volumes and capabilities, Artificial ventilation and cpr, regulation of respiration, respiratory movements and transport of respiratory gases or exchange of respiratory gases.

5. Excretory system - physiological anatomy of excretory system, non excretory functions of excretory system, urine formation, micturition reflex, renal disorders, renal dialysis.
6. Reproductive system - physiological anatomy of male and female reproductive system, process of spermatogenesis and oogenesis, menstruation, hormones of reproductive system.
7. Central nervous system - Functions of CSF, Significance of CSF analysis, blood brain barrier, transport of CSF.
8. Endocrine system - Functions of pituitary, thyroid, parathyroid, adrenal and pancreatic hormones.
9. Digestive system - physiological anatomy of GIT, digestion in the mouth, stomach and intestine, Absorption of food, role of bile in digestion.

Practical's:

1. Compound microscope
2. Determination of blood group
3. Determination of bleeding time
4. Determination of clotting time
5. Estimation of hemoglobin-sahlis method
6. Measurement of human blood pressure
7. Determination of ESR- Westergren's method
8. Determination of PCV
9. Effect of posture on vital capacity
10. ECG and its clinical importance
11. Functions of saliva, gastric juice and pancreatic juice
12. Dialysis (theory only)

COURSE OUTCOME

- CO1: Recognize functions of various structures in the body
CO2: Understand the physiological functions of major organs and systems
CO3: Acquire knowledge on normal physiological functions of living organisms and their parts
CO4: Gain knowledge on the investigation in the physiological functions of each system
CO5: Recognise disciplines of various structures in microscopic and macroscopic level



COPO MAPPING OF PHYSIOLOGY

CO	PO												PS01	PS02	PS03
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	1	2	3	2	3	3	2	2	3	2	2	2	3	2
CO3	-	3	2	3	2	3	2	2	3	-	2	3	-	2	3
CO4	3	3	2	-	2	2	-	2	3	3	2	3	2	3	2
CO5	2	3	2	3	2	3	2	2	3	3	2	3	2	3	3
AVE	2	2.2	2	2.4	2	2.8	2	2	2.8	2.2	2.2	2.6	1.6	2.8	2.6



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III-BIOCHEMISTRY

COURSE CODE	Course name	L hrs /wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5003	Biochemistry	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION:

The main goal of the under-graduate education in Biochemistry is to enable Paramedical student understand, envisage and explain life processes as molecular events and apply his basic knowledge and skills.

COURSE OBJECTIVES:

1. Principles of various conventional and specialized laboratory investigations and instrumentation, analysis and interpretation of a given data; the ability to suggest experiments to support theoretical concepts and clinical diagnosis.
2. At the end of the course, the student should be able to make use of conventional techniques / instruments to perform biochemical analysis relevant to clinical screening and diagnosis
3. Analyze and interpret investigative data
4. Demonstrate the skills of solving clinical problems and decision making.

COURSE CONTENT

- I. Biomolecules and the cell: Major Complex Biomolecules of cells. Cell and Cell organelles. Prokaryotic and eukaryotic cell.
- II. Carbohydrates: Chemical structure. Function. Classification. Monosaccharides. Disaccharides, Polysaccharides. Homopolysaccharides, Heteropolysaccharides, Glycoproteins, Diabetes mellitus.
- III. Proteins: Amino acids, Classification. Structure. Properties. Structure of proteins, Determination of protein structure, Properties of proteins, Denaturation. Classification of proteins Antigen, Antibody. Types, Plasma proteins, Blood Clotting.



- IV. Lipids: Chemical structure, Functions. Classification, Fatty acids, Triglycerides, Phospholipids, Glycoproteins, Lipoproteins, Steroids, Amphipathic lipids, Bile Salts.
- V. Nucleic acids: Purines and pyrimidines. Structure of DNA. Watson and Crick model of DNA. Structure of RNA. Types of RNA, Gout.
- VI. Enzymes: Definition, Nomenclature, Classification. Factors affecting enzyme activity, Active site. Coenzyme. Enzyme inhibition. Mechanism of enzyme action. Units of enzyme. Isoenzyme. Enzyme pattern in diseases.
- VII. Vitamins & Minerals: Fat soluble vitamins [A, D, E, K] Water soluble vitamins---B--- complex & vitamin C. Principal Elements [Calcium, Phosphorous, Magnesium, Sodium, Potassium, Chloride and Sulphur]. Trace elements, Calorific value of foods. Basal metabolic rate [BMR]. Respiratory quotient [RQ] Specific dynamic action [SDA]. Balanced Diet, Nitrogen Balance, Marasmus kwashiorkor, Dietary Fiber.
- VIII. Hormones: Classification, Mechanism of action. Hypothalamic hormones. Pituitary. Anterior, Posterior, Thyroid, Adrenal Cortex, Adrenal medulla, Gonadal hormones, Menstrual cycle, GI hormones.
- IX. Acids and bases: Definition, pH, Henderson Hassel Balch equation, Buffers. Indicators. Normality. Molarity. Molality
- X. BILE PIGMENTS JAUNDICE

COURSE OUTCOME

- CO1: Gain knowledge in determining various biochemical reactions
- CO2: Understand the various metabolic activities and biological process
- CO3: Recognize enzymatic activities required for metabolism of various biomolecules.
- CO4: Proficiency in concepts of chemical reaction and reaction rate in biological systems
- CO5: Acquire knowledge on the geometry and conformations of biomolecules



COPO MAAPING OF BIOCHEMISTRY

CO	PO												PSO1	PSO2	PSO3
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P01 ₀	P01 ₁	P01 ₂			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	1	2	-	2	1	3	1	2	3	2	2	2	3	2
CO3	2	3	2	3	2	3	-	2	3	-	2	2	2	2	3
CO4	3	3	2	3	2	3	2	3	3	3	-	3	2	2	1
CO5	2	-	2	3	2	2	2	2	2	3	2	3	-	3	3
AVE	2.4	1.6	2	2.4	2	2.4	2	2	2.6	2.2	1.8	2.4	1.6	2.6	2.4



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PAPER IV- PATHOLOGY

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5004	PATHOLOGY	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION:

The Goal of teaching pathology is to provide undergraduate students comprehensive knowledge of the causes and mechanisms of disease, in order to enable them to achieve complete understanding of the natural history and clinical manifestations of the disease.

COURSE OBJECTIVES:

1. At the end of one and half years the student shall be able to describes the rationale and principles of technical procedures of diagnostic laboratory tests.
2. Interpret diagnostic laboratory tests and correlate with clinical and morphological features of Diseases.
3. Perform simple bedside tests on blood, urine and other biological fluid samples

COURSE CONTENT:

CELL INJURY – Causes, Mechanism and types of Cell injury; Necrosis; Apoptosis; gangrene; Pathologic calcification; fatty Amyloidosis.

INFLAMMATION – Acute inflammation- cellular and vascular events; chemical mediators of inflammation; Chronic inflammation; Systemic effects of inflammation; granulomatous inflammation.

WOUND HEALING– Terms repair and regeneration; primary wound healing; secondary wound healing; factors affecting wound healing; complications.

CIRCULATORY DISTURBANCE– Thrombosis; embolism; shock; edema.

INFECTIONS-TB: Leprosy; syphilis; HIV; typhoid; malaria opportunistic infections. **GENETIC DISORDER-** Karyotyping; Down syndrome; Klinefelter's syndrome; Turner' syndrome.

CVS DISEASES– Infective endocarditic; rheumatic heart disesase; aneurysm; Atherosclerosis; angina pectoris; myocardial infarction; congenital heart disease- TOF, ASD, VSD, PDA; coarctation of aorta.

RESPIRATORY DISEASES– Asthma; COPD; ARDS; pneumonia; lung abscess; lung cancer; pneumoconiosis.

RENAL DISEASES– Glomerulonephritis; nephrotic syndrome; Urinary tract infection; renal stone; renal failure.

CELLULAR ADAPTATION– Atrophy, hypertrophy, hyperplasia; metaplasia.

NEOPLASIA-definition; difference between benign and malignant; causes of cancer; metastasis.

HYPERSENSITIVITY REACTIONS– type I, II, III, IV

REFERENCES: Harsh Mohan for dental student.

COURSE OUTCOME:

CO1: Gain knowledge in the patho physiological changes in a human system

CO2: Analyse and investigate the changes in the human system that can be tagged for acquiring information about normal and abnormal condition.


CO3: Acquire and articulate knowledge and science relevant to pathological processes.

CO4: Establish competency in analysis of disease conditions and their causes.

CO5: Recognize the pathological conditions of major organs and structure

COPO MAPPING OF PATHOLOGY

CO	PO												PSO1	PSO2	PSO3
	P01	P02	P03	P04	P05	P06	P07	P08	P09	PO1 ₀	PO1 ₁	PO1 ₂			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	1	2	3	2	3	3	2	2	3	2	2	2	3	2
CO3	2	-	2	-	2	3	2	2	3	3	2	-	3	2	3
CO4	3	3	2	3	2	3	-	2	3	3	2	3	2	3	2
CO5	2	3	2	3	2	3	2	2	3	3	2	3	2	3	3
AV E	2.4	1.6	2	2.4	2	3	2	2	2.8	2.8	2.2	2	2.2	2.8	2.6


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PAPER V – MICROBIOLOGY

COURS E CODE	Course name	L hrs /w k	T hrs/ wk	P hr s/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5005	MICROBIOLOGY	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION:

The goal of teaching Microbiology is to provide understanding of the natural history of infection diseases in order to deal with the etiology, pathogenesis, pathogen city, Laboratory diagnosis treatment, control and prevention of these infection and infectious diseases.

COURSE OBJECTIVES:

1. Plan and interpret laboratory investigations for diagnosis of infectious diseases and correlate the clinical manifestations with the etiological agent.
2. Perform simple laboratory tests, which help to arrive at rapid diagnosis.
3. Understand methods of disinfections and sterilization and their application to control and prevent hospital and community acquired infections including universal bio safety precautions and waste diseases.
4. Recommended laboratory investigations regarding bacteriological examination of food, water, milk and air.

COURSE CONTENT:

UNIT	CHAPTERS
GENERAL MICROBIOLOGY	History of Microbiology, Microscopy, and Staining Techniques, Bacterial Anatomy, Culture medium & Techniques, Sterilization & Disinfection, Infection control Measures, Antimicrobial susceptibility testing & Drug resistance


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IMMUNOLOGY	Immunity & types, Immune response, Antigen & Antibody / immunoglobulin, Antigen antibody interactions, Hypersensitivity Autoimmunity & Immune deficiency disorders, tumor & transplantation, Immunology
SYSTEMIC BACTERIOLOGY	Staphylococcus, Streptococcus, Pneumococcus Neisseria, Corynebacterium, Clostridium, Mycobacterium, Enterobacteriaceae, Spirochetes, Nosocomial infections, Zoonoses, Miscellaneous Bacteria
VIROLOGY	Introduction & Classification, Enteroviruses Herpes viruses Orthomyxo & Paramyxo viruses, Adenovirus, Rhabdoviruses Oncogenic Viruses(HPV), Hepatitis viruses, HIV
MYCOLOGY	Introduction, Superficial Mycoses, Subcutaneous Mycoses, Systemic Mycoses, Opportunistic Mycoses
PARASITOLOGY	Amoebiasis, Malaria, Ascariasis
TEXT BOOK	Prescribed Textbook of microbiology by Anandha Narayan & Panicker

COURSE OUTCOME:

CO1: Obtain better understanding of life cycles of major microorganisms.

CO2: Gain knowledge on the diseases and disorders caused due to infections by those microorganism

CO3: Acquire and articulate knowledge and science relevant to microbiology

CO4: Establish competency in analysis of disease conditions caused by microorganisms

CO5: Attribute in research related to microbiology discipline with clarity.



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COPO MAPPING OF MICROBIOLOGY

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	3	1	3	3	1	3	2	2	3	2	1	2	2	3	3
CO2	3	2	3	3	3	2	3	3	2	2	2	2	2	3	2
CO3	-	3	2	3	2	3	3	3	1	1	3	2	2	3	3
CO4	2	3	-	2	3	-	2	3	-	3	3	3	-	1	1
CO5	2	3	3	1	2	3	2	2	3	3	2	3	3	2	2
AVE	2	2.4	2.2	2.4	2.2	2.2	2.4	2.6	1.8	2.2	2.2	2.4	1.8	2.4	2.2



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PAPER VI - PHARMACOLOGY

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5006	PHARMACOLOGY	02	-	01	03	30	50	20	50	120	150

COURSE DESCRIPTION

1. Identify Adverse Reactions and Interactions of commonly used drugs
2. Posses basic knowledge about drug guidelines of drug testing louse.

COURSE OBJECTIVES

1. At The end of the course, the student will be able to the general principles of actions and effects of various drugs and their kinetics.
2. At The end of the course , the student will be able to find different types of biomedical waste, their potential risks and the management of health hazards caused by them

COURSE CONTENT:

UNIT – I GENERAL PRINCIPALS OF PHARMACOLOGY

1. Introduction, Definitions
2. Routes of administration, Newer drug delivery system
3. Pharmacokinetics – Absorbtion, Distribution, Metabolism & Excretion of Drugs
4. Pharmacodynamics – Mechanism of drug action
5. Adverse drug reactions

UNIT – II DRUGS ACTING ON NERVOUS SYSTEM

❖ Central Nervous System

1. General considerations
2. General anesthetics
3. Sedatives and Hypnotics
4. Anti-epileptic agents
5. Opioid analgesics
6. Antipsychotics, antianxiety and CNS stimulants.

❖ Autonomic Nervous System

1. General considerations
2. Cholinergics – Alkaloids, esters, Anticholinesterases, anti cholinergics
3. Adrenergics – Nor – adrenaline, Adrenaline, and Dopamine, anti adrenergics –
a-blockers and 13-blockers

❖ **Peripheral Nervous System**

1. Skeletal muscle relaxants
2. Local anesthetics

UNIT III AUTOCOIDS AND RELATED DRUGS

1. Histamine and Antihistaminics
2. Nonsteroidal Antiinflammatory Drugs and Antipyre – Analgesics
3. Antirheumatoid and antigout drugs

UNIT – IV RESPIRATORY SYSTEM

Drugs used in cough and Bronchial asthma

GASTROINTESTINAL SYSTEM

Drugs used in peptic ulcer

Emetics and Antiemetics

Drugs for constipation and Diarrhoea

UNIT – V HORMONES AND RELATED DRUGS

1. Introduction
2. Anterior pituitary hormones
3. Thyroid hormone and thyroid inhibitors
4. Insulin and Oral hypoglycemic agents
5. Corticosteroids, androgens, estrogens, progestins and contraceptives
6. Drugs affecting calcium balance.

UNIT – VI CARDIOVASCULAR SYSTEM AND BLOOD

1. Introduction to cardiac Electrophysiology
2. Drugs affecting Renin – Angiotensin system – ACE – Inhibitors, Angiotensin antagonist
3. Drugs used in Congestive Heart failure-Cardiac glycosides
4. Antiarrhythmic agents
5. Antianginal agents
6. Antihypertensive agents
7. Haematinics- iron, Vit-B12 and Folic acid
8. Coagulants – Vit-k, Local haemostatics
9. Anticoagulants- Heparin, Warfarin sodium
10. Antiplatelet agents, fibrinolytics, Antifibrinolytics
11. Hypolipidaemic agents and plasma expanders.
12. shock-types (Hypovolemic, Cardiogenic, Neurogenic and Septic shock) and its management



UNIT – VII DRUGS ACTING ON KIDNEY

Renal Physiology – Urine formation – Diuretics and Anti diuretics

UNIT – VIII CHEMOTHERAPY

1. Antimicrobials – General considerations
2. Sulfonamides, Cotrimoxazole and Quinolones
3. Beta – lactam antibiotics (Penicillin and Cephalosporins)
4. Tetracyclines and chloramphenicol
5. Aminoglycosides, Macrolides
6. Antitubercular drugs & Antieprotic drugs
7. Antifungal drugs
8. Antiviral drugs
9. Antimalarial and Antiamoebic drugs
10. Anthelmintic drugs
11. Anti-cancer drugs
12. Urinary antiseptics

UNIT – IX MISCELLANEOUS

1. Immunomodulators
2. Chelating agents
3. Gases
4. Vitamins
5. Vaccines and sera
6. Enzymes in therapy
7. Antiseptics and Disinfectant

PART – II

CLINICAL TOXICOLOGY

General Principles in Toxicology - poisons and its treatment

❖ PRESCRIBED BOOK FOR STUDENTS :

1. Medical Pharmacology – KD Tripathi 71th Edition
2. Medical Pharmacology – Padamaja Udayakumar 31st Edition
3. Pharmacology & Phan – nacotherapeutics – R.S.Satoskar 23rd Edition

❖ REFERENCE TEXT BOOK:

1. Clinical pharmacology – Bertram, G.Katzung 21st Edition

2. The Pharmacological basis in Therapeutics – cidodman8, Gillman 12th Edition

COURSE OUTCOME:

CO1: Acquire and articulate knowledge relevant to drug performance and regime plans.

CO2: Establish competency in analysis of drugs' mechanism of action.

CO3: Recognize and relate the importance of drugs in clinical practice.

CO4: Identify the various drug reactions and pharmacokinetics.

CO5: Gain knowledge on the purpose of drugs and their mechanism of actions for various conditions

COPO MAPPING OF PHARMACOLOGY

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	3	3	2	3	3	-	1	3	3	-	2	2	2	3	3
CO2	2	2	3	3	3	3	3	3	2	3	3	-	2	3	2
CO3	3	-	2	2	3	3	2	2	1	1	3	2	3	2	2
CO4	1	2	3	3	-	3	3	1	3	3	1	3	3	3	3
CO5	2	3	1	2	3	2	2	3	3	3	2	3	3	2	2
AVE	2.2	2	2.2	2.6	2.4	2.2	2.2	2.4	2.4	2	2.2	2	2.6	2.6	2.4



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PAPER VII- PRINCIPLES OF MANAGEMENT

COURSE CODE	Course name	L hr s/wk	T hr s/wk	P hr s/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5009	PRINCIPLES OF MANAGEMENT	01	-	-	01	30	100	-	-	-	130

COURSE DESCRIPTION

This course is designed to enable students to acquire in-depth understanding of management of hospital services, management of services and educational programmes.

COURSE OBJECTIVES

1. Understand the principles and functions of management
2. Understand the elements and process of management
3. Appreciate the management of nursing services in the hospital and community.

COURSE CONTENT:

A) PRINCIPLES OF MANAGEMENT

Development of management :- Definition of management contribution of F.W Taylor ,Henry Fayol and others

Functions of management : planning = organizing direct controlling Planning

:- types of planning short – term and long term plans cooperate or strategic

planning planning premises policies characteristics and source

principles of policy making strategies as different from policies procedure and methods limitations of planning

organizing:- Importance of organization hierarchy scalar chain Organization

relationship line and staff relationship Functional relationship committee

organization management committees department

Motivation:- Motivation theories Mc Gregors's theory X and Y Maslows'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 barrier 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 factor limiting effective span of control Super management, General managers, Middle managers and supervisors planning and corrective measures strategic control points budgetary control types of budget

Co-ordination :- Co-ordination and co-operation Principles of co-ordination

Techniques of co-ordination Organization charts and records Standard procedure instruction

B) PERSONNEL MANAGEMENT

I) Objective of personnel management role of personnel manager in personnel manager in organization staffing and work distribution techniques job analysis description recruitment and selection process orientation and train coaching and counseling disciplining complaints and grievance termination of employees performance appraisal health and safety employees

II) Consumer protection Act as applicable to health care services

FINANCIAL MANAGEMENT

Definition of financial management profit maximization set maximization short term financing – intermedi financing long term financing leasing as a source of finance C and security management –inventory management divided policy valuation of shares financial management in a hospital third party payment on behalf of patients

Insurance:- health scheme and policy

COURSE OUTCOME:

CO1: Obtain knowledge on the functioning of hospital

CO2: Proficiency in different areas of management

CO3: Gain knowledge in the latest concepts of management.

CO4: Acquire knowledge on the various clinical and non-clinical services .

CO5: Identify and work on ethical and legal aspects of hospital management.

COPO MAPPING OF PRINCIPLES OF MANAGEMENT

CO	PO														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	3	3	3	2	2	3	2	3	2	2	3	3
CO2	3	3	3	1	2	3	3	3	2	3	2	2	2	3	2
CO3	3	3	2	-	3	3	1	2	3	-	3	1	3	3	2
CO4	-	3	2	3	2	2	3	-	2	2	3	3	3	-	3
CO5	3	3	-	2	1	3	2	2	2	3	2	3	3	2	3
AVE	2.2	2.6	1.8	1.8	2.2	2.8	2.2	1.8	2.4	2	2.6	2.2	2.6	2.2	2.6


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PAPER VIII- BASICS OF COMPUTER

COURSE CODE	Course name	L hr s/ wk	T hr s/ wk	P hr s/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5010	BASICS OF COMPUTER	01	-	-	01	30	100	-	-	-	130

COURSE DESCRIPTION

This course is designed for students to development basic understanding of uses of computer and its applications.

COURSE OBJECTIVES

1. Identify & define various concepts used in computer.
2. Identify & describe application of computer in nursing. 3

Describe & use the DOS & Windows

4. Describe & demonstrate skill in the use of MS-office.


COURSE CONTENT

I) Introduction to computer I/O Device memories – RAM & different kinds of ROM- kilobytes, MB, GB, their conversions computer- medium, micro, mini computers Different corn languages number system binary & decimal conversions Different operating systems- MS- DOS Basics command- MD, MS, DIR, T and COPY CON commands networking – LAN ,WAN,MAN(basic ideas)

II) Typing and texting MS-WORD – manipulating text formatting the using different fonts, font sizes , bold, italic bullets and numb picture ,file insertion aligning the text and justify choosing p size, adjusting margins ,header and footer , inserting page no's document printing a file with options using spell check and grammar find and replace mail merge inserting tables in a document. Creating table MX EXCEL- Cell editing using formulas functions manipulating data with excel using sort function to numbers and alphabets. Drawing graphs and charts using data in Auto formatting inserting data from other work sheets Preparing new slides using MS- POWERPOINT Inserting slides – transition and animation using templates Different text and font slides with sounds inserting clip arts, pictures, tables gr presentations wizards

Introduction to internet using search engine google search explorer the net using internet explorer and net scape navigator, uploading, downloading of files and images email id creation, sending messages, attaching files in email, introduction to "c" language, different variables, declaration usage writing small programme using function sub-functions

PRACTICAL



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Typing a text and aligning the text with different formats using MS- WORD
 Inserting a table with proper alignment using formulas using MS- WORD
 Creating a mail merge document using MS- WORD to prepare greeting 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- PWERPIONT
 Creating worksheet using MS- EXCEL with data and use of functions.
 Using MS- EXCEL prepare a worksheet with text,date,time and data
 Preparing a chart and pie diagram using MS- EXCEL


Using internet for searching, uploading files,downloading files,creatinge-mail Using C language writing programme using function

COURSE OUTCOME:

- CO1: Gain knowledge to understand the application of computers in biomedical field
- CO2: Communicate, investigate and design solutions and present effectively
- CO3: Organize the team research for reliable quick output
- CO4: Acquire knowledge on common computer applications in health care sector
- CO5: Analyse overall computer based technical skills in hospitals

COPO MAPPING OF BASICS OF COMPUTER

CO	PO												PS01	PS02	PS03
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO 1	3	3	2	3	3	3	2	1	3	2	3	2	2	3	3
CO2	3	2	3	3	2	3	3	3	2	2	2	2	2	3	2
CO3	3	3	2	-	3	3	2	2	3	1	3	2	3	2	2
CO4	-	2	3	2	3	-	1	-	2	2	-	2	2	3	1
CO5	2	3	3	2	1	3	2	2	2	3	2	3	3	2	3
AVE	2.2	2.6	2.6	2	2.4	2.4	2	1.8	2.4	2	2	2.2	2.4	2.6	2.2


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PAPER IX -ENGLISH

COURS ECODE	Course name	L hr s/ w k	T hr s/ w k	P hr s/ w k	Tota l hour s	IA	Theor y	Viva	Practica l	EA	Tota l
5011	ENGLISH	01	-	-	01	30	100	-	-	-	130

COURSE DESCRIPTION

This course is designed to help the students acquire an understanding of the principles and methods of communication and teaching. It helps to develop skill in communicating effectively, maintaining effective interpersonal and human relations, develop basic skills in guidance and counseling, principles of education, teaching individuals and groups in clinical, community and health educational settings.

COURSE OBJECTIVES

1. Understand the effective communication process using various communication techniques with individuals groups and health team members.
2. Establishes effective interpersonal and human relations with patients, families and health team members.
3. Acquires knowledge on concepts, principles on guidance and counseling and develop basic skills for counseling patients, nursing students and nursing personnel.

COURSE CONTENT

Communication :- Role of communication definition communication classification of communication purpose communication major difficulties in communication barrier communication Characteristics of successful communication “the seven CS” Communication at the workplace and communication “Mind mapping” informal communication

Comprehension passage:-Reading purposeful Understanding what is read Drawing conclusion finding and analysis

Explaining:- How to explain clearly defining and giving reasons Explaining differences Explaining procedure giving directions

Writing business letters:- how to construct correct Formal language Address salutation Body conclusion

Report Writing:-Reporting an accident reporting when happened at a session Reporting what happened at a meeting



COURSE OUTCOME:

CO1: Gain knowledge on basics of English Language

CO2: Proficiency skill in speaking and writing English

CO3: Expertise in the phonetics of English Language

CO4: Acquire core skills in grammar and vocabularies

CO5: Emphasize essential skills required for effective written and oral communication and use nuances of presentation effectively

COPO MAPPING OF ENGLISH

CO	PO														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	3	3	3	3	2	3	2	1	2	1	3	3
CO2	-	3	3	2	2	2	3	3	2	3	2	2	3	2	2
CO3	3	3	3	2	3	2	2	1	2	2	3	3	3	3	3
CO4	2	-	-	3	3	3	-	2	-	2	2	3	-	3	3
CO5	1	3	3	2	1	3	2	2	3	3	2	3	3	2	3
AVE	1.8	2.4	2.2	2.4	2.4	2.6	2	2	2	2.4	2	2.6	2	2.6	2.8

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**B.Sc. (PHYSICIAN ASSISTANT)
II Year**

Paper I - Medicine outline

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5601	Medicine outline	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

The Goal of teaching Medicine outline is to focus on diagnosing as well as treating common health problems or disorders

COURSE OBJECTIVES

1. Demonstrate the ability to perform an admission history and physical examination
2. Demonstrate facility in the application of medical informatics technology and critical appraisal of the medical literature in making diagnostic and management decisions in internal medicine
3. Write admission orders for common inpatient internal medicine problems
4. Demonstrate the ability to construct a hospital progress note

COURSE CONTENT

Unit 1:

Introduction to medical terminology- roots, prefixes, and suffixes, vocabulary Problems — genetics, aging, infection, injury Skeletal system — Bones and ligaments — disorders, diagnosis and treatment Muscular system — skeletal, smooth and cardiac muscles — disorders, diagnosis and treatment

Unit 2

Nervous system — brain, spinal cord, peripheral nerves, sense organs —disorders , diagnosis and treatment Endocrine system — disorders, diagnosis and treatment Diagnostic method include — blood work, X-ray and imaging Treatment includes — medical and surgical

Unit 3

Cardiovascular system —heart, blood and blood vessels — disorders, diagnosis and treatment
 Respiratory system — air passages, lungs, diaphragm - disorders, diagnosis and treatment
 Integumentary system — skin, hair and nails — disorders, diagnosis and treatment
 Immune and lymphatic system — disorders, diagnosis and treatment
 Diagnosis — blood and imaging
 Treatment — Medical and surgical

Unit 4

Digestive sytem — mouth, throat, stomach, intestine, liver, gallbladder, pancreas —disorders, diagnosis and treatment / Urinary system — kidneys, ureters, bladder, urethra- disorders, diagnosis and treatment / Reproductive system — male and female — disorders, diagnosis and treatment
 Emergency medicine / Medical ethic

COURSE OUTCOME:

CO1: Students should be able to elicit the patient's chief complaint, history of present illness, past medical history, social, family, occupational histories and complete a review of systems.

CO2: Demonstrate the ability to construct an assessment and plan for an individual patient organized by problem, discussing the likely diagnosis and plan of treatment.

CO3: Counsel patients about how to take their medications and what to expect when they take their medications, including beneficial outcomes and potential adverse effects.

CO4: Describe the results of the above tests in terms of the related pathophysiology

COPO MAPPING OF MEDICINE OUTLINES

CO	PO														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	3	2	3	3	2	2	2	2	3	2	2	3	3
CO2	3	3	3	1	2	3	3	3	2	3	2	2	2	3	2
CO3	3	-	2	2	3	3	1	-	3	3	3	-	3	-	2
CO4	3	3	2	3	-	2	3	3	2	-	3	3	-	3	-
CO5	1	3	1	2	1	3	2	2	2	3	3	3	3	2	3
AVE	2.2	2	2.2	2	1.8	2.8	2.2	2	2.2	2.2	2.8	2	2	2.2	2



Paper II: PAEDIATRICS AND GERIATRICS

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5602	PAEDIATRICS AND GERIATRICS	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

This course is designed to help the students acquire knowledge medical care of infants, children, and adolescents and to deal with the problems and diseases of old age and the medical care and treatment of aging people.

COURSE OBJECTIVES

- 1) identifying high risk patients, assessing multi-problem patients
- 2) treating multi-problem patients, rehabilitating patients following acute events
- 3) To provide an excellent clinical experience in the management of pediatric patients of all ages with a broad spectrum of illnesses and injuries.
- 4) To train physicians in the immediate recognition and treatment of life threatening illnesses including medical, surgical, and psychiatric emergencies.

COURSE CONTENT

Unit 1

Definition, population, morbidity and mortality in children, maternal, perinatal, neonatal, infant and preschool mortality rates, current National Programmes like ICDS, RCH, Vitamin A prophylaxis, UJP, IMCI, Pulse Polio, AFT, ARI, Diarrhoea control programmes. Growth and development — anthropometry — Measurement and interpretation of weight, length/height, head circumference, mid-arm circumference. Use of weighing machines, infant meter, interpretation of Growth Charts: Road to health card and percentile growth curves, abnormal growth patterns- failure to thrive, short stature, growth pattern of different organ systems like lymphoid, brain and sex organs, normal pattern of teeth eruption. Important milestones in infancy and early childhood in areas of gross motor, fine motor, language and personal — social development, psychological and

behavioural problems Measurement and interpretation of sitting height, US: LS ratio and arm span
Age- independent antropometric measurement — principles and application

Unit 2

Nutrition - normal requirements of carbohydrates, protein, fats, minerals and vitamins for newborn, children, pregnant and lactating mother_ Common food sources. Breast feeding — colostrum and composition of breast milk, initiation and technique of feeding, hazards and demerits of prelacteal feed, top milk and bottle — feeding_ Feeding of LBW babies. Infant feeding /weaning foods, methods of weaning. Assessment of nutritional status of child based on history and physical examination. Characteristics of transitional and mature milk (foremilk and Hind milk) Protein energy malnutrition-definition, classification, features, causes and management. Vitamins —etio-pathogenesis, clinical feature, biochemical and radiological findings, differential diagnosis and management of nutritional disorders.

Definition, causes and management of obesity Immunization :- National immunization programme, vaccine preservation and cold- chain. Vaccination types, contents, efficacy, storage, dose, site, route, contraindications and adverse reactions-BCG, DPT, PV, Measles, MMR and Typhoid. Pulse Polio Immunization, AFP (Acute flaccid paralysis) surveillance Special vaccines — Hepatitis B, H influenza B, Pneumococcal, Hepatitis A, Chicken Pox, Meningococcal and Rabies.

Unit 3

Disorders of respiratory system, gastro intestinal tract, central nervous system, cardiovascular system, genitor-urinary system and haematological disorder Infectious disease — epidemiology, basic pathology, symptoms, signs, complications, investigations, differential diagnosis , management and prevention of common bacterial , viral and parasitic infections Special reference to vaccine — preventable disease — Diarrhoea, LRTI, TB, Polio, meningitis, diphtheria, whooping cough, tetanus , measles, mumps, rubella, typhoid, viral hepatitis , cholera, chicken pox, giardiasis, amoebiasis, intestinal helminthiasis, malaria, dengue fever, AIDs Kala czar , leprosy , chlamydia infection. Paediatric emergencies — status epilepticus, status asthmaticus / acute severe asthma, shock and anaphylaxis, burns, hypertensive emergencies, gastrointestinal bleed, comatose child, congestive cardiac failure, acute renal failure. Genetics- principles of inheritance and diagnosis of genetic disorders Down's syndrome

Unit 4

Geriatrics- physiological and psychological fundamentals of aging process Diet for the aged and management of nutritional disorders Disorders of major geriatric ailments and management -Medical — infections, dehydration, acute confusional state, osteoporosis, Degenerative joint diseases, effects of immobility prevention of contracture and bedsores. Economic and psychosocial needs of the aged. Role of various health care providers including family.



CO	PO														
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
CO 1	2	1	2	3	3	3	2	2	3	2	3	2	2	3	3
CO2	3	3	3	1	2	3	2	3	2	3	2	2	2	3	2
CO3	3	3	-	2	2	2	-	3	3	3	3	1	3	3	-
CO4	-	3	2	3	2	2	3	3	-	2	-	3	2	3	3
CO5	2	1	3	1	3	2	2	2	3	3	2	3	3	2	3
AV E	2	2.2	2	2	2.4	2.4	1.8	2.6	2.2	2.6	2	2.2	2.4	2.8	2.2

COURSE OUTCOME:

CO1: Students will have knowledge about bedside manners, clinical history taking record maintenance in paediatrics


CO2: To teach about various paediatrics problems and approach to manage paediatrics diseases

CO3: To teach vaccination programme and schedule

CO4: Students will have knowledge about approach to various medial diseases

CO5: Students will have knowledge and will be skilled enough to do various bedside procedures

COPO MAPPING OF PAEDIATRICS AND GERIATRICS


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Paper III – Surgery and Obstetrics and Gynaecology

Course Code	Course Name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5603	Surgery and Obstetrics and Gynaecology	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

The ability to evaluate surgical patients, including recognition of medical or surgical emergencies which threaten life or limb and require initiation of emergency medical or surgical care.

COURSE OBJECTIVES

1. Participating in determining or confirming a diagnosis
2. Thorough preoperative evaluation and preparatory care
3. Immediate postoperative and long-term follow-up care

COURSE CONTENT

Surgery:

Unit 1

History of surgery, role of surgeon, importance of team work, stresses arising during operative procedure, surgical terminology, types of incision and their indications, internal & external haemorrhage — signs and symptoms, management, Tourniquets — use and duration of application and dangers of use. Sutures and surgical instruments

Unit 2

Pathogenesis, causes, epidemiology, clinical presentation, investigations and management of diseases of the following systems:-Skin — ulcers, wounds, burns, skin infections (boil, carbuncle, abscess, Cysts (epidermoid, dermoid) tumors (basal cell, squamous cell carcinoma and melanoma) Head and neck region — congenital anomalies (cleft lip, cleft palate, branchial cyst and fistula, thyroglossal cyst), parotid and submandibular glands, oral ulcers, Leukoplakia, jaw tumors, squamous carcinoma of oral cavity, pharynx and larynx. Thyroid and lymph nodes swelling. Arteries — limb ischemia, non-invasive vascular diagnostic tests, atheromatous disease, aneurysm, Raynaud's syndrome, emboli, Veins — Varicose veins, deep vein thrombosis and pulmonary embolism

Unit 3

Breast — mastalgia, fibroadenoma, cyst, breast abscess, cancer

Oesophagus — dysphagia, reflux, hiatus hernia, benign and malignant tumors Stomach and duodenum — peptic ulcer, carcinoma , pyloric stenosis Small intestine — small bowel obstruction, intestinal tuberculosis Colon and rectum — amoebic colitis, ulcerative colitis, colorectal cancer Appendix — acute appendicitis , acute abdomen Anus— Haemorrhoids, pruritis ani, fissure and fistula-in-ano, anorectal abscesses, cancer Peritoneum and intraperitoneal abscesses, liver trauma, abscess, cancer Hillary tract — gall stone disease and carcinoma, pancreas — pancreatitis, carcinoma Hernias of abdominal wall- Inguinal, femoral, umbilical and epigastric Urology- diagnostic studies, urinary calculi, urinary infection, prostatic hyperplasia, tumors Epididymo-orchitis, hydrocele, carcinoma of testicle and penis Neurology — diagnosis, treatment and rehabilitation of disorders of entire nervous system Various procedures like microdissectomy and laminectomy etc.

Unit 4

Common equipments /anaesthesiology Personal cleanliness and aseptic techniques / dressing techniques / wound care Pre-operative and post- operative care of the surgical patient Emergency procedure — endotracheal intubation, tracheotomy Central line placement, IV cannulation, Ambu bag ventilation, CPR, Basic Life Support **Unit I -**

Obstetrics and Gynecology

Bony pelvis - important land marks of obstetrics significance, fetal skull Physiological changes in pregnancy / menopause Conception, abortions , gestational trophoblastic diseases Vulva - cyst, inflammation, neoplasia , dystrophy Vagina - cytology, infection, inflammation, neoplasia Uterus -endometriosis, adenomyosis , hyperplasia, atrophy, carcinoma Cervix - erosion, infections, malignancy Infections - STD, genital TB, HIV, TORCH, vertical transmission of HIV

Unit 2

Obstetrics- Diagnosis of pregnancy, antenatal care and fetal surveillance, first trimester bleeding, normal and abnormal presentations and positions, dystocia due to bony pelvis, soft tissue, high risk pregnancies, IUGR, IUD, preterm labour, premature rupture of membranes, poly and oligohydramnios, postdated delivery, Prolonged labour, obstructed labour, rupture uterus, previous LSCS, third trimester bleeding , preeclampsia and eclampsia , medical disorders complicating pregnancy, surgical emergencies in obstetrics, Rh iso immunization, partogram, ultra sound in obstetrics, fetal monitoring , active management of labour, neonatal resuscitation, analgesia and anaesthesia in obstetrics, instrumental deliveries, LSCS, third stage complications, normal and abnormal puerperium , morbidity and mortality, medical auditing in obstetrics.

Unit 3

Gynecology: - Maldevelopment, injuries, infections, cysts , tumors of female genital tract. Vulva - inflammation, ulcers, atrophy, dystrophies, cysts, neoplasm Vagina - leucorrhoea, infections, carcinoma Cervix - erosion, ulcer, dysplasia, carcinoma Uterus - prolapse, displacements (inversion and retroversion), endometriosis abnormal uterine bleeding / post menopausal bleeding, endometrial hyperplasia, benign and malignant tumours. Primary and secondary amenorrhoea, infertility, PCOD, assisted reproductive techniques, choriocarcinoma.

Unit 4

Urinary system - Stress incontinence, pelvic pain, low back ache Cancer screening for genital malignancy and breast / Pap smear Radiotherapy outline and chemotherapy Neonatology: - Neonatal resuscitation, meconium aspiration syndrome, preterm care, RDS, neonatal jaundice, congenital anomalies, birth injuries.

COURSE OUTCOME:



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CO1: To teach bedside, operation table and critical care manners, history and record writing in surgical patients.

CO2: Students will have knowledge about problems during Antenatal period and approach to its management.

CO3: To teach and introduce with clinical approach for management of surgical patients

CO4: To introduce students about general and specialised surgical conditions

CO5: Students will have knowledge about menstruation and pregnancy and demonstrate delivery.

COPO MAPPING OF SURGERY, OBSTETRICS AND GYNAECOLOGY

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	3	3	2	3	3	3	2	2	3	2	3	2	2	3	3
CO2	3	3	3	2	2	3	3	3	2	3	2	2	2	3	2
CO3	3	2	1	3	3	1	2	2	3	3	3	1	3	3	2
CO4	-	3	-	3	1	3	-	1	3	2	-	2	3	-	3
CO5	1	3	3	2	1	3	2	2	2	3	2	3	1	3	2
AVE	2	2.8	1.8	2.6	2	2.6	1.8	2	2.6	2.6	2	2	2.2	2.4	2.4



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THIRD YEAR

Paper I – Cardiology and Cardiac surgery and Neurology

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5604	Cardiology and Cardiac surgery and Neurology	05	-	03	08	30	100	20	50	170	20

COURSE DESCRIPTION

They aid in the prompt diagnosis and treatment of diseases pertaining to the heart and the blood vessels. They also have to maintain the health of the heart in terminally ill patients. They should have good knowledge in operating the different equipments.

COURSE OBJECTIVES

- students should assess the clients for heart-related problem
- Monitor and care for those suffering from cardiovascular ailments
- Have good knowledge in medical equipment and tools used
- Learn and apply basic and advanced life support skills

COURSE CONTENT

Neurology:

Unit I

Nervous system — basics — neurotransmitters- general principles and common transmitters
Cell membrane — physicochemical properties, permeability and transport, bioelectricity,
Genesis of resting membrane potential, action potential, properties of nerve- fibres.
Neuromuscular junction Muscle proteins, excitation — contraction coupling, injury and repair of nerves and muscles, work physiology.

Unit 2

Sensory system — Functional organization of sensory system, perception of sensory stimuli, coding, physiology of pain. Motor System — Functional organization of motor system, properties of reflexes, brain stem ,stretch , tendon reflexes, basal ganglia cerebellum and vestibular neck reflexes , maintenance of equilibrium
,localizing the level of lesion in neurological diseases Visceral and motivational system — autonomic nervous system, hypothalamus , limbic system, emotions, EEG , sleep and wakefulness, learning ,memory and speech.


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Unit 3

Neuropathology — Trauma Inflammatory disorders- pyogenic and tuberculous meningitis, brain abscess, tuberculoma CSF and its disturbances — cerebral edema, raised intracranial pressure Cerebrovascular disease — atherosclerosis, thrombosis, embolism, aneurysm, hypoxia, infarction and haemorrhage.

Unit 4

Neurological diseases: - Clinical examination of nervous system, investigations Major manifestations headache, facial pain, raised intracranial tension, faintness, dizziness, syncope, vertigo Disorders of sleep and movement Sensory disturbances (numbness, tingling and sensory loss), acute confusional state, coma and brain death, Aphasia and focal cerebral disorders, disturbances of brain stem, vision and sphincter. Headaches — migraine, cluster and seizures Cerebrovascular disease-Dementia, meningitis, encephalitis , cranial nerve diseases, spinal cord diseases , tumours (primary and secondary), Peripheral neuropathies and demyelinating disorders , multiple sclerosis , Parkinson's disease, extrapyramidal disorders, cerebellar disorders. Motor neuron disease, diseases of muscles, neurological manifestations of systemic diseases, nutritional metabolic diseases of the nervous system.

CARDIOLOGY AND CARDIAC SURGERY

Unit 1

Basic - structural basis of cardiovascular disease, embryology, chambers, heart valves, surface marking, great vessels, blood, cardiovascular disease, cardiac cycle, heart sounds, circulation of blood, cardiovascular responses to exercise, heart failure and compensatory mechanism, cardiac muscle action, coronary perfusion.

Unit 2

Cardiovascular diseases - symptoms and signs, pulse, BP, JVP Congenital heart disease - cyanotic and acyanotic heart diseases Hypertension - essential, malignant, systemic and pulmonary hypertensions

Arterial diseases - atherosclerosis - risk factors, Burger's disease Coronary, Rheumatic heart disease, heart failure, Cardiac arrhythmias, cardiomyopathies

Peripheral vascular disease, pulmonary thromboembolism, Systemic diseases affecting the heart, pregnancy and heart disease

Pericardial diseases, Cardiac trauma, tumors of heart

Unit 3

Prevention of heart diseases - Diagnostic tools - ECG, Chest X-ray, ECHO, TMT, Holter, 24 hour ambulatory BP monitoring, blood analysis, etc.,

Cardiac catheterization and coronary angiography - preparation of patient physically and mentally. Pre and post - operative care and rehabilitation PROGRAM. PPI

Importance of life style modification measures.

Unit 4

Cardiac surgery: - Basics - Cardiopulmonary bypass - closed and open heart operation, PDA ligation, closed mitral valvotomy, pulmonary artery banding, block trussing shunt, pericardiectomy, shut operations, ASD and VSD closure, Tetralogy of Fallot correction, valvular disease surgeries, surgery for transpositions, other corrective surgeries and coronary surgeries.

COURSE OUTCOME:




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- CO1: Recognise the fundamental concepts of etiopathology of various cardiac diseases
 CO2: Proficiency in understanding the concepts of exhaustive ideology of prevalence, effects and management of cardiac
 CO3: Rule out the various pathological conditions related to cardiology
 CO4: Recognise the fundamental concepts of etiopathology of various neurological diseases
 CO5: Analyze depth of disease state and criteria for investigations

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	1	2	3	2	1	-	1	2	3	2	2	2	3	2
CO3	2	3	2	3	2	3	3	2	3	-	2	2	2	2	3
CO4	3	3	2	3	2	3	2	3	3	3	3	3	2	2	1
CO5	1	2	2	2	2	2	2	2	2	3	2	3	-	3	3
AVE	2.2	2	2	2.8	2	2.4	2	2	2.6	2.2	2.4	2.4	1.6	2.6	2.4


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**Paper II –
GASTROENTEROLOGY / ORTHOPAEDICS / NEPHROLOGY / PULMONOLOGY**

COURSE CODE	Course name	L hrs/s/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5605	GASTROENTEROLOGY / ORTHOPAEDICS / NEPHROLOGY / PULMONOLOGY	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION


The course has been designed to train and produce graduates who are capable of understanding and assisting specialists in the different treatment processes.

COURSE OBJECTIVES

1. To provide a distinctive scholarly environment for academic career development in renal medicine, hypertension, and related fields of research, both basic and clinical
2. to provide clinical and research experiences at sufficient depth, breadth, and rigor that will lead the fellow to attain competency as a clinical consultant in renal medicine and hypertension and as a clinical or basic science investigator
3. for each fellow to achieve excellence and confidence as an educator

COURSE CONTENT

Unit1


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Clinical gastroenterology — Basics, functions and physiology of defecation Preventive gastroenterology- obesity, GI disorders, constipation, diarrhea and dysentery Surgical asepsis and hygienic endoscopy room — preparation of sterile field — preparation of tables, equipments, instruments for the procedure, giving oral anaesthetic agent, transfer and positioning of the patient, care of the room before , during and after the endoscopy procedure, special precautions in handling patients with sepsis, blood borne infection — Hepatitis B, HCV, HIV etc, cleaning and disinfection , terminal disinfection, Basic endoscopy unit — forward viewing, single channel and double channel endoscopy and specific instruments used in endoscopic and colonoscopic procedures.

Unit 2

Ortho: - basics, ossification of bones of the limbs for age determination, X-rays of bones, process of repair of bone. Infections — osteomyelitis, tuberculosis, mycetoma. Metabolic diseases — rickets /osteomalacia, osteoporosis, hyperparathyroidism Tumours- Primary — Osteosarcoma, Osteoclastoma, Ewing's sarcoma, chondrosarcoma and Secondary tumors Arthritis — Rheumatoid, osteo arthritis/ ankylosing spondylitis.

Unit 3

Fracture — definition, classification, management, fracture healing, delayed union, open fractures, management of fracture clavicle, shaft of humerus and dislocation of shoulder. Classification of injuries around the elbow and management of supracondylar fracture and dislocation of elbow, Monteggia fracture dislocation and fracture of both bones of forearm, Volkamann's ischemic contracture, fracture lower end of radius, scaphoid and metacarpal fracture. Fracture of pelvis and dislocation of hip, fracture neck of femur, trochanter, shaft of femur tibia, fibula and metatarsal.

Unit 4

Internal derangements of knee, injuries of ankle and foot, amputations, Congenital malformations — CTEV, torticollis , CDH, pseudoarthrosis Disorders of hip- Coxa vara, Perthes disease. Deformities and disorders of the spine Blood transfusion

NEPHROLOGY / PULMONOLOGY

Unit 1

Genito - urinary system - basics, innervations of urinary bladder in detail, microscopic structure of the kidney, Juxtaglomerular apparatus, microcirculation of kidney, histopathology of kidney, ureters, urinary bladder and urethra. Renal haemodynamics and glomerular filtration- renal function, renal function tests, micturition

Unit 2

Urinary tract pathology- basis of impaired renal function, urine .analysis. Glomerulonephritis classification - primary (proliferative and non-proliferative) Secondary giomerulonephritis - (SLE. purpura, polyarteritis, amyloidosis, diabetes, nephritic syndrome)' Acute renal failure, progressive renal failure and end stage renal disease. Pyelonephritis , reflux nephropathy, interstitial nephritis. Renal and genitourinary tract tumours - renal cell carcinoma and nephroblastoma. Renal vascular disorders, kidney changes in hypertension Urinary bladder - cystitis, carcinoma, urinary tract tuberculosis, urolithiasis and obstructive uropathy Congenital abnormalities of kidneys and urinary system.

Unit 3

Clinical examination of kidney and genitourinary system- symptoms, signs and investigations. Major manifestations - dysuria, pyuria, urethral symptoms Disorders of urine volume, haematuria , proteinuria, oedema, Obstruction of urinary tract, incontinence, renal involvement in systemic disorders Drugs and kidney, renal replacement therapy.

Unit 4

Upper airway diseases - basic respiratory mechanics, causes and pathophysiology of hypoxia and hypercapnia. Respiratory failure - acute, chronic mechanism and management Allergy and bronchial asthma, chronic Obstructive lung diseases / Restrictive / interstitial lung diseases, pulmonary tuberculosis, occupational lung diseases Lung cancer Primary and secondary, haemoptysis, pneumonia. Pleural diseases - Pneumothorax, Pleural effusion Cardiogenic and non-cardiogenic pulmonary odema, Diseases of the Diaphragm and the Chest wall.

COURSE OUTCOME:

CO1: Students will have knowledge about Muscle Skeletal trauma and fracture.

CO2: Students will have knowledge about various instruments and equipments used in orthopaedic

CO3: Recognize the significance of the diagnostic techniques and its uses in nephrology and respiratory related diseases

CO4: Students should be able to define, describe, and discuss, Information resources for determining medical and surgical treatment options for patients with common and uncommon gastrointestinal problems.

CO5: Factors that frequently alter the effects of medications, including drug interactions and compliance problems.

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3
CO2	3	1	2	3	2	1	-	1	2	3	2	2	2	3	2
CO3	2	3	2	3	2	3	3	2	3	-	2	2	2	2	3
CO4	3	3	2	3	2	3	2	3	3	3	3	3	2	2	1
CO5	1	2	2	2	2	2	2	2	2	3	2	3	-	3	3
AVE	2.2	2	2	2.8	2	2.4	2	2	2.6	2.2	2.4	2.4	1.6	2.6	2.4

**ELECTIVES (SELECT ONE)
COMMUNITY MEDICINE**

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	T
5607	COMMUNITY MEDICINE	05	-	-	05	30	100	-	-	100	15

COURSE DESCRIPTION

The course deals with population or groups rather than individual patients. It is concerned with identification & assessment of health needs of the people, health problems affecting them and to devise appropriate measures

COURSE OBJECTIVES

To demonstrate an understanding of the influence of social and environmental factors on the health of the individual and society.

To demonstrate an understanding of the principles of first aid and demonstrate skill in giving first aid treatment in emergencies that may be met in the community and in their practice as therapists.

COURSE CONTENT

Outline the natural history of diseases and the influence of social, economic and cultural aspects of health and diseases.

Outline the various measures of prevention and methods of intervention especially for diseases with disability.

Outline the national care delivery system and the public health administration system and the central and state level, local trends and resource.

Outline selected national health programmes including current programmes (Eg. SSA Sarva Siksha Abhiyan)

Define occupational health and list methods of prevention of occupational diseases and hazards.

Outline the Employees State Insurance scheme and its various benefits.

Describe the social security measures for protection from occupational hazards, accidents, diseases, and the workman's compensation act.

Outline the objectives and strategies of the national Family Welfare Programme

Define community based and institution based rehabilitation. Describe the advantage and disadvantages of institution and community based rehabilitation.

Describe the following communicable diseases with reference to reservoir, mode of transmission, route of

entry and levels of prevention. a.

92 Polio myelitis, b. Meningitis, c. Encephalitis, d. Tuberculosis, e. Filariasis, f. Leprosy, g. Tetanus & h. Measles.

Describe the epidemiology of rheumatic heart disease, cancer, Chronic degenerative disease and cerebrovascular accidents.

Outline the influence of nutritional factors such as protein Energy Malnutrition, Anaemia, Vitamin deficiency and minerals on disability.

List the principles of health education, methods of communication and role of health education in rehabilitation services.

Define the role of community leaders and health professionals in health education.

Outline the role of international health agencies in rehabilitation of the disabled.

Identify and give first aid in burns, fire accidents, road accidents, poisoning, drowning, insect bites and trauma due to a foreign body.

Identify various fractures and practice bandaging and splinting in care of fractures.

Describe the types of wounds, haemorrhages, shock and respiratory emergencies.

Reference Books:

First Aid Manual: St John Ambulance

COURSE OUTCOME:

CO1 provide comprehensive health care to the people

CO2 deliver primary health care and essential services package

CO3 conduct epidemiological studies on common health problems

CO4 provide health care with appropriate attitudes

CO5 work as a member of health team, co-ordinate with national and international health organizations and national health programmes

CO	PO												PSO1	PSO2
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
CO1	2	1	3	3	3	3	3	3	3	2	3	2	2	3
CO2	3	1	2	3	2	2	3	2	2	3	2	2	2	3
CO3	2	3	2	1	-	3	2	3	2	1	2	-	3	2
CO4	3	3	3	3	3	3	-	1	3	2	3	3	1	3
CO5	3	3	2	3	2	3	2	2	2	3	2	3	2	2
AVE	2.6	2.2	2.4	2.6	2	2.8	2	2.2	2.4	2.2	2.4	2	2	2.6



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CLINICAL PSYCHOLOGY

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5608	CLINICAL PHYSIOLOGY	05	-	-	05	30	100	-	-	100	130

COURSE DESCRIPTION

The course aims to provide students with the bases in clinical physiology and associated methodology required to perform parts in placement training and at clinical physiological laboratories.

COURSE OBJECTIVES

To develop in depth knowledge on specific psychological factors and effects in physical illness and thus help them to have a holistic approach in their dealings with patients during admission, treatment, rehabilitation, and discharge

To develop exhaustive ideology of various Identify ego defense mechanisms and learn counseling techniques to help those in need. And help them to understand the reasons of non-compliance in patients and improve compliance behavior.

COURSE CONTENT

DEFINITION OF

PSYCHOLOGY

Basic information in relation to following schools methods and branches.

a. Schools: Structuralism, functionalism, behaviorism, psychoanalysis, gestalt psychology, Methods, Branches, heredity and environment c. developmental theories and growth behaviour at Infancy, Early childhood, Middle childhood, Puberty (physiological and psychological changes), adulthood, middle age, and old age.

intelligence, motivation Social motives, emotions Definition.


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b. personality: Definition, concepts, creativity, steps in creative thinking; problem solving, decision making, list the traits of creative people, delusions, frustration - Definition sources, solution, conflict; Approach - approach, avoidance-avoidance, and approach - avoidance, solution

DEFINITION OF CLINICAL PSYCHOLOGY: General and historical

introduction to Abnormal Psychology, Psychology in relation to medicine, different schools. Methods of Clinical Psychology: Case History method, Interview Techniques, Clinical observation, Situational tests, Questionnaires. Concepts of normality and abnormality: Causes of abnormality, Criteria for abnormality. Broad classification of Current model of abnormal behavior - Medical model, Psychodynamic model, Behavioristic model & Humanistic model, and Cognitive model Functional units of mind: Id, ego and super ego - their functions and interactions. Role of Defense mechanisms in normal and abnormal behavior. Evaluation of attention and concentration, perception, memory, thinking etc. Intelligence and Mental Retardation: Intelligence test - Measurement of intelligence - children & adults (demonstrations) Mental Retardation and its psychosocial management. Personality Assessment: Questionnaires, inventories, projective techniques Behavior techniques in Therapy - application of learning principles to modify behaviour. Counselling: Definition, Aim, Difference between counselling and guidance, principles in counselling, personality qualities of counsellors Psychotherapy: Basic Principles

HEALTH PSYCHOLOGY-Psychological reactions of a patient: reaction to loss, communications, compliance, emotional need geriatric psychology specific psychological reactions and needs of geriatric patients c. pediatric psychology - specific psychological reactions and needs of pediatric patients, . substance abuse -psychological aspects of substance abuse: smoking, alcoholism, and drug addiction. compliance -nature, factors contributing to non-compliance, methods of improving compliance. f. emotional needs g. geriatric psychology -specific psychological reactions and needs of geriatric patients. h. paediatric psychology - specific psychological reactions and needs of paediatric patients. k. substance abuse -psychological aspects of substance abuse: smoking, alcoholism, and drug addiction. l. personality styles -different personality styles of patients

Recommended Book(s) for Reference include:

1. Introduction to Psychology by Morgan and King
- 2 Psychology for Physiotherapists by Thangamani Ramalingam and Dibyendunaryan

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COURSE OUTCOME:

CO1. The student is expected on completion of the course independently be able to carry out a diagnostic ECG and a simple spirometry.

CO2. show active participation in work tests

CO3. with reasonable safety interpret the most common ECG and spirometry findings.

CO4. be able to apply safety and hygiene procedures at clinical physiological and nuclear medical work.


CO5. be able to orally and in writing present compiled results of completed studies.

CO	PO												PSO1	PSO2	PSO3
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12			
CO1	2	1	2	3	3	3	2	2	3	2	3	2	2	1	3
CO2	3	3	3	1	2	3	3	3	2	3	2	2	2	3	2
CO3	3	3	2	3	3	1	2	2	3	-	3	1	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	1	2	3	-	3
CO5	3	3	-	2	1	3	2	2	2	3	2	3	1	2	3
AVE	2.8	2.6	2	2.4	2.4	2.4	2.4	2.4	2.6	2.2	2.2	2	2.2	1.8	2.8


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**COPO MAPPING FOR B.Sc AHS PHYSICIAN ASSISTANT TECHNOLOGY
TECHNOLOGY(PROG.CODE-706)**

COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
5001	2	2.2	1.6	3	2	3	2	2.2	2.8	2.2	1.8	2.6	1.8	2.8	2.6
5002	2	2.2	2	2.4	2	2.8	2	2	2.8	2.2	2.2	2.6	1.6	2.8	2.6
5003	2.4	1.6	2	2.4	2	2.4	2	2	2.6	2.2	1.8	2.4	1.6	2.6	2.4
5004	2.4	1.6	2	2.4	2	3	2	2	2.8	2.8	2.2	2	2.2	2.8	2.6
5005	2	2.4	2.2	2.4	2.2	2.2	2.4	2.6	1.8	2.2	2.2	2.4	1.8	2.4	2.2
5006	2.2	2	2.2	2.6	2.4	2.2	2.2	2.4	2.4	2	2.2	2	2.6	2.6	2.4
5009	2.2	2.6	1.8	1.8	2.2	2.8	2.2	1.8	2.4	2	2.6	2.2	2.6	2.2	2.6
5010	2.2	2.6	2.6	2	2.4	2.4	2	1.8	2.4	2	2	2.2	2.4	2.6	2.2
5011	1.8	2.4	2.2	2.4	2.4	2.6	2	2	2	2.4	2	2.6	2	2.6	2.8
5601	2.2	2	2.2	2	1.8	2.8	2.2	2	2.2	2.2	2.8	2	2	2.2	2
5602	2	2.2	2	2	2.4	2.4	1.8	2.6	2.2	2.6	2	2.2	2.4	2.8	2.2
5603	2	2.8	1.8	2.6	2	2.6	1.8	2	2.6	2.6	2	2	2.2	2.4	2.4
5604	2.2	2	2	2.8	2	2.4	2	2	2.6	2.2	2.4	2.4	1.6	2.6	2.4
5605	2.2	2	2	2.8	2	2.4	2	2	2.6	2.2	2.4	2.4	1.6	2.6	2.4
5607	2.6	2.2	2.4	2.6	2	2.8	2	2.2	2.4	2.2	2.4	2	2	2.6	2.6
5608	2.8	2.6	2	2.4	2.4	2.4	2.4	2.4	2.6	2.2	2.2	2	2.2	1.8	2.8


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