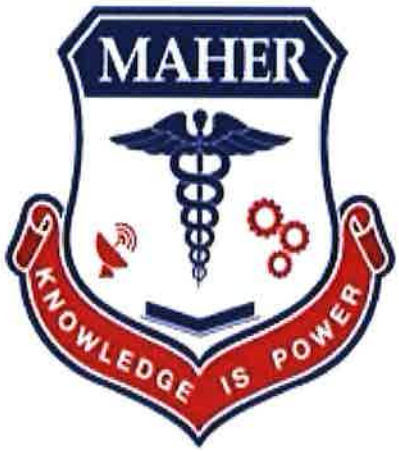
Meenakshi Academy of Higher Education & Research



BACHELOR OF ALLIED HEALTH SCIENCES
B.Sc AHS (CARDIO PULMONARY TECHNOLOGY)
REGULATIONS AND SYLLABUS

(Regulations-2014)
Effective from the Academic Year
2014-2015

Principal
Faculty of Allied Health Sciences
Meenakshi Academy of Higher
Education & Research
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 AHS(CARDIO PULMONARY TECHNOLOGY)

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 (CARDIO PULMONARY TECHNOLOGY)
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 and a trend setti constantly reviewing ever-growing demands of the medical community in Allied Health Scienc

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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MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH
FACULTY OF ALLIED HEALTH SCIENCES
PROGRAMME OBJECTIVES

Programme Objectives:

1. To impart necessary knowledge and training techniques in under graduate Allied Health Sciences courses and to maintain high standards of Allied Health Sciences education.
2. To offer theoretical and practical training in all the important Allied Health Sciences branches of health activity.
3. To attain self-sufficiency in under graduate Allied Health Sciences education to meet the States need of Allied Health Sciences personnel.
4. Providing knowledge and skill based training to create qualified and competent technical personnel in the discipline of Allied Health Sciences.
5. To develop the basic skills in the students that are necessary to monitor patients within a healthcare setting.
6. 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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FACULTY OF ALLIED HEALTH SCIENCES
PROGRAMME OUTCOME
CARDIOPULMONARY TECHNOLOGY

PO1: Academic Education
Gain proficiency in fundamentals of cardiopulmonary 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 cardiac 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 imagin 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 cardiopulmonary 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 cardiopulmonary 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

PO9: Environment and Sustainability
Obtain attitude toward products that are safe to the environment, is economically, environmentally and socially

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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 cardiopulmonary technology and apply these to ones own and teams work and also manage team based projects in real life environments, an 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 courses 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 ,
PSO4-Will have knowledge of elements of blood bank management ,materials management, supply chain management as well as lab information system management .

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MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH

BACHELOR OF ALLIED HEALTH SCIENCES

B.Sc AHS (CARDIOPULMONARY TECHNOLOGY)

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 makesthe following Regulations:

2. SHORT TITLE

These Regulations shall be called ''THE REGULATIONS FOR THE BACHELOROF 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 academicboard 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 ofstudy)
Or Intermediate examination of an Indian university/Board or other recognisedexamining body wi physics, chemistry, Biology and English.

6. CRITERIA FOR SELECTION

Students for B.Sc. Degree Programme (Allied Health Science) shall be admitted basedon 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

No candidate shall be admitted to the B.Sc. Degree programme (AHS) unless the

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candidate has obtained and produced eligibility candidate 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 prescribedfee:
Higher secondary or equivalent examination mark sheet and
Transfer certificate
Candidate should obtain eligibility certificate before the last date for admissionas 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	-	1st August to 31st July
Second Year B.Sc	-	1st September to 31st August
Third Year B.Sc	-	1st September to 31st August

12.CUT OFF DATES FOR ADMISSION TO EXAMINATIONS

The candidates admitted from 1st August to 30th September of the academic yearbe 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

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 thenecessary certificates of study and attendance from the institution.

b) A candidate is required to put in minimum of 80% of attendance in both andpractical / clinical separately in each subject before admission examination.

c) A candidate, who has not completed the programme in any subject and not submitted the course completion certificate from the head of the department willnot be permitted to appear for the particular subject alone. Candidate has got adequate attendance in other subjects he/she permitted to appear for

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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 submitto 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 theoryexaminations

In respect of failed candidates the marks awarded for records at previous examination will be carried over to the next examinations. If a candidate desireshe/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 15days prior to the commencement of the theory examination.

The head of the department and head of the institution should satisfy themselveson 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:

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 inwriting the reason for the ward's absence to the Head of the Institution

Any other leave the Head of the Institution deems reasonable for condonation50% of marks in internal assessment is compulsory for condonation of lack of attendance.

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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 shallbe 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 taken into consideration for award of international 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 twoexaminations, in theory and practical separately and the average may be considered improvement. If failed candidate do not appear for an improvementin 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 curse 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.

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.

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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 grantedas 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 tothe 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 anyground.

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 and 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.

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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 ineach of the paper

c) If a candidate fails either in theory and practical examination has to reappearfor both (theory and practical).

d) The candidate has to successfully complete the programme in 6 years (i.e.) doubleduration of the programme from the date of joining.

25.BRANCH OF STUDY

B.Sc Allied health sciences(cardiopulmonary technology)

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26.PATTERN OF EXAMINATION AND SUBJECTS OF STUDY

Scheme of examinationI[ST] 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 x2 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 x2 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 examinationII[nd] & III [rd] 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
	Practical			50	Marks
	Internal Assessment			30	Marks
	Viva – Voice			20	Marks
			Grand Total	200	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

28. Compulsory Rotatory Internship
All the candidates must undergo compulsory rotatory internship training for oneyear

29. Award of Degree

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

I YEAR B.Sc AHS CARDIO PULMONARY TECHNOLOGY(PROG.CODE-702)

PROGRAMME STRUCTURE

ourse ode	Course Name	Lecture Hrs/Week	Practical Hrs/Week	Internal Assessment (Ia)	Internal Examination	External Assessment (Ea) University Examination				Grand TotAl
					Theory	Theory	Viva	Practical	Total	
001	Anatomy	02	01	30	-	50	20	50	120	150
002	Physiology	02	01	30	-	50	20	50	120	150
003	Biochemistry	02	01	30	-	50	20	50	120	150
004	Pathology	02	01	30	-	50	20	50	120	150
)05	Microbiology	02	01	30	-	50	20	50	120	150
)06	Pharmacology	02	01	30	-	50	20	50	120	150
)09	Principles of Management	01	-	30	100	-	-	-	-	130
)10	Basics of Computer	01	-	30	100	-	-	-	-	130
)11	English	01	-	30	100	-	-	-	-	130

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CARDIO PULMONARY TECHNOLOGY
(Programme code -702)

IIND Year

S.no	Subject code	Subject	LECTURE hrs/week	TUTORIAL hrs/week	PRACTICAL hrs/week	Internal assessment	Internal Examination	University exam			T M s
							Theory	Theory	Practical (50)	Viva(20)	
	5301	Medical Outlines	05	-	-	30	-	100	-	-	
	5302	Introduction To Surgery And CSSD	05	-	-	30	-	100	-	-	
	5303	CardioVascular Diseases	05	-	03	30	-	100	50	30	

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III[rd] yr

S.no	Subjectcode	Subject	Lecture Hrs/Week	Tutorial Hrs/ Week	Practical Hrs\Week	Internal assessment	Internal Examination	University exam			T M
							Theory	Theory	Practical (50)	Viva (20)	
1	5304	ECG And Outlines OfNuclear Cardiology	05	-	-	30	-	100	-	-	
2	5305	Echocardiography	05	-	03	30	-	100	50	30	
3	5306	Intensive Coronary Care And Cardio Catheterization	05	-	03	30	-	100	50	30	
4	5307 5308	**ELECTIVES(select one)** Clinical Psychology Community	05 05	- -	- -	30 30	- -	100 100	- -	- -	1

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PAPER I – ANATOMY
SYLLABUS
Paper I – Anatomy

SYLLABUS

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs /wk	Total hours	IA	Theory	Viva	Practical	EA	Total
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 demonstrateknowledge in human anatomy for the study and practice of physiotherapy.
- To describe the various components of upper, lower extremity ,head and neckand thorax.
- In addition, the student will be able to fulfill with 75% accuracy (as measuredwritten 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 BriefEpithelium Connective tissueSalivary glands Bone
Cartilage Muscle

B) **Practicals**:
OsteologyBones :
Side Identification, Prominent features,Muscle attachment

I. Organs – Heart, Lungs, Liver, Spleen, Stomach, Kidney.
Histology
Epithelium – Simple squamous epitheliumSimple cuboidal epithelium
Simple columnar epitheliumTransitional epithelium Bone
Cartilage
Hyaline cartilage Elastic cartilage White fibro cartilageSalivary glands
Serous salivary gland Mucous salivary glandMixed salivary gland Muscles
Skeletal MuscleSmooth MuscleCardiac Muscle

Practical record compulsory for Osteology & HistologyTotal

Hours :		80
Theory	:	60
Practical	:	20

Prescribed Text Book
Manipal Manual of Anatomy for Allied Health Science Courses

Author	:	Sampath Madhyastha
Edition	:	Third
EditionPublishers	:	CBS

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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

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

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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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PS
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	2.

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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. Watsonand 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, DietaryFiber.

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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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 IV- PATHOLOGY

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	To
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 ofinflammation; 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 tractinfection; 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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	3	3	2	3	3	3	2	3	3	2	3	2	2	3	3
CO2	3	2	3	3	2	3	3	3	2	2	2	2	2	3	3
CO3	3	3	2	3	3	3	2	2	3	1	3	0	3	2	2
CO4	0	2	3	2	3	3	1	2	3	2	2	2	3	2	1
CO5	2	3	3	2	1	1	2	2	2	3	2	3	3	2	3
AVE	2.2	2.6	2.6	2.6	2.4	2.6	2	1.8	2.6	2	2.4	1.8	2.6	2.4	2.4

COURSECODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5005	MICROBIOLOGY	02	-	01	03	30	50	20	50	120	150

PAPER V – MICROBIOLOGY

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

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GENERAL MICROBIOLOGY	History of Microbiology, Microscopy, and Staining Techniques, Bacterial Anatomy, Culture medium &Techniques, Sterilization & Disinfection, Infection control Measures, Antimicrobial susceptibility testing &Drug resistance
IMMUNOLOGY	Immunity & types, Immune response, Antigen &Antibody / immunoglobulin, Antigen antibody interactions, Hypersensitivity Autoimmunity &Immune deficiency disorders, tumor & transplantation, Immunology
SYSTEMIC BACTERIOLOGY	Staphylococcus, Steptococcus, Pneumococcus Neisseria, Corynebacterium, Clostridium, Mycobacterium, Enterobacteraceae, 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, Ascanasis
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

:O	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
:O1	2	1	3	3	3	3	3	3	3	2	3	2	2	3	3
:O2	3	1	2	3	2	2	3	2	2	3	2	2	2	3	2
:O3	2	3	2	1	0	3	2	3	2	1	2	0	3	2	3
:O4	3	3	3	3	3	3	0	1	3	2	3	3	1	3	2
:O5	3	3	2	3	2	3	2	2	2	3	2	3	2	2	3
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	2.6

PAPER VI - PHARMACOLOGY

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

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, antiucholinergics
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 Pharmacologicalk 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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO
CO 1	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

PAPER VII- PRINCIPLES OF MANAGEMENT

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ 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 orstrategic 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 andY 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, Middles managers and supervisors planningand 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 orientationand train coaching and counseling disciplining complaints and grieventermination 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 shortterm financing – intermedi financing long term financing leasing as a source offinance C and security management –inventory management divided policy valuation of shares financial management in a hospital third pa 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.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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
AVE	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

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PAPER VIII- BASICS OF COMPUTER

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ 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/0 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 sheetsPreparing new slides using MS- POWERPOINT Inserting slides – transition andanimation 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, introductionto "c" language, different variables, declaration usage writing small programme using function sub-functions
PRACTICAL

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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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

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PAPER IX –ENGLISH

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs/ wk	Total hours	IA	Theory	Viva	Practical	EA	Total
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 incommunication 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 readDrawing conclusion finding and analysis
Explaining:- How to explain clearly defining and giving reasons Explainingdifferences Explaining procedure giving directions
Writing business letters:- how to construct correct Formal language Addresssalutation Body conclusion
Report Writing:-Reporting an accident reporting when happened at a sessionReporting 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 anduse nuances of presentation effectively

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	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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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BSC- Cardio Pulmonary Technology — II YEAR
PAPER I - MEDICINE OUTLINES

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Tot
5301	**MEDICINE OUTLINES**	05	-	-	05	30	100	-	-	100	13

COURSE DESCRIPTION

The Goal of teaching Medicine outline is to focuses 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

I. Nutritional diseases - Mal nutrition & obesity, Vitamin deficiencies

II. Oncology & Haematology - Cancer genetics, Cell biology of Cancer, Neoplasm of Lung, Breast Carcinomas

III. Disorder of haemoporesis - Anaemias, Iron deficiency anaemia, Megaloblastic anaemia, Haemolytic anaemia, Aplastic anaemia, Polycythaemia, Leukaemias, Acute Chronic

IV. Infection diseases - Sepsis and Septic Stock , Fever of Unknown Origin, Infective Endocarditis, Infections of Skin, Muscle , Soft tissue, Infection Control in Hospital, Diseases caused by bacteria, Viruses, Mycobacterium, Fungi and Protozoa, Helminthes, Common secondary infection in HIV

V. Diseases of CVS - Congenital RHD, Rheumatic fever, CAD, Peripheral Vascular diseases

VI. Respiratory System-Asthma,Pneumonia,TB, CA, Lung, Corpulmonale

VII. Kidney and Urinary tract - Acute renal failure, Glomerulonephritis, Haemodialysis, Transplant and Urinary tract infection

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VIII. Gastro intestinal tract - Peptic ulcer disease, Ileus, Intestinal Obstruction

IX. Liver and biliary tract disease - Viral hepatitis, Alcoholism

X. Endocrinology and metabolism - Diabetes mellitus, Hypo and Hyperparathyroidisl

XI. Neurologic disorders - Cerebro Vascular accidents, Meningitis, Traumatic injuries

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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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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BSC- Cardio Pulmonary Technology-II YEAR
PAPER II-INTRODUCTION TO SURGERY AND CSSD

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs /wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5302	**INTRODUCTION TO SURGERY AND CSSD**	05	-	-	05	30	100	-	-	100	130

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

I. History of Surgery
II. Role of the Surgeon
III. Importance of team Work and anticipating the needs of Surgeons
IV. Stresses that may arise during Operative Procedure
V. Surgical terminology
VI. Types of incision and indications for the use of Particular incision
VII. Haemorrhage Signs and Symptoms of internal and external
VIII. Classification and Management
IX. Identification of types of tourniquets reasons for use and duration of application dangers of use
X. Wounds — types, Process of healing, treatment and Complications
XI. Inflammation
XII. Wound infections - Causes and treatment
XIII. Incision and drainage of abscesses
XIV. Importances of Personal Cleanliness and aseptic techniques

XV. Pre-operative and Post-operative Care of the Surgical Patient

XVI. Emergency Procedures

XVII. Endotracheal intubation

XVIII. Tracheostomy

XIX. Major Symptoms of Presentation in adults

XX. Equipments used in wards

XXI. Common Terms used in Cardiology

XXII. Commonly used drugs and their action

XXIII. XXIII. Checking vitals — Pulse, BP, Respiratory rate

XXIV. XXIV. Establishing an IV line and Venepuncture

XXV. XXV. Sterile techniques and Surgical aspects :- Preparation of neckline sets,cut down sets, etc, Knowledge of surgical aspsis, skin preparation for invasive Procedures

CSSD PROCEDURES

COURSE CONENT

I. The development of CSSD
II. The growth of CSSD
III. Aim and Objectives of CSSD
IV. CSSD work Practice, return of equipment and initial Processing: - Waste disposal Collection of used items from user area, reception Protective Clothing and Disinfections safe guards, use of disinfectants Sorting and Classification of equipment for Cleaning Purpose, Sharps, blunt Lighted, etc. Contaminated high risk baby care. Delicate instruments or hot care instruments, cleaning Process, Use of detergents Mechanical cleaning apparatus,Cleaning instruments, Cleaning jars,recevers bowls,etc, trays, basins and similar hand Ware utensils.Cleaning of catheters and tubings, cleaning glass ware, Cleaning Syringes and needles,Drying inspection of instruments and needles instruments lubrication

V. Assembly and Packaging — Materials used for Wrapping and Packing assembling pack .Contents,Types of Packs prepared Inclusion of trays and galliparts in packs Method of Wrapping and making use of indicatios to show that a pack of tontine: has been throught a sterilization process date stampling

VI Sterilization Process- General Obseravations Principles of sterilization. Moist heat Sterilization . Dry heat sterilization EO gas sterilization H202 gas Plasma vapo Sterilization

- Moist heal sterilization mechanism of biocardial action. Loading of sterilizer.Sterilization process unloading of sterilizer. Tests for efficiency of sterilization.Tests for pre Vacuum Porous Load Sterilizers.
- Dry heat Sterilization.Open system and closed System of dry heat sterilization. Paching and Sterlization process.
- Sterlization by gaseous chemicals. Physical and chemical Properties of EO and H202 Plasma vapour absorption by natural and synthetic materials, toxicity, mechanism of biocidal action. Sterilization by 100% Ethylene oxide gas testing efficiency of Sterilization.

- Sterlization by Ironizing radiation units or terms. Mechanism of Biocidal action.Pharmaceuticals and biological Products, Industrial materials.

- Aseptic filtration of liquids and air liquids-Types of filters depth of filters, membrances of filters, testing efficiency of filtration. Integrating test application of membrance filtration. Pressure and vacuum filtration.Integrity test application of membrance filters. Pharmaceutical biological materials microbiological culture media. Sterility test . Aspetic filtraction of air fibrous depth filters. Mechansim of filtration. Granular carbon filtration fibrous (paper0 sheet filtration. Efficiency of HEPA filtration, Disinifection of used filters.

- Chemical disinfection. Alcohols aldehydes, Cholorapexidine,chlorine compounds, idophers phenols,Strong oxidizing agents. Chlorine dioxide. Peractic acid. Peroxigen biocide hydrogen peroxide.

VII. Principles of chemical disinfection- Mechanism of microbiocidal action. Factors affecting in use effectiveness Number of organisms present. Conditions of growth. Concentration of disinfectant temperature, Temperature contract time presence of organic matter, surface of content Cellolous and synthetic materials contaminated disinfectants concentration. Bactericidate test. Test organisms Policy for disinifection in hospitals Disinfection of hospital equipment Disinifection of hospital environment Disinfection of skin and mucous membrance Administration of disinifection policy selection of disinfection . Types of Products

VIII. Issue and collection techniques- Responsibilities of user department.Responsibility of CSSD equipment used for collection and issue .Techniques of collection and issue

IX. Infection control- Infection, cross infection control Hospital policy manual regarding decontamination of articules , rooms, etc Fumigation Procedures

COURSE OUTCOME:

CO1: To understand basic technical skills in managing the process for surgical instrumentation sterilization, inventory control and supply chain management, and information technology as it relates to the sterile processing environment.

CO2: To understand the work independently in a team of central sterile processing technicians who are collaborating to maintain sterilization and storage.

CO3:To acquire critical thinking skills as a basis for clinical judgment and

anticipatory decision making when managing all tasks related to sterile processing.
CO4: To understand, classify and learn the procedures, practices and measures in general surgeries in OT.
CO5: To understand and evaluate the best practices in CSSD, Stores and inventory management.

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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 III

COURSE CONTENT - CARDIOVASCULAR DISEASES

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5303	CARDIOVASCULAR DISEASES	05	-	03	08	30	100	20	50	170	200

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

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

COURSE CONTENT

1. ESSENTIAL ANATOMY , PHYSIOLOGY AND EMBRYOLOGY OF THE HEART
2. SYMPTOMS OF HEART DISEASE
3. EXAMINATION OF THE CARDIOVASCULAR SYSTEM
   1. General examination
   2. The arterial Pulse
   3. The blood pressure
   4. Jugular venous pressure
   5. Examination of the Precardium
4. CARDIAC INVESTGATIONS
5. THERAPEUTIC PROCEDURES
6. CARDIAC ARRYTHMIAS
   1.Sinus node function
   2.Brady cardias and heart block
   3.Supraventricular tachy cardiac
   4.Ventricular tachyarrhythmias

5.Long-term management of cardio tachyarrhythmias

7. HEART FAILURE
   1.Clinical syndromes of heart failure
   2.Treatment of heart failure
   3.Acute heart failure
8. CORONARY ARTERY DISEASE
   1.Angina
   2.Acute coronary syndromes
9. VALVULAR HEART DISEASE
   1. Mitral valve
   2. Mitral stenosis
   3. Mitral regurgitation
   4. Aortic stenosis
   5. Aortic regurgitation
   6. Tricuspid stenosis
   7. Tricuspid regurgitation
   8. Pulmonary stenosis
   9. Pulmonary regurgitation
   10. Prosthetic valves
10. INFECTIVE ENDOCARDITIS
11. CONGENTIAL HEART DISEASE
12. MARFAN S SYNDROME
13. PULMONARY HEART DISEASE
14. MYOCARDIAL AND ENDOCARDIAL DISEASES
   1. Artial myxoma
   2. Myocardial disease
   3. Cardiomyopathy
15. PERICADIAL DISEASE
16. SYSTEM1C HYPERTENSION
17. PERPHERAL VASCULAR DISEASE
   1. Peripheral arterial disease
   2. Peripheral venous disease

COURSE OUTCOME:

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: Obtain knowledge on adult and congenital heart diseases, rheumatic heart diseases, myopathies and conduction abnormalities
CO5: Analyze depth of disease state and criteria for investigations

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	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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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III YEAR
PAPER - I ECG AND OUTLINE OF NULEAR CARDIOLOGY COURSE CONTENTS

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5304	**ECG AND OUTLINE OF NULEAR CARDIOLOGY COURSE CONTENTS**	05	-	-	**05**	**30**	**100**	-	-	**100**	**130**

COURSE DESCRIPTION

It is a course that focuses on the process of diagnosing, treating and identifying the causes of heart-related disorders. Students learn about common problems such as coronary artery disease, heart defects, heart failure and valvular heart disease.

COURSE OBJECTIVES

1: Demonstrate clinical skills of medical history and physical examination, with specific attention to acute and chronic cardiovascular diseases.

2: Demonstrate clinical skill in the diagnosis and management of the Non-ACS chest pain patients.

3: Demonstrate clinical skill in medical management of patients admitted with cardiovascular disease.

4: Discuss the issues of lost effectiveness on the care of cardiovascular patients.

COURSE CONTENT

1.The History And Development of Electrocardiography

2.Anatomy of the Electrocardiogram

3.Electrical Axis, position and Rotation of the Heart

4.Chamber Enlargements

5.Bundle Branch Blocks and Fascicular Blocks

6.Heart Block

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7.Ischemic Heart Disease

8.Arrhythmias

9.Drugs and Electrolytes

10.Congenital Heart Disease

11.The Magic of ECG

12.Artifacts in ECG

13.Treadmill Test Outline of Nuclear Cardiology

COURSE OUTCOME:

CO1: Obtain knowledge on the principles of electrocardiogram

CO2: Perform ECG /TMT /Holter

CO3: Recognize the significance of the diagnostic techniques and its uses in cardiomyopathies and coronary artery diseases

CO4: Perform the 2D techniques and the working principle of Echocardiography

CO5: Gain knowledge about the instrumentation of echocardiography and electrocardiography

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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 - II ECHO CARDIOGRAPHY

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5305	**ECHO CARDIOGRAPHY**	05	-	**03**	**08**	**30**	**100**	**20**	**50**	**170**	**200**

COURSE DESCRIPTION

Understanding cardiac anatomy, cardiac hemodynamics and various pathophysiology, Knowledge of principles and instrumentation of ultrasound & the equipment

COURSE OBJECTIVES

1. Acquisition of echo images and learning how to do measurements
2. Interpretation of normal and abnormal echo findings and ability to integrate them with
3. patient history and physical examination

COURSE CONTENT

1. Basics
2. Echocardiographic Examination
3. Mitral Value
4. Aortic Value
5. Aortic Value
6. Trieuspid and pulmonary values and pulmonary Hyper tension.
7. Prosthetic values
8. Left Ventricle
9. Ischemic Heart Disease
10. Cardio Myopathies.
11. Paricardial Disorders
12. Cardiac Tumors and Masses
13. Congential Heart Disease

COURSE OUTCOME:

CO1: Demonstrate the ability to perform diagnostic quality sonographic examinationsCO2: Recognise and interpret the ECG at the risk of cardiovascularemergencies

CO2: Recognize and respond in a timely manner to echocardiographic findings that require adjustment in imaging, notification and/or emergency protocols

CO3: Demonstrate proper routine scanning techniques on normal subjects.

CO4: Describe the features of a normal echocardiogram.
CO5: Demonstrate appropriate scan ergonomics and patient care and positioning.

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 1	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	0	3	2	3	2	3	3	3	1	1	3	2	2	3	3
CO4	2	3	0	2	3	0	2	3	0	3	3	3	0	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 III

INTENSIVE CORONARY CARE AND CARDIAC CATHETERIZATION

CORONARY CARE UNIT

COURSE CODE	Course name	L hrs/ wk	T hrs/ wk	P hrs /wk	Total hours	IA	Theory	Viva	Practical	EA	Total
306	INTENSIVE CORONARY CARE AND CARDIAC CATHETERIZATION CORONARY CARE UNIT	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

Anatomy and physiology are studied in detail with emphasis on myocardial contraction, electrophysiology, control mechanisms of the heart and cardiac output.

COURSE OBJECTIVES

1. Take a complete medical history and perform a careful and accurate physical examination with a cardiology focus.

2. Ability to recognize the physical findings of chronic congestive heart failure, acute pulmonary edema, mitral regurgitation, mitral stenosis, aortic stenosis, aortic regurgitation, and tricuspid regurgitation
3. Ability to formulate comprehensive and accurate problem lists, differential diagnoses and plans of management for patients with acute cardiac illness.
4. Ability to perform and recognize major abnormalities of cardiac stress tests, cardiac Echo and coronary angiograms.

COURSE CONTENT

Importance of CCU - Physical setup
Type of Patient admitted
Equipments -principle and working
Cardio Pulmonary Resusitation BCLS, ACLS
Emergency Drugs
Admission of Patients - emergency from Cath Lab / from Casualty / criteria
Assisting Doctors or Staff in Basic Procedures
Usage Of Central Monitor/ventilators/suction Etc .,
Intensive Care
Monitoring and Diagnostic Procedures in
ICU. Central Venous Access.ECG Monitoring. Invasive Hemodynamic Monitoring. Cardiac Arrhythmia Recognition
General Care of Patient in ICU.EYE, GI Tract and Bladder System. Care of Mechanically Ventilated Patient. Tracheostomy. Humidification. Vascular Line. Arterial Line. Venous Line. Radiography. Chest Physiotheraphy
Intensive Care Management of Myocardial Infarction and Unstable Angina
Respiratory Failure. Oxygen Theraphy. Mechanical Ventilation
Recognition of Organ Failure-renal, Liver Repiratory, Encephalopathy

AMBULANCE SERVICE

Patient Transfer
Monitoring
Emergency Drugs and Equipment
Ventilation
Biotelemetry, Bio Feedback, Clinical Laboratory

Instruments, X Ray

CARDIAC CATHETERIZATION

- Requirements of Catheterizations
- Variopus Types of Catheters
- Equipments for Angiography and other materials required for Catheterization
- Preparation of Patient for Catheterization
- Technique of Arterial Puncture/venous Puncture
- Left Heart Catheterization
- Right Heart Catheterization
- Coronary Angiography, Renal Angiography

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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
AVE	2.4	1.6	2	2.4	2	3	2	2	2.8	2.8	2.2	2	2.2	2.8	2.6

- PTCA Procedure - coronary Angioplasty, Implantation of Stnts
- PTMC
- Device Closure of ASD/VSD/PDA
- Basic Components Of Bio-medical Instruments, Bio Electric Signal and Recording
- Electrodes, Transducers, Recording and Display Devices
- Patients Care and Monitoring Systems/cardiovascular Measurements, Blood Pressure, Blood Flow, Cardiac Output, Heart Sounds, etc
- Instrumentation for Respiratory Problem Pulmonary Function, Ventilation
- Non Invasive Diagnostic Measurements, Temperature, Ultrasonic Diagnosis, Cat Scan Techniques

COURSE OUTCOME:

CO1: Obtain knowledge of CathLab machineries and usage techniques

CO2: Recognize and interpret the disease in various views

CO3: Perform catheterization, sheath removal, other basic invasive techniques

CO4: Gain knowledge about indications, contraindications and complications of invasive and semi invasive techniques.

CO5: Obtain exhaustive ideology of basic hardwares in CathLab

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ELECTIVES (SELECT ONE)
COMMUNITY MEDICINE
FIRST AID

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	To
5307	COMMUNITY MEDICINE	05	-	-	05	30	100	-	-	100	13(

COURSE DESCRIPTION

The course deals with population or groups rather than individual patients. It is concerned with identification a 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 andenvironmental factors on the health of the individual and society.
To demonstrate an understanding of the principles of first aid and demonstrateskill 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 a diseases.
Outline the various measures of prevention and methods of interventionespecially for diseases with disability.
Outline the national care delivery system and the public health administrationsystem and the central and st level, local trends and resource.
Outline selected national health programmes including currentprogrammes (Eg.SSASarvaSikshaAbhiyan)
Define occupational health and list methods of prevention of occupationaldiseases and hazards.
Outline the Employees State Insurance scheme and its various benefits.
Describe the social security measures for protection from occupationalhazards, accidents, diseases, and the

workman's compensation act.
Outline the objectives and strategies of the national Family WelfareProgramme
Define community based and institution based rehabilitation. Describethe advantage and disadvantages of institution and community basedrehabilitation.
Describe the following communicable diseases with reference to reservoir, mode of transmission, route of entry and levels of prevention. a.
92Poliomyelitis, b. Meningitis, c. Encephalitis, d. Tuberculosis, e. Filariasis, f.Leprosy, g. Tetanus & h. Measles.
Describe the epidemiology of rheumatic heart disease, cancer, Chronicdegenerative 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 roleof 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 rehabilitationof 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 offractures.
Describe the types of wounds, haemorrhages, shock and respiratoryemergencies.

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

	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO
CO1	2	1	2	3	2	3	3	2	3	2	3	2	2	3	3

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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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CLINICAL PSYCHOLOGY

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5308	CLINICAL PSYCOLOGY	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 OBJECTIVE

To develop in depth knowledge on specific psychological factors and effects in physical illness and thus help them to have a holistic approaching theirdealings with patients during admission, treatment, rehabilitation, and discharge
To develop exhaustive ideology of various Identify ego defense mechanismsand learn counseling techniques to help those in need. And help them tounderstand 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.
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, andold age.
intelligence, motivation Social motives, emotions Definition.
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, Situationaltests, Questionnaires. Concepts of normality and abnormality: Causes ofabnormality, 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 it's 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 a 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, methodsof 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 abu -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 Dibyendunarayan Bid

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.

Principal
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	PO														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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

COPO MAPPING FOR B.Sc AHS CARDIOPULMONARY TECHNOLOGY (PROG.CODE-705)

COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
5001	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
5002	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
5003	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
5004	2.2	2.6	2.6	2.6	2.4	2.6	2	1.8	2.6	2	2.4	1.8	2.6	2.4	2.4
5005	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
5006	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
5009	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
5010	2.2	2	2.2	2	1.8	2.8	2.2	2	2.2	2.2	2.8	2	2	2.2	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
5301	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
5302	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
5303	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
5304	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
5305	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
5306	2.6	2	2.4	2.2	2.2	2.8	2	2.4	2.4	2.6	2.6	2.4	2.6	2.8	2.6
5307	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
5308	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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