

Meenakshi Academy of Higher Education & Research



BACHELOR OF ALLIED HEALTH SCIENCES B.Sc AHS (PERFUSION 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.

SL NO	TABLE OF CONTENTS	PG NO
I	Vision and Mission of Meenakshi Academy of Higher Education and Research	4
II	Vision and Mission of faculty of Allied Health Sciences	5
IV	Program Education Outcomes	6
V	Program Outcomes	7
VI	Program Specific Outcomes	8
VII	Regulations of the 2014	19-40
	1.Regulations Of The University	
	2.Short Title	
	3.Commencement	
	4.Title Of The Programme	
	5.Eligibility For Admission	
	6.Criteria For Selection	
	7.Age Limit For Admission	
	8.Eligibility Certificate	
	9.Registration	
	10.Duration Of The Programme	
	11.Commencement Of The Programme	
	12.Cut Off Dates For Admission To Examinations	
	13,Working Days In An Academic Year	
	14.Attendance Required For Admission To Examination	
	15.Submission Of Laboratory Record Note Book	
	16.Condonation Of Lack Of Attendance	
	17.Commencement Of Examinations	
	18.Revaluation Of Answer Scripts	
	19.Internal Assessment	
	20.Re-Admission After Break Of Study	
	21.Migration / Transfer Of Candidates	
	22.Marks Qualifying For A Pass	
	23.Classification Of Successful Candidates	
	24.Carry Over Of Failed Subjects	
	25.Branch Of Study	14
	26.Pattern Of Examination And Subjects Of Study	15-17
	27.Compulsory Rotatory Internship	40
	28.Programme Structure	41
VIII	Course Description (Subjects)	
	1. Applied Basic Sciences	19-40

	2. Cardio Pulmonary Technology — Ii Year Mapping Courses With Program Outcomes And Program Specific Outcomes	41-50
	3. Cardio Pulmonary Technology — III Year Mapping Courses With Program Outcomes And Program Specific Outcomes	51-61
	ELECTIVES	62-65
	1.Community Medicine	62-63
	2.Clinical Psycology	64-65
	4.Copo Mapping For B.Sc Ahs Cardiopulmonary Technology	66



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Education & Research
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**MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH
FACULTY OF ALLIED HEALTH SCIENCES
BACHELOR OF ALLIED HEALTH SCIENCES
B.Sc AHS (PERFUSION 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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B.Sc AHS(PERFUSION 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 setting constantly reviewing ever-growing demands of the medical community in Allied Health Science

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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MEENAKSHI ACADEMY OF HIGHER EDUCATION AND RESEARCH
FACULTY OF ALLIED HEALTH SCIENCES
PROGRAMME OUTCOME
(PERFUSION TECHNOLOGY)

PO1: Academic Education

Gain proficiency in fundamentals of perfusion 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 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 perfusion 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 perfusion 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 to improve clinical practices

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 perfusion technology and apply these to ones own and teams work and also manage team based projects in real life environments, and leading technological skills

PO12: Lifelong Learning

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

Programme Specific Outcome

PSO1-Students will understand physiology, pathology of heart and lung .

PSO2-Students will know mechanisms of working of equipments used to support or assume the function of the heart or lungs during medical procedures.

PSO3-Students will have skills to prepares and operates the heart-lung machine and other sophisticated equipment as directed by healthcare physicians.


Principal
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BACHELOR OF ALLIED HEALTH SCIENCES
B.Sc AHS (PERFUSION TECHNOLOGY)**

REGULATION-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

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


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Education & Research
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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 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 (Perfusion technology) 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.

12. 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 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 course 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:

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

11

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 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 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.
- 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 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.

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

BSc Allied health sciences Perfusion 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


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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 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
	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

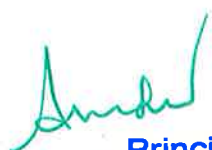
50% marks in the aggregate of written, oral, practical and internal assessment

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 PERFUSION TECHNOLOGY(PROG.CODE-705)
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	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
005	Microbiology	02	-	01	30		50	20	50	120	150
006	Pharmacology	02	-	01	30		50	20	50	120	150
009	Principles of Management	01	-	-	30	100	-	-	-	-	130
010	Basics of Computer	01	-	-	30	100	-	-	-	-	130
011	English	01	-	-	30	100	-	-	-	-	130


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 Chennai - 600 078.

PERFUSION TECHNOLOGY(Programme code-705)

IInd year

Course code	Subject	Lecture Hrs/Week	Tutorial Hrs/Year	Practical Hrs/Week	Internal assessment	Internal examination	University exam			Total Marks
							Theory	Theory	Practical (50)	
501	Medical Ethics	05	-	-	30	-	100	-	-	13
502	Medical Outlines	05	-	-	30	-	100	-	-	13
503	Principles Of Perfusion Technology – I	05	-	03	30	-	100	50	30	20


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III rd year

Sl. No	Subject	Lecture Hrs/Week	Tutorial Hrs/Year	Practical Hrs/Week	Internal assessment	Internal examination	University exam			Total Marks
							Theory	Practical (50)	Viva (20)	
504	Introduction To Surgery And CSSD	05	-	-	30	-	100	-	-	130
505	Cardiopulmonary Bypass Complication	05	-	-	30	-	100	50	20	200
506	Principles Of Perfusion Technology – II	05	-	03	30	-	100	50	20	200
507	ELECTIVES(select one) 1.Clinical Psychology	05	-	-	30	-	100	-	-	130
508	2.Community Medicine	05	-	-	30	-	100	-	-	130


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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 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

B) Practicals :

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

Programmes Author : Sampath Madhyastha



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Edition : Third
EditionPublishers : CBS

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

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	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	0	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 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

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

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 system
 CO5: Acquire knowledge on the geometry and conformations of biomolecules

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	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
AV E	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 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 disease; 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

CO	PO														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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
AV E	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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PAPER V – MICROBIOLOGY

COURS ECODE	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.



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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
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, 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, 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.

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


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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:

34

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

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



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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 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 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.

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

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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 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, introduction to “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

CO	PO												PS01	PS02	PS03
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012			
CO1	2	2	3	3	2	3	3	2	3	2	3	2	-	3	3
CO2	-	1	3	3	2	3	3	3	2	-	2	2	3	3	3
CO3	2	3	2	-	-	3	3	2	-	3	2	-	3	2	2
CO4	3	3	-	3	2	2	3	3	3	3	-	3	2	2	2
CO5	2	3	2	3	3	3	2	2	3	3	2	3	2	3	-
AVE	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.6	2



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PAPER IX -ENGLISH

COURSE CODE	Course name	L hr s/wk	T hr s/wk	P hr s/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



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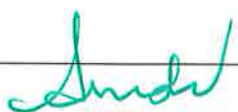
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078.

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 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
 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 and use nuances of presentation effectively

CO	PO												PSO1	PSO2	PSO3
	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012			
CO1	2	2	3	3	2	3	3	2	3	2	3	2	-	3	3
CO2	-	1	3	3	2	3	3	3	2	-	2	2	3	3	3
CO3	2	3	2	-	-	3	3	2	-	3	2	-	3	2	3
CO4	3	3	-	3	2	2	3	3	3	3	-	3	2	3	2
CO5	2	3	2	3	3	3	2	2	3	3	2	3	2	3	0
Ave	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.8	2.2


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B.Sc. (Perfusion Technology) – II Year

Paper - I Medical Ethics

COURSE CODE	Course name	Lhrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5501	MEDICAL ETHICS	05	-	-	05	30	100	-	-	100	130

COURSE DESCRIPTION

Becoming familiar with ethical principles, laws, regulations and standards in providing services related to anesthesiology.

COURSE OBJECTIVES:

- 1.The student will be able to explain the foundational principles of medical ethics through a careful examination of the essential features of the doctor-patient relationship.
- 2.The student will be able to explain the medical concept of capacity (and related legal concept of competence), and analyze the essential elements involved in the informed consent process, applying this to clinical case scenarios
- 3.The student will be able to assess the strengths and limitations of the most influential ethical theories, and describe the person-centered ethics model, applying this methodology to clinical case scenarios.

COURSE CONTENT:

Paper - I Medical Ethics

- I. Medical ethics: - Definition, Goal, Scope
- II. Code of conduct: - Introduction, Historical perspective
- III. Basic principles of medical ethics: - Definition, Various aspects, Beneficence, Non maleficence, Autonomy Justice, Confidentiality, Veracity

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- IV. Malpractice and negligence, Confidentiality, Rational and irrational drug therapy
- V. Autonomy and informed consent Right of patients
- VI. Care of the terminally ill: - Euthanasia
- VII. Research and human experimentation, alternate medicine
- VIII. Organ transplantation
- IX. Genetics
- X. Genetics - Right to life, Assisted reproductive technologies
- XI. Sex pre-selection - Female foeticide Abortion
- XII. Euthanasia Quality of life
- XIII. Health policy: - Distributive justice in health care and technology
- XIV. Commercialization of medical care
- XV. Medico legal aspects of medical records: - Medicolegal case and type Records and document related to MLC Ownership of medical records Confidentiality Privilege communication Release of medical information Unauthorized disclosure Retention of medical records Other various aspects
- XVI. Medico legal aspects in Indian context: - Indian evidence act Indian penal code Medical practice and consumer protection act

COURSE OUTCOME:

CO1: Professional standards are a way to provide some guidance on ethical problems, but they cannot address every issue, and they may not address troubling nuances, such as reconciling two conflicting values.

CO2: It also involves people skills, such as gathering the facts needed to make a decision and presenting your decision in a way that wins over the confidence of all parties.

CO3: Recognize the skills needed to act professionally after making the right choices.

CO4: Applying the knowledge and skills appropriately in a given situation.

CO5: Comprehend the basis of responsibilities especially relevant ethical principles that will enable you to make the right decisions.

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

PAPER II — MEDICINE OUTLINES

Course Code	Course Name	Lhrs/Wk	T Hrs/Wk	P Hrs/Wk	Total Hours	Ia	Theory	Viva	Practical	Ea	Total
5502	Medicine outline	05	-	-	05	30	100	-	-	100	130

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:

- 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 haemopoiesis: - Anaemias Iron deficiency anaemia Megaloblastic anaemia Haemolytic anaemia Aplastic anaemia Polycythaemia Leukaemias Acute chronic
- IV. Infections diseases: - Sepsis and septic shock Fever of unknown origin Infective endocarditis Infective of skin Muscle Soft tissue Infection control in hospital Diseases caused by bacteria Viruses Myobacterium 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
- VII. Kidney and Urinary tract: - Acute renal failure Glomerulonephritis
Haemodialysis Transplant Urinary tract infection
- 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 Hyper and Hypothyroidism
- 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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
01	3	3	2	3	3	3	2	2	3	2	3	2	2	3	3
02	3	3	3	2	2	3	3	3	2	3	2	2	2	3	2
03	3	2	1	3	3	1	2	2	3	3	3	1	3	3	2
4	-	3	-	3	1	3	-	1	3	2	-	2	3	-	3
05	1	3	3	2	1	3	2	2	2	3	2	3	1	3	2
/E	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 III
Principles of Perfusion Technology – I

Course Code	Course Name	Lhrs/Wk	T Hrs/Wk	P Hrs/Wk	Total Hours	La	Theory	Viva	Practical	Ea	Total
5503	Principles of Perfusion Technology – I	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

To study of physiology, pathology of heart and lung To study mechanisms of working of equipments used to support or assume the function of the heart or lungs during medical procedures To acquire skills to prepares and operates the heart-lung machine and other sophisticated equipment as directed by healthcare physicians.

COURSE OBJECTIVE

This course will cover common diseases and their causes. pertinent microbiology. ixithology of the system involved, outline of major signs and symptoms and management of the disease including medical and surgical intervention

This course will cover all aspects of instrumentation and patient preparation associated with perfusion technology

COURSE CONTENT

OUTLINES

- I. Congenital heart disease in the adult anatomie.
il abnormalities Obstruction Valvular regurgitation Surgical treatment
- II. Valvular heart disease: Congenital valvular heart disease Rheumatic valvulit
- III. Aortic valve disease Aortic stenosis 2 Aortie regurgitation
- IV. Mitral valve disease Mitral stenosis Mitral regurgitation Mitral valve prolapse Combined Val vular disease
- V. Coronary artery disease: Path^o physiology and clinical recognition Silent myocardial ischaemia Angina pectoris Symptomatic venous and



asymptomatic myocardial ischemia Thrombolytic therapy Medical treatment Other treatment modalities Surgical treatment Cardiac rehabilitation services

- VI. Myocardial diseases: Dilated cardiomyopathy Hypertrophic cardiomyopathy Restrictive cardiomyopathy Myocard is Heart failure Surgical and medical treatment
- VII. Pericardial disease
- VIII. Electrical disturbances of the heart:
Sinus node dysfunction Arrhythmias Surgical treatment
- IX. Pulmonary hypertension
Tumours of the heart
- X. Congenital heart disease in infancy and childhood Cyanotic congenital heart disease: - Tetralogy of fallot Pulmonary stenosis with atrial septal defect Transposition of great arteries Double outlet right ventricle Pulmonary atresia Total anomalous pulmonary venous connection
- XI. Acyanotic heart disease: - Septal defects. Atrial septal defects Ventricular septal defects Congenital valvular disease Patent ducts arteriosus Coarctation of aorta
- XII. Hypertension

C) COURSE CONTENT - PRINCIPLES

- I. Physiology of extra corporeal circulation
- II. Heart — Lung machine: - Principles of extra corporeal circulation
Materials used in EC circuit Principles of extracorporeal gas exchange
- III. Various types of oxygenators: - Bubble oxygenators Film oxygenators Rotating spiral oxygenators Rotating cylinder oxygenators Rotating disc oxygenators Membrane oxygenators
- IV. Theory of blood pumps: - Ideal blood pump, pulsatile versus continuous flow, occlusive and non occlusive pumps Various types of pumps Rotary pump, roller pump, bellow pump, compression pump, diaphragm pump, ventricle pump Intra aortic balloon pump
- V. Elements of extracorporeal circulation hidden hazards of: -
Blood filters Bubble trap Flow meters Temperature Heat exchanger Regulating devices
- VI. Connection of the vascular system with an extra corporeal circulation:-
Venous drainage Suction pump Haemodynamics of arterial re-entry, arterial infusion, cardiotomy blood return

COURSE OUTCOME

CO1: Students will understand physiology, pathology of heart and lung .
 Students will know mechanisms of working of equipments used to support
 or assume the function of the heart or lungs during medical procedures .

CO2: Students will have skills to prepares and operates the heart-lung
 machine and other sophisticated equipment as directed by healthcare
 physicians

CO3: The student shall have knowledge on basis non-invasive diagnostic
 and therapeutic international procedures related to operating the heart lung
 machines, ECHO cardiograph & intra-aortic balloon pump

CO4: Students will know about intra-opeartive monitoring and record
 keeping related to various machines CO5: Detailed knowledge in
 Inflammatory response to cardiopulmonary bypass.

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	-	1	2	3	3	3	3	3	2	3	3	-	2	3	2
CO3	2	3	2	3	-	3	2	2	3	3	2	3	3	2	3
CO4	3	3	-	3	2	3	2	3	3	3	-	3	2	3	-
CO5	2	3	2	3	3	3	-	2	3	3	2	3	2	3	3
AVE	1.8	2.2	1.6	3	2	3	2	2.4	2.8	2.8	2	2.2	2.2	2.8	2.2

**III Year
Paper I
Introduction to surgery & CSSD
COURSE CONTENT**

COURS E CODE	Course name	Lh rs/ wk	T hrs /wk	P hr s/ w k	Tota l hour s	IA	Theor y	Viva	Practica l	EA	Tota l
5504	Introduction to surgery & CSSD Introduction to Surgery	05	-	-	05	30	100	-	-	100	130

COURSE DESCRIPTION

Becoming familiar with specific techniques of anesthesia in specialty and subspecialty surgeries and with other diagnostic-therapeutic measures, and attaining the necessary ability to take good care of patients.

COURSE OBJECTIVES

1. Students become familiar with patient preparation and patient care methods for general or local anesthesia, with the use of different methods to make patients unconscious and bring them back to consciousness in specialty and subspecialty surgeries, and with other diagnostic-therapeutic measures.
2. They also gain the ability needed for taking good care of patients.

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 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. Importance 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. Checking vitals — pulse, BP, respiratory rate
- XXIV. Establishing an IV line and venepuncture
- XXV. Sterile techniques and surgical aspects: Preparation of neckline sets, cut down sets, etc. 7 Knowledge of surgical asepsis. skin preparation for invasive procedure

CSSD PROCEDURES

COURSE CONTENT

- 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 purposes, 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. receivers 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 pes of packs prepared Inclusion of tray and galli parts in packs Method of wrapping and making use of indications to show that a pack of container has been through a sterilization process date stamping
- VI. Sterilization process: - General observations principles of sterilization Moist heat sterilization Dry heat sterilization EO gas sterilization H2O2 gas plasma vapo sterilization
Most heal sterlization 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. Packing and loadinly, of sterilizer, sterilization process. Sterilization by gaseous chemicals. Physical and chemical properties of EO and H2O2 plasma vapour absorption by natural and synthetic materials, toxicity, mechanism of biocidal action. Sterlization by 100% Ethylene oxide gas testing efficiency of sterilization.

Sterilization by Ionizing radiation units or terms. Mechanism of Biocidal action, Sterilization does installation of cobalt 60, Controls of safety precaution. Product sterility test. Product release, Application of radiation sterilization of medical equipment, pharmaceuticals and biological products, Industrial materials.

Aseptic filtration of liquids and air liquids: Types of filters depth of filters, membrane of filters, testing efficiency of filtration, Integrating test application of membrane filtration, Pressure and vacuum filtration, Integrity test application of membrane filters. Pharmaceutical biological materials microbiological culture media. Sterility test, Aseptic filtration of air, fibrous depth filters. Mechanism of filtration, Granular carbon filtration fibrous (Paper) sheet filtration. Efficiency of HEPA filtration, Disinfection of used filters.

Chemical disinfection. Alcohols aldehydes, chlorapexidine, chlorine compounds. iodophers phenols, strong oxidizing agents. Chlorine dioxide. Peracetic acid. Peroxygen 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 contact time presence of organic matter, surface of contact Cellulose and synthetic materials, Contaminated disinfectants in the test, Evaluation of disinfectants, expression of disinfectant concentration, Bactericidal test, Test organisms Policy for disinfection in hospitals, Disinfection of hospital equipment, Disinfection of hospital environment, Disinfection of skin and mucous membrane, Administration of disinfection policy selection of disinfectants, 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

Infection control: - Infection, cross infection control Hospital policy manual regarding decontamination of articles, 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.

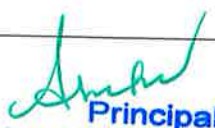
O2: To understand the work independently in a team of central sterile processing technicians who are collaborating to maintain sterilization and storage.

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

CO	PO												PS01	PS02	PS03
	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 – Cardio – Pulmonary Bypass Complications

COURSE CODE	Course name	Lhrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5505	Pulmonary Bypass Complications	05	-	03	08	30	100	20	50	170	200

A) COURSE DESCRIPTION

To teach them intraoperative monitoring, recognizing problems and do trouble shooting in case of machine malfunction

B) COURSE OBJECTIVES

1. Students will acquire skill to use heart lung machine
2. Students will be able to do intraoperative monitoring, recognizing problems and do trouble shooting in case of machine malfunction
3. Student will have knowledge of use of other diagnostic modalities like ECG, ECHO etc in cardiac surgery

C) COURSE CONTENT

- I. Complication while initiating the bypass, during bypass and at the termination of bypass
- II. Hemolysis / Haematuria / Hemoglobinurea
- III. Air locking, air embolism
- IV. Rewarming and cooling, cerebral damage.
- V. Loss of electrical power-running a pump with hand rotation
- VI. Investigations: - Routine — Haematological (their significance),

urine, Chest X-ray, Special - Endocrine, hormonal assays, echocardiography, angiography, liver function test, renal function test, others

VII. Sterile techniques and surgical asepsis: Preparation and assembling of circuits on heart lung machine Taking circuits from the surgeons, Assembling filters Knowledge of surgical asepsis, skin preparation for invasive procedures

VIII. Maintenance: - Proper cleaning, attending troubleshoot in time and periodical maintenance including cultures taken specific intervals from heart lung machine and hemotherm

COURSE CONTENT

CO1: Students will acquire skill to use heart lung machine .Students will be able to do intraoperative monitoring, recognizing problems and do trouble shooting in case of machine malfunction

CO2: Student will have knowledge of use of other diagnostic modalities like ECG, ECHO etc→ in cardiac surgery

CO3: Students will know intraoperative protocols for management of patients with other co morbidities

CO4: Students will know about logistic management and maintenance of variety of equipments

CO5: Detailed knowledge in Complications and safety during CPB.



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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	0	3	2	3	2	3	2	2	3	0	2	3	0	2	3
CO4	3	3	2	0	2	2	0	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

PAPER III
PRINCIPLES OF PERFUSION TECHNOLOGY — II

COURSE CODE	Course name	Lhrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5506	PRINCIPLES OF PERFUSION TECHNOLOGY — II	05	-	03	08	30	100	20	50	170	200

COURSE DESCRIPTION

Introduce students about various machines used during heart and lung surgery and know about intraoperative monitoring and record keeping related to various machines.

COURSE OBJECTIVES

1. To teach students about different cardiac surgeries, its indications and patient preparation To teach students steps of doing various cardiac surgeries
2. To teach students about intraoperative protocols for management of patients with other co morbidities
3. To teach students operation theatre environment, mannerism and functioning of various machines
4. To teach students about intraoperative monitoring and record keeping related to various machines

COURSE CONTENT

- I. Haemodynamic aspects of total heart — lung bypass: -
Perfusion flow pressure and resistance distribution of blood flow among various vascular beds
- II. Metabolic aspects of total heart — lung bypass: - Oxygen need and perfusion flow requirements
Perfusion flow and oxygen uptake Acid-base balance Electrolyte and water balance Oxygen toxicity
- III. Effects of perfusion on organs: - Brain, heart, lungs, kidney, liver and spleen area and other organs
- IV. Control of adequacy of perfusion: - The ideal perfusion Monitoring devices Techniques of control
- V. Hematological problems: - Blood prime Priming solutions Control of Effects of various priming solution on RBC trauma
- VI. Induced cardiac arrest and myocardial protection: Physiological principles of including cardiac arrest, morphology, function and metabolism of the arrested heart Cardioplegia — cold blood, potassium and modified cold prime cardioplegia
- VII. Hypothermia: Blood stream cooling nerves peripheral cooling modes of blood stream cooling

heart and circulation at low temperature

VIII. Assisted circulation: Circulatory support metabolic support by partial heart lung bypass Effects of partial heart lung bypass on organs

IX. Biomedicus pump

X. LV assist devices — LVAD, RVAD, BIVAD

XI. Intra-aortic balloon pump - IABP

XII. Autotransfusion, cell saver

COURSE CONTENT

CO1: Students will have knowledge about newer machines and technology used in cardiac surgery. Student will have knowledge of effective use of newer technology—

CO2: Students will know about different cardiac surgeries, its indications and patient preparation

CO3: Students will have knowledge about steps of doing various cardiac surgeries

CO4: Basic knowledge in ECMO and Contraindications to ECMO

CO5: Experimental perfusion

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	-	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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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	Total
55ss07	COMMUNITY MEDICINE	05	-	-	05	30	100	-	-	100	130

COURSE DESCRIPTION

The course deals with population or groups rather than individual patients. It is concerned with identification and 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.

92Poliomyelitis, 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


Principal
Faculty of Allied Health Sciences
Meenakshi Academy of Higher
Education & Research
Chennai - 600 078.

COURSE CODE	Course name	L hrs/wk	T hrs/wk	P hrs/wk	Total hours	IA	Theory	Viva	Practical	EA	Total
5508	CLINICAL PSYCHOLOGY	05	-	-	05	30	100	-	-	100	130

CLINICAL PSYCHOLOGY

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 approaching 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.

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	3	3	2	2	3	2	2	2	3	2
CO3	2	0	2	0	2	3	2	2	3	3	2	0	3	2	3
CO4	3	3	2	3	2	3	0	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

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.

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 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 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 Dibyendunarayan Bid



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

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

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

COURSE CODE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
5001	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
5002	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
5003	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
5004	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
5005	2.2	1.8	2	2.4	2.2	2.2	2	2.4	2.8	2.2	1.8	2	2.4	2.2	2
5006	2	2.4	2	2.4	2	2.8	2	2.2	2.2	2.2	2.4	1.8	2.2	2.8	2.8
5009	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.8	2.2
5010	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.6	2
5011	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.8	2.2
5501	1.8	2.4	2	2.4	1.8	2.8	2.8	2.4	2.2	2.2	1.8	2	2	2.8	2.2
5502	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
5503	1.8	2.2	1.6	3	2	3	2	2.4	2.8	2.8	2	2.2	2.2	2.8	2.2
5504	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
5505	2	2.2	2	2.4	2	2.8	2	2	2.8	2.2	2.2	2.6	1.8	2.8	2.6
5506	2.4	1.6	2	2.4	2	2.4	2	2	2.6	2.2	1.8	2.4	1.6	2.8	2.6
5507	2.4	1.6	2	2.4	2	3	2	2	2.8	2.8	2.2	2	2.2	2.8	2.6
5508	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