PONDICHERRY UNIVERSITY

DEGREE OF BACHELOR OF PHYSIOTHERAPY

[B.P.T.]

PROPOSED REGULATIONS AND SYLLABUS

(NEW REGULATION)

2008 Onwards

SYLLABUS AND REGULATIONS FOR B.P.T. COURSE

INDEX

AIM & OBJECTIVES OF THE COURSE

Aim

The course aims to prepare the candidates for professional autonomy and excellence in Physiotherapy practice. It aims to produce graduates with excellent communication skills who are to function as independent clinicians and as fully interactive members of the multi disciplinary health care team.

Objectives

- On completion of the 4½ years *Bachelor of Physiotherapy* program the graduate will be able to:
- Apply knowledge from physical, biological, medical and behavioural sciences, and physiotherapy to individuals and communities.
- Provide physical health care based on steps of physiotherapy process in collaboration with the individuals and groups.
- Demonstrate critical thinking skill in making decisions in all situations in order to provide quality care and therapy.
- Utilize the latest trends and technology in providing physical health care & rehabilitation measures.
- Practice within the code of ethics and professional conduct, and acceptable standards of physiotherapy practice within the legal boundaries.
- Communicate effectively with the individuals and groups, and members of the health and rehabilitation team in order to promote effective interpersonal relationships and teamwork.
- Demonstrate skills in teaching to individuals and groups in clinical/community settings.
- Participate effectively as members of the health [medical/ rehabilitative] team in health care delivery system.
- Conduct need based research studies in various settings and utilize the research findings to improve the quality care.
- Demonstrate awareness, interest, and contribute towards advancement of self and the profession.

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REGULATIONS

ELIGIBILITY FOR ADMISSION

- Candidates should have completed a minimum of 17 years of age as on 31st December of the year of admission.The upper age limit is 25 years. (Relaxable upto 5 years for SC/ST candidate and upto 3 years for MBC/OBC candidates.)
- Candidates should have a pass in the Higher Secondary Examination (academic) conducted by the Board of Higher Secondary Examination of Tamil Nadu, or any other equivalent examination accepted by the University, thereto with a minimum of 50% marks (40% for SC, ST, MBC, OBC candidates) in aggregate of the Science subjects (Physics, Chemistry, Biology/ Botany & Zoology) and should have English as one of the subjects.
- Candidate shall be medically fit to undergo the Physiotherapy course and Medical Fitness Certificate from a Government Hospital should be produced.
- Selection of the candidates should be based on the merit of the entrance examination held by the competent authority.

DURATION OF THE COURSE

The duration of the course shall be *four years* of full time study and *six months* of compulsory rotatory internship.

MEDIUM OF INSTRUCTION

English shall be the medium of instruction for all the subjects of study and for the examinations of the course.

COURSE OF STUDY

The course of study is shown in Table I.

The detailed syllabus in respect of the course is appended to this regulation.

REQUIREMENTS FOR EXAMINATIONS AND ATTENDANCE

Examination will be conducted in both theory and practical, as prescribed. Candidates will be permitted to appear for the University Examination in the subject only if they secure not less than 80% attendance (irrespective of the kind of absence) in each subject of that semester / academic year.

INTERNAL ASSESSMENT

Internal assessment will be done in each subject of study and the marks will be awarded to the candidates detailed in the scheme of examinations. The marks awarded will be on the basis of assessment made from the candidate’s performance in the

assignments, class tests, laboratory work, preparation and presentation of seminars and clinical cases. The marks secured by the candidate during each year in each subject shall be forwarded to the University at the end of the semester/academic year, i.e., before the commencement of the written examination.

EXAMINATIONS

The University Examinations will be conducted in the semester pattern for all the four years, each year consisting of two semesters.

The particulars of subjects for various examinations and distribution of marks are shown separately in the Table II.

The examination for the main subjects will be conducted by the University and for the non-examination subjects by the college.

The maximum number of candidates for practical examination should not exceed 20 per day. One internal and one external examiner should jointly conduct practical examination for each student. An examiner should be an Assistant Professor/ Lecturer or above in the college of Physiotherapy with minimum 3 years of teaching experience.

PASSING MINIMUM

A candidate should secure 40% of the marks in theory and 50% in practical (wherever prescribed) separately and 50% in aggregate in each paper, to be declared as pass in each paper. If a candidate fails in either theory or practical, he/she has to re-appear for both theory and practical.

A candidate shall secure 40% of total marks in the test conducted by the college for the non-examination subject.

PROCEDURE FOR PASSING THE COURSE

The maximum period to complete the course successfully should not exceed a period of eight years.

INTERNSHIP

There shall be a compulsory full-time rotatory internship after the candidate having passed all the subjects prescribed in the scheme of examination. The internship should be done for a period of six months, and not less than 180 days, in an Institution/ Hospital approved by the University. No candidate shall be eligible for the award of the degree without successfully completing the six months of internship.

The internship should be completed within one year from the date of commencement of internship, and should be started within two years after passing the final examinations.

The internship training areas related to Physiotherapy are mentioned in TableI.

ELIGIBILITY FOR THE DEGREE

The candidates shall be eligible for the Degree of Bachelor of Physiotherapy when they have undergone the prescribed course of study for a period of not less than four years in an institution approved by the University and have passed the prescribed examinations in all subjects and have completed a compulsory internship over a period of six months in an approved institution, after having passed the final examination.

DECLARATION OF CLASS

- A successful candidate obtaining 75% and more marks in the grand total aggregate in the first attempt shall be declared to have passed these subjects with *distinction*.
- A successful candidate obtaining 60% and more but less than 75% of the marks in the grand total aggregate in the first attempt shall be declared to have passed with *first class*.
- A successful candidate obtaining 50% and more but less than 60% of the marks in the grand total aggregate shall be declared to have passed these subjects with *second class*.
- Ranks shall be declared on the basis of the aggregate marks obtained by a candidate in the University examination subjects of the course. Only those candidates who have passed all the subjects in all examinations in the first attempt shall be eligible for the award of rank.

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COURSE STRUCTURE

Table–I COURSE OF STUDY

FIRST YEAR (1140 hours)

Sl. No.	Subjects	Theory (in hours)	Practical (in hours)	Total (in hours)
	I Semester			
1.	Physiotherapy Orientation	70	10	80
2.	Functional English	30	30	60
3.	Psychology (General & Health)	100	-	100
4.	Sociology	60	-	60
5.	Nutrition	40	-	40
6.	First-aid & Basic Nursing Procedures	40	40	80
7.	Physical Education	20	-	20
	Clinical orientation	-	-	100
	Total Hours			**540**
	II Semester			
8.	Anatomy	150	50	200
9.	Physiology	120	30	150
10.	Biochemistry	50	10	60
11.	Therapeutic Physics	70	-	70
12.	Computer & its applications	25	25	50
13.	Physical Education	-	20	20
14.	Co-curricular activities	-	10	10
	Clinical orientation	-	-	40
	Total Hours			**600**

SECOND YEAR (1200 hours)

Sl. No.	Subjects	Theory (in hours)	Practical (in hours)	Total (in hours)
III - Semester				
1.	Microbiology	35	15	50
2.	Pathology	60	10	70
3.	General Medicine	80	-	80
4.	General & Plastic Surgery	40	-	40
5.	Paediatrics	50	-	50
6.	Ophthalmology & Otorhinolaryngology	20	-	20
7.	Therapeutic Massage	40	60	100
8.	Allied therapeutics (Yoga)	10	30	40
9.	Physiotherapy ethics	20	-	20
10.	Physical Education	-	20	20
11.	Co-curricular activities	-	10	10
	Clinical Training	-	-	100
	Total Hours			**600**
IV – Semester				
12.	Exercise Therapy – I	80	85	165
13.	Electrotherapy – I	60	105	165
14.	Biomechanics & Kinesiology	100	-	100
15.	Pharmacology	50	-	50
16.	Physical Education	-	20	20
	Clinical Training	-	-	100
	Total Hours			**600**

THIRD YEAR (1200 hours)

Sl. No.	Subjects	Theory (in hours)	Practical (in hours)	Total (in hours)
V - Semester				
1.	Exercise Therapy – II	80	120	200
2.	Electrotherapy - II	80	120	200
3.	Community Health & Rehabilitation	50	30	80
4.	Physical Education	-	20	20
	Community Health Training	-	-	100
	Total Hours			**600**
VI – Semester				
6.	Orthopaedics & Traumatology	100	-	100
7.	Neurology & Neurosurgery	100	-	100
8.	Cardiology & Cardiac Surgery	30	-	30
9.	Thoracic Medicine & Surgery	50	-	50
10.	Critical Care	10	10	20
11.	Obstetrics & Gynaecology	30	-	30
12.	Radiodiagnosis	10	20	30
13.	Physical Education	-	20	20
14.	Co-curricular activities	-	20	20
	Clinical Training	-	-	200
	Total Hours			**600**

FOURTH YEAR (1200 hours)

Sl. No.	Subjects	Theory (in hours)	Practical (in hours)	Total (in hours)
	VII – Semester			
1.	Physiotherapy in Orthopaedics	60	60	120
2.	Physiotherapy in Neurology	60	60	120
3.	Physiotherapy in Cardio-respiratory conditions	60	60	120
4.	Research Methodology & Bio-statistics	30	-	30
5.	Co-curricular activities	-	10	10
	Clinical Training			200
	Total Hours			**600**
	VIII – Semester			
6.	Physiotherapy in Obstetrics & Gynaecology	20	20	40
7.	Clinical reasoning & evidence based practice	30	20	50
8.	Rehabilitation & Geriatric Medicine	80	20	100
9.	Sports Physiotherapy	20	20	40
10.	Veterinary Physiotherapy	10	10	20
11.	Principles of Management	20	-	20
12.	Education Technology	20	20	40
13.	Project work	-	150	150
14.	Co-curricular activities	-	20	20
	Clinical Training	-	-	120
	Total Hours			**600**

TABLE-I

INTERNSHIP

The candidates should undergo compulsory rotatory internship training in the following departments/specialties of Physiotherapy for the duration prescribed against each.

1. Physiotherapy & Rehabilitation	-	30 days
2. Orthopaedics	-	15 days
3. Neurology & Neurosurgery	-	15 days
4. Cardiology	-	15 days
5. Critical care units	-	15 days
6. General Medicine	-	15 days
7. General & Plastic Surgery	-	15 days
8. Obstetrics & Gynaecology	-	15 days
9. Paediatrics & Paediatric surgery	-	15 days
10. Community Physiotherapy	-	15 days
11. Elective (any one of the above, or Sports Physiotherapy)	-	15 days
		180 days

Table–II SCHEME OF EXAMINATIONS
First Year

SUBJECT	HOURS	INTERNAL	EXTERNAL	TOTAL
I Semester				
Theory				
1. Psychology & Sociology	3	25	75	100
II Semester				
Theory				
1. Anatomy	3	25	75	100
2. Physiology	3	25	75	100
Viva-voce				
1. Anatomy		25	25	50
2. Physiology		25	25	50

Second Year

SUBJECT	HOURS	INTERNAL	EXTERNAL	TOTAL
III Semester				
Theory				
1. General Medicine, Paediatrics and Surgery	3	25	75	100
2. Pathology & Microbiology	3	25	75	100
3. Therapeutic Massage	3	25	75	100
Practical & Viva-voce				
1. Therapeutic Massage		50	50	100
IV Semester				
Theory				
1. Exercise Therapy – I	3	25	75	100
2. Electrotherapy – I	3	25	75	100
3. Biomechanics & Kinesiology	3	25	75	100
Practical & Viva-voce				
1. Exercise Therapy – I		50	50	100
2. Electrotherapy – I		50	50	100

Third Year

SUBJECT	HOURS	INTERNAL	EXTERNAL	TOTAL
V Semester				
Theory				
1. Exercise Therapy - II	3	25	75	100
2. Electrotherapy – II	3	25	75	100
3. Community Health & Rehabilitation	3	25	75	100
Practical & Viva-voce				
1. Exercise Therapy – II		50	50	100
2. Electrotherapy – II		50	50	100
VI Semester				
Theory				
1. Orthopaedics & Traumatology	3	25	75	100
2. Neurology & Neurosurgery	3	25	75	100
3. Cardio-thoracic medicine & surgery	3	25	75	100
Viva-voce				
1. Orthopaedics & Traumatology		25	25	50
2. Neurology & Neurosurgery		25	25	50
3. Cardio-thoracic medicine & surgery		25	25	50

Fourth Year

SUBJECT	HOURS	INTERNAL	EXTERNAL	TOTAL
VII Semester				
Theory				
1. Physiotherapy in Orthopaedics	3	25	75	100
2. Physiotherapy in Neurology	3	25	75	100
3. Physiotherapy in Cardio-respiratory conditions	3	25	75	100
Practical & Viva-voce				
1. Physiotherapy in Orthopaedics		50	50	100
2. Physiotherapy in Neurology		50	50	100
3. Physiotherapy in Cardio-respiratory conditions		50	50	100

VIII Semester				
Theory				
1. Rehabilitation & Geriatric Medicine	3	25	75	100
Viva-voce				
1. Rehabilitation & Geriatric Medicine		25	25	50
2. Project study		50	50	100

SCHEME OF UNIVERSITY EXAMINATION

S.No	Subjects	UE Max.	UE Min.	IA Max.	IA Min.	Total Max.	Total Min.
Semester I							
1	Psychology and Sociology : (Theory + Internal)	75	30	25	-	50	100
Semester II							
2	Anatomy : Theory + (Internal + Viva - Voce)	75	30	75	-	75	150
3	Physiology: Theory + (Internal + Viva - Voce)	75	30	75	-	75	150
Semester III							
4	General Medicine, Paediatrics & Surgery(Theory + Internal)	75	30	25	-	50	100
5	Pathology & Microbiology (Theory +Internal)	75	30	25	-	50	100
6	Therapeutic Massage(Theory +Internal)	75	30	25	-	50	100
7	Therapeutic Massage (Practical & Viva – voce)	100	50	-	-	50	100
Semester IV							
8	Exercise Therapy - I (Theory + Internal)	75	30	25	-	50	100
9	Exercise Therapy – I (Practical & Viva – voce)	100	50	-	-	50	100
10	Electrotherapy – I (Theory + Internal)	75	30	25	-	50	100
11	Electrotherapy – I (Practical & Viva – voce)	100	50	-	-	50	100
12	Biomechanics & Kinesiology (Theory + Internal)	75	30	25	-	50	100
Semester V							
13	Exercise Therapy - II (Theory + Internal)	75	30	25	-	50	100
14	Exercise Therapy – II(Practical & Viva – voce)	100	50	-	-	50	100
15	Electrotherapy – II(Theory + Internal	75	30	25	-	50	100

16	Electrotherapy – II (Practical & Viva – voce)	100	50	-	-	50	100
17	Community Health & Rehabilitation	75	30	25	-	50	100
Semester VI							
18	Orthopaedics & Traumatology (Internal + Viva-voce)	75	30	75	-	75	150
19	Neurology & Neurosurgery (Internal + Viva -voce)	75	30	75	-	75	150
20	Cardio – Thoracic Medicine & Surgery (Internal + Viva-voce)	75	30	75	-	75	150
Semester VII							
21	Physiotherapy in Orthopaedics (Theory + Internal)	75	30	25	-	50	100
22	Physiotherapy in Orthopaedics (Practical & Viva – voce)	100	50	-	-	50	100
23	Physiotherapy in Neurology (Theory + Internal)	75	30	25	-	50	100
24	Physiotherapy in Neurology (Practical & Viva – voce)	100	50	-	-	50	100
25	Physiotherapy in Cardio respiratory conditions (Theory + Internal)	75	30	25	-	50	100
26	Physiotherapy in Cardio respiratory conditions (Practical & Viva – voce)	100	50	-	-	50	100
Semester VIII							
27	Rehabilitation & Geriatric Medicine: Theory + (Internal + Viva- Voce)	75	30	75	-	75	150
28	Project Study	50	-	50	-	50	100

PATTERN OF QUESTION PAPER

Maximum 3 hours Maximum75marks

Answer Section-A and Section-B separately.
Draw labeled diagrams wherever applicable.

SECTION – A

(40 Marks)

1. Essay question: (1 x 15 = 15)

(a)

or

(b)

2. Write short notes on any five of the following: (5 x 5 = 25)

(a)
(b)
(c)
(d)
(e)
(f)

SECTION – B

(35 Marks)

1. Essay question: (1 x 15 = 15)

(a)

or

(b)

2. Write short notes on any four of the following: (4 x 5 = 20)

(a)
(b)
(c)
(d)
(e)

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Note:

Paper	Section – A	Section – B
1. Psychology & Sociology	Psychology	Sociology
2. Medicine & Paediatrics, Surgery	Medicine & Paediatrics	Surgery
3. Pathology & Microbiology	Pathology	Microbiology

Except the above 3 papers, in all other papers the subjects will be covered in both sections.

DETAILED SYLLABUS

PHYSIOTHERAPY ORIENTATION

Placement – First Semester

Time: Theory – 70 hours
Practical – 10 hours

Course description: The course is designed to help the students to develop an understanding of the philosophy, objectives and process of physiotherapy in various clinical settings. It is aimed at helping the students to acquire knowledge, understanding and skills in physiotherapy techniques in clinical settings.

Unit	Time (Hrs)	Content	Teaching method
I	5	INTRODUCTION TO HEALTH Health and Health care delivery system	Lecture
II	35	INTRODUCTION TO HEALTH SCIENCE Overview of Health Science, Health Professions & their specialties	Lecture
III	10+5	PHYSIOTHERAPY PROFESSION History of Medical Therapeutics History of Physiotherapy Overview of impairment, disability, handicap Health – levels of prevention & Rehabilitation Physiotherapy in medical rehabilitation	Lecture, Demonstration
IV	10	PHYSIOTHERAPY IN MEETING HEALTH CARE NEEDS OF INDIA Needs versus demands Need for physiotherapy Scope of the profession Role of Physiotherapist in health care delivery system and prevention of disability	Lecture, Demonstration, Group discussions
V	10+5	PHYSIOTHERAPEUTIC METHODS Physical agents in therapy Exercise therapy Electrotherapy Specialties in physiotherapy Areas of physiotherapy services & training	Lecture Demonstration & Visit

FUNCTIONAL ENGLISH

Placement – First Semester

Time: Theory – 30 hours
Practical – 30 hours

Course description: The course is designed to enable to enhance ability to comprehend spoken and written English (and use English) required for effective communication in their professional work. Students will practice their skills in verbal and written English during clinical and classroom experiences.

Unit	Time (Hrs)	Content	Teaching method
I	2+2	INTRODUCTION Study techniques Logical processes of analysis and synthesis Use of dictionary Effective diction	Lecture, Demonstration & Exercises to students
II	5+5	APPLIED GRAMMAR Review of grammar & correct usage Building vocabulary Structure of sentences & paragraphs Phonetics Public speaking	Lecture, Demonstration, Conversation & Public speaking
III	6+6	FORMS OF COMPOSITION Letter writing Note taking Précis writing Essay writing Anecdotal records Diary writing Reports Resume / Curriculum vitae etc.	Demonstration & Exercises to students
IV	7+7	COMMUNICATION Oral report Discussion Lecture / seminar Debate Summary Telephonic conversation	Demonstration & Exercises to students
V	5+5	READING COMPREHENSION Selected materials, articles, magazines, journals etc.	Demonstration & Exercises to students
VI	5+5	LISTENING COMPREHENSION Media, Audio, Video, Speeches etc.	Demonstration & Exercises to students

PSYCHOLOGY

Placement – First Semester **Time:** Theory – 100 hours

Course description: The course is designed to assist the students to acquire knowledge of fundamentals of psychology and develop an insight into behaviour of self and others. Further it is aimed at helping them to practice the principles of understanding the mental status and behaviour of patients in clinical settings.

General Psychology – 60 hours Health Psychology – 40 hours

I - GENERAL PSYCHOLOGY

Unit	Time (Hrs)	Content	Teaching method
I	4	INTRODUCTION Definition Schools of Psychology Methods of Psychology Branches of Psychology	Lecture Discussion
II	4	HEREDITY AND ENVIRONMENT Twins Importance of heredity and environment Role in relation to physical characteristics Intelligence and personality Nature-nature controversy	Lecture Discussion
III	10	DEVELOPMENT AND GROWTH BEHAVIOUR Infancy, Childhood, Adolescence, Adulthood, Middle age, Old age.	Lecture Discussion
IV	3	INTELLIGENCE Definitions of Intelligence Quotient, Mental Age, List of various intelligence tests – WAIS, WISC, Bhatia's performance test, Raven's Progressive Matrices test.	Lecture Discussion
V	3	MOTIVATION Definitions of motive, drive, incentive and reinforcement, Basic information about primary needs: Hunger, Thirst, Sleep, Elimination activity, Air, Avoidance of pain, Attitude to sex. Psychological needs	Lecture Discussion
VI	3	EMOTIONS Definition, differentiate from feelings, physiological changes of emotion, role of RAS, hypothalamus, cerebral cortex, sympathetic nervous system, adrenal gland, heredity and emotion, Nature and control of anger, fear and anxiety.	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VII	6	PERSONALITY Definition List of components: Physical characteristics, character, abilities, temperament interest, attitudes. Role of heredity, nervous system, physical characteristics, abilities, family and culture on personality development. Basic concepts of Freud: Unconscious, conscious, Id, Ego and Superego. List and the define 8 stages as proposed by Erickson Concepts of learning as proposed by Dollard and Miller; drive, cue, response and reinforcement. Personality assessment Projective tests	Lecture Discussion
VIII	5	LEARNING Definition Types of learning Effective ways to learn Role of language in learning	Lecture Discussion
IX	3	THINKING Definition & creativity Creativity: Steps, traits Delusions	Lecture Discussion
X	3	FRUSTRATION Definition, sources and solution. Conflicts	Lecture Discussion
XI	5	SENSATION, ATTENTION & PERCEPTION Senses: various senses and their functions Attention: Definition, factors determining attention Perception: Definition, principles. Illusion & hallucination: types	Lecture Discussion
XII	3	LEADERSHIP Qualities and types of leadership Attitude and its changes	Lecture Discussion
XIII	3	DEFENCE MACHANISMS Defence Mechanisms of the ego List of various defence mechanisms	Lecture Discussion
XIV	5	COMMUNITY PSYCHOLOGY • Social psychology • Community Psychology	Lecture Discussion

II - HEALTH PSYCHOLOGY

Unit	Time (Hrs)	Content	Teaching method
I	2	PSYCHOLOGICAL REACTIONS OF A PATIENT Various Psychological reactions of a patient during admission in hospital and treatment.	Lecture Discussion
II	2	REACTIONS TO LOSS Reactions to loss, death and bereavement Stages of acceptance	Lecture Discussion
III	4	STRESS Physiological and psychological changes during stress Relations to health and sickness Relaxation methods	Lecture Discussion
IV	5	COMMUNICATIONS Types of communication Elements in communications, barriers to good communications Developing effective communication, specific communication techniques	Lecture Discussion
V	8	COUNSELLING Definition and aims Guidance and counselling Principles in counseling Personality of counsellors	Lecture Discussion
VI	3	COMPLIANCE Nature of compliance Factors contributing to non-compliance Means to improve compliance	Lecture Discussion
VII	6	EMOTIONAL NEEDS • Emotional needs and psychological factors in relation to unconscious patients, handicapped persons, bed-ridden patients, patients with chronical patients, cerebral palsy children, burns, leprosy, Parkinson's disease, incontinence and mental illness.	Lecture Discussion
VIII	10	MISCELLANEOUS • Geriatric psychology • Paediatric psychology • Behaviour modification in patients • Personality styles of patients • Substance abuse	Lecture Discussion

SOCIOLOGY

Placement – First Semester **Time:** Theory – 60 hours

Course description: The course is designed to introduce the basics of sociological concepts, principles and social process, social institutions in relation to individual, family and community in India and its relationship with health, illness and handicap.

Unit	Time (Hrs)	Content	Teaching method
I	4	INTRODUCTION Definition Sociology – a science of society Application of sociology in physiotherapy	Lecture Discussion
II	8	SOCIOLOGY AND HEALTH Social factors affecting health status Social consciousness and meaning of illness Perception of illness Decision making in taking treatment Institutions of health and their role in the improvement of health of the people	Lecture Discussion
III	8	SOCIALISATION Meaning of socialisation Influence of social factors on personality Socialisation in hospitals Socialisation in rehabilitation of patients	Lecture Discussion
IV	3	SOCIAL GROUPS Concept of social group Influence of formal and informal groups on health on health and sickness Role of primary and secondary groups in the hospital and rehabilitation settings.	Lecture Discussion
V	7	FAMILY & COMMUNITY Influence of family on human personality Changes in the functions of a family Influence of the family on the individual's health, family and nutrition Effects of sickness on family, family and psychosomatic disease Concept of community Role of rural and urban communities in public health Role of community in determining beliefs, practices and home remedies in treatment	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VI	8	CULTURE & CASTE SYSTEM Components of culture Impact of culture on human behaviour Cultural meaning & response of sickness, Choice of treatment Culture induced symptoms and disease Sub-culture of medical workers Caste system: Features of modern caste system & its trends	Lecture Discussion
VII	3	SOCIAL CHANGE Meaning of social change Factors of social change on human adaption, stress, deviance and health programmes Role of social planning in the improvement of health and rehabilitation.	Lecture Discussion
VIII	4	SOCIAL CONTROL Meaning of social control Role of norms Folkways, customs, morals, religion, law and other means of social control in the regulation of human behaviour. Social deviance and disease.	Lecture discussion
IX	12	SOCIAL PROBLEMS OF THE DISABLED Consequences of the following social problems in relation to sickness and disability. Remedies to prevent the following problems: Population explosion, poverty and employment, beggary, juvenile delinquency, prostitution, alcoholism, problems of women in employment.	Lecture Discussion
X	2	SOCIAL SECURITY Social security and social legislation in relation to the disabled.	Lecture Discussion
XI	1	SOCIAL WORKER Role of a medical social worker	Lecture Discussion

NUTRITION

Placement – First Semester **Time:** Theory – 40 hours

Course description: The course is designed to assist the students to acquire knowledge of nutrition for maintenance of optimum health and its application for different ages, activities in metabolic disorders.

Unit	Time (Hrs)	Content	Teaching method
I	5	FOOD & NUTRITION Introduction Nutrition: Concepts & various aspects Role of nutrition in healthy body National nutritional policy Food: Role in nutritional & medicinal values Elements of nutrition: Macro & micro nutrients Calorie & Basal Metabolic Rate	Lecture Discussion
II	13	CARBOHYDRATES, PROTEINS, FATS Classification & caloric value Recommended daily allowance Dietary sources Functions Digestion, Absorption & Storage Malnutrition: Deficiencies & Over consumption	Lecture Discussion
III	4	WATER & ELECTROLYTES Water: Daily requirement, sources, regulation of water metabolism Electrolytes: Types, sources, composition of body fluids	Lecture Discussion
IV	8	VITAMINS & MINERALS Classification Recommended daily allowance Dietary sources Functions Absorption and storage Deficiencies & Hypervitaminosis	Lecture Discussion
V	5	ENERGY Requirements of different categories of people Measurement of energy Body Mass Index and basic metabolism Basal Metabolic Rate – determination and factors affecting it	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VI	5	BALANCED DIET Concept Recommended Daily Allowance Nutritive value of foods Planning balanced diets for different categories of people Budgeting of food	Lecture Discussion

FIRST-AID AND BASIC NURSING PROCEDURES

Placement – First Semester **Time:** Theory – 40 hours
Practical- 40 hours

Course description: The course is designed to enable to have a better understanding and develop skill in giving first aid in emergencies in either the hospital or the community, and, to acquire knowledge about the basic nursing procedures in their professional work.

First aid – 50 hours Basic nursing procedures – 30 hours

FIRST AID

Unit	Time (Hrs)	Content	Teaching method
I	18	INTRODUCTION TO FIRST AID Definition Aims of first aid Principles of first aid Golden ru10les of first aid Qualities & tasks of first aider First aid supplies & kit Concept of emergency	Lecture & Demonstration
II	5	HANDLING THE EMERGENCY Identifying the hazards Triage & Action plan Call for help	Lecture & Demonstration
III	8	STEPS IN FIRST AID Airway, Breathing, Circulation & Resuscitation Call for medical assistance Reassurance of the victim Transportation	Lecture & Demonstration
IV	14	FIRST AID IN EMERGENCIES Haemorrhage & Dressings Wounds & bleeding Vertebral injuries Burns, scalds Fractures & dislocations, Joint & muscle injuries Head injuries Epilepsy Poisoning, bites & stings Hypothermia, heat stroke, frost bite Foreign bodies in eye, ear, nose, throat First aid in Disasters	Lecture & Demonstration
V	5	TRANSPORTATION OF THE VICTIM Standard stretchers Various types of lifting & carrying Ambulances	Lecture & Demonstration

BASIC NURSING PROCEDURES

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION TO NURSING Concept of Nursing and its principles Interpersonal relationships	Lecture, Demonstration & Exercises to students
II	8	COMFORT MEASURES / NEEDS Safety Measures Bed making Different positions: prone, lateral, recumbent, Flower's position, etc. Bandaging: Basic turns, various methods and their application, applied to extremities Aids in positioning Rest and sleep	Lecture, Demonstration & Practice by students
III	6	LIFTING AND TRANSPORTING PATIENTS Lifting patients up in the bed Transfer techniques from bed to wheel chair, stretcher, floor/mat etc.	Demonstration & Practice by students
IV	6	ELIMINATORY NEEDS Giving and taking bed pan Observation of urine, stools, sputum etc. Use and care of catheters Enaema giving	Demonstration & Exercises to students
V	4	NUTRITIONAL NEEDS Feeding methods Transfusion methods	Demonstration & Exercises to students
VI	2	CARE OF RUBBER GOODS Simple aseptic techniques Sterilisation and disinfection	Demonstration & Exercises to students
VII	2	VITAL SIGNS Various vital signs Observation/monitoring, reporting and recording of vital signs	Demonstration & Exercises to students

PHYSICAL EDUCATION

Placement – First Semester

Time: Theory – 20 hours
Practicals *****

Course description: The purpose of the course is to acquire knowledge and understand various components in physical fitness and training methods.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION Physical fitness	Lecture Discussion
II	8	TRAINING METHODS Definition Motor component Warming up Conditioning Cool down	Lecture Discussion & Demonstration.
III	10	PHYSICAL FITNESS & TRAINING Physical Fitness And Training of Motor components: Strength Speed Endurance Mobility Co-ordination	Lecture Discussion & Demonstration.

*** Practicals –** 100 hours [I year – 20 hours; II & III years – 40 hours each]

ANATOMY

Placement – Second Semester **Time:** Theory –150hours
Practical –50 hours

Course description: The course is designed to enable the students to acquire knowledge of normal structure of various human body systems particularly on musculoskeletal, nervous and cardio-pulmonary systems and understand their application in the practice of physiotherapy.

I - GENERAL & SYSTEMIC ANATOMY [70 HOURS]

Unit	Time (Hrs)	Content	Teaching method
I	6	INTRODUCTION TO ANATOMICAL TERMS Definitions, subdivisions, systems of the body Cell: Structure, composition, function, cell division Tissues: Definition, types, characteristics, classification, location, functions Genes and chromosomes	Lecture Demonstration
II	8	CARDIO VASCULAR SYSTEM Structure of heart, blood vessels Blood and nervous supply of the heart Major blood vessels	Lecture Demonstration
III	2	LYMPHATIC SYSTEM Structure of Lymphatic organs and vessels Functional roles	Lecture Demonstration
IV	8	RESPIRATORY SYSTEM Structure of the organs of the respiratory system Muscles of respiration, tracheobronchial tree, bronchopulmonary segments	Lecture Demonstration
V	5	DIGESTIVE SYSTEM Structure of the alimentary tract and organs of digestive system Anatomy of the liver and pancreas	Lecture Demonstration
VI	3	GENITO-URINARY SYSTEM Structure of the organs of the genito-urinary system	Lecture Demonstration
VII	3	ENDOCRINE SYSTEM Structure of endocrine glands	Lecture Demonstration
VIII	20	NERVOUS SYSTEM Division of the nervous system and their organs Structure and functions of nerve cell. Structure of brain, spinal cord and peripheral nerves (in detail) Structure & location of autonomic nervous system	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
IX	5	OSTEOLOGY Definition and types of skeletal system Classification of bones Ossification: definition, types and process	Lecture Discussion, Demonstration
X	5	ARTHROLOGY Definition and classification of joint Functions of joints: mobility & stability	Lecture Discussion, Demonstration
XI	5	MYOLOGY Structure and types of muscles Skeletal muscles: classification, forms & groups Position, origin, insertion, nerve supply and action of skeletal muscles	Lecture Discussion, Demonstration

II - REGIONAL ANATOMY [130 HOURS]

Unit	Time (Hrs)	Content	Teaching method
XII	45	UPPER EXTREMITY Osteology, arthrology, myology of the following: Pectoral region Scapular region Axilla Shoulder girdle and arm Elbow and forearm Wrist and hand Nerves of upper limb Blood vessels of upper limb	Lecture Demonstration
XIII	50	LOWER EXTREMITY Osteology, arthrology, myology of the following: Pelvic & gluteal region Hip & thigh region Knee & leg Ankle & foot Nerves & Blood vessels of lower limb	Lecture Demonstration
XIV	20	TRUNK Osteology, Arthrology, myology and their relations of: Vertebral Column Thoracic cage Abdomen Pelvis	Lecture Demonstration
XV	15	HEAD & NECK Musculoskeletal and neurovascular features of neck and cranium Cranial nerves	Lecture Demonstration

PHYSIOLOGY

Placement – Second Semester **Time:** Theory – 120 hours
Practical –30 hours

Course description: The course is designed to assist the students to acquire knowledge of normal physiology of various human body systems and understand the alterations in physiology in diseases for physiotherapy practice.

Unit	Time (Hrs)	Content	Teaching method
I	4	CELL PHYSIOLOGY Cell: Structure & functions of components Functions of membranes & glands	Lecture
II	20	CIRCULATORY SYSTEM Blood: Component and their functions, blood groups, coagulation, blood volume and its regulation Functions and regulations of the heart, cardiac cycle, cardiac output, E.C.G., heart sounds. Blood pressure: Maintenance and regulation. Effects of exercises on postural changes.	Lecture Discussion, Demonstration
III	20	RESPIRATORY SYSTEM Functions of the respiratory organs Physiology of respiration Pulmonary ventilation, volume Mechanics of respiration Gaseous exchange in lungs Regulation of respiration Effects of exercises on respiration	Lecture Discussion, Demonstration
IV	8	DIGESTIVE SYSTEM Functions of organs of digestive tract Movements of the alimentary tract Digestion in mouth, stomach, intestines Absorption of food Metabolism of carbohydrates, proteins and fat	Lecture Discussion, Demonstration
V	8	EXCRETORY SYSTEM Functions of organs of excretory tract Composition of urine Mechanism of urine formation & Micturition Functions of skin	Lecture Discussion, Demonstration
VI	8	ENDOCRINE SYSTEM Functions of the various endocrine glands Endocrine Hormones: Functions and their abnormalities.	Lecture Discussion, Demonstration

Unit	Time (Hrs)	Content	Teaching method
VII	8	REPRODUCTIVE SYSTEM Functions of male reproductive system Functions of female reproductive system Outline of pregnancy, parturition, lactation Contraceptive measures Physiology of foetal growth	Lecture Discussion, Demonstration
VIII	20	NERVOUS SYSTEM • Properties and functions of Neuron • Mechanism of Stimulus and nerve impulse • Functions of brain, spinal cord, cranial and spinal nerves. • Synaptic transmission, reflexes, control of postures and voluntary motor activity. • Autonomic Nervous System	Lecture Discussion, Demonstration
IX	4	SENSORY ORGANS Functions of the skin, eye, ear, nose and tongue	Lecture Discussion, Demonstration
X	20	MUSCULAR SYSTEM Microscopic structure of muscle tissue, myoneural junction Physiology of Muscle contraction Exercise metabolism Muscular activity based on metabolism and fatigue Physiological changes on aging Exercise physiology	Lecture Discussion, Demonstration
XI	30	APPLIED PHYSIOLOGY • Heart and circulation: Normal ECG, blood pressure, cardiovascular compensation for postural and gravitational changes, determinants of cardiac performance. • Neuromuscular system: Degeneration and re-generation of nerves, control of posture and voluntary movement, neuromuscular transmission, electrical phenomenon. • Respiratory system: Normal breath sound, volume and compliance, effects of exercise on respiration, artificial respiration.	Lecture Discussion, Demonstration

BIOCHEMISTRY

Placement – Second Semester **Time:** Theory – 50 hours
Practical –10 hours

Course description: The course is designed to assist the students to acquire knowledge of normal biochemical composition and functioning of the body and understand the alterations in biochemistry of diseases for physiotherapy practice.

Unit	Time (Hrs)	Content	Teaching method
I	6	INTRODUCTION Definition Cell: Structure, composition & function Cell membrane: Transport mechanisms Acid-base & Electrolytes balance – Maintenance & Diagnostic tests	Lecture Discussion
II	8+2	CARBOHYDRATES Types, structure, composition & uses Metabolism of carbohydrates Investigations & interpretations	Lecture Discussion, Demonstration of blood glucose monitoring
III	8+2	LIPIDS Types, structure, composition & uses Metabolism of fatty acid & cholesterol Lipoproteins & their functions Investigations & interpretations	Lecture Discussion, Demonstration of lab tests
IV	8+2	PROTEINS Types, structure, composition & uses of amino acid & proteins Metabolism of amino acids & proteins, Nitrogen Enzymes & co-enzymes: Classification, properties Investigations & interpretations	Lecture Discussion, Demonstration of lab tests
V	12+2	VITAMINS & MINERALS Structure, classification, Properties, absorption, storage& transportation, normal concentration Investigations & interpretations	Lecture Discussion, Demonstration of lab tests
VI	8+2	IMMUNOCHEMISTRY Immune response & immunoglobins Mechanism of antibody production Antigens: HLA typing Free radicals & antioxidants ELISA & other investigations & interpretations Miscellaneous: Blood gas analysis	Lecture Discussion, Demonstration of lab tests

THERAPEUTIC PHYSICS

Placement – Second Semester **Time:** Theory – 70 hours

Course Description: The course is designed to enable the students to acquire knowledge of physics related to therapeutic modalities and apply this knowledge in the physiotherapy practices.

Unit	Time (Hrs)	Content	Teaching method
I	2	ELECTRICITY Definition and types Therapeutic uses Basic physics of construction • Working • Importance of currents in treatment	Lecture Discussion & Demonstration
II	7	STATIC ELECTRICITY Production of electric charge Characteristics of a charged body Characteristics of lines of forces Potential energy and factors on which it depends. Potential difference and E.M.F.	Lecture Discussion & Demonstration.
III	10	CURRENT ELECTICITY Units of electricity. Resistance: in series & in parallel Ohm's law and its application to DC & AC currents. Potentiometer: Construction and working. Fuse: Construction, working and application. Transmission of electrical energy through solids, liquids, gases and vacuum Chemical effects of current	Lecture Discussion & Demonstration
IV	6	DIRECT CURRENT Definition Chemical effects Polar effects Dangers of direct current: shock, safety precautions & management	Lecture Discussion & Demonstration
V	7	CONDENSORS Principles Measurement Factors Construction & working and types Fields between condensers Charging and discharging Discharge through inductance & capacitive resistance Uses	Lecture Discussion & Demonstration

Unit	Time (Hrs)	Content	Teaching method
VI	6	ALTERNATING CURRENT Faradism Surged Faradism	Lecture Discussion & Demonstration
VII	5	MAGNETISM Nature – Molecular Theory Properties Magnetic effect of an electric current Electromagnetic induction Transmission by conduct Magnetic field and magnetic forces	Lecture Discussion & Demonstration.
VIII	2	MOVING COIL MILLIAMMETER Construction and working Uses	Lecture Discussion & Demonstration.
IX	2	VOLTMETER Construction and working Uses	Lecture Discussion & Demonstration
X	3	TRANSFORMER Definition Types Principle Construction & Working Eddy current Uses	Lecture Discussion & Demonstration
XI	2	CHOKES Principles Construction and working Uses	Lecture Discussion & Demonstration
XII	3	THERMIONIC VALVES (ELECTRIC VALVES) Types: Diode, Triode, Double anode diode Principles of Thermionic valves Construction and working of different valves. Uses	Lecture Discussion & Demonstration
XIII	3	METAL VALVE RECTIFIERS Definition Construction Working Uses	Lecture Discussion & Demonstration

Unit	Time (Hrs)	Content	Teaching method
XIV	1	GRID Diagram and working Uses	Lecture Discussion & Demonstration
XV	5	OSCILLATING SYSTEM Definition Properties of oscillating system High frequency current as oscillating system Capacitance and inductance – Influence on oscillating system. Transfer of energy between two oscillating systems.	Lecture Discussion & Demonstration.
XVI	2	ELECTRO MAGNETIC WAVES Definition Electromagnetic spectrum – Production and its properties	Lecture Discussion & Demonstration
XVII	1	LASER • Definition • Types • Production and principle	Lecture Discussion & Demonstration
XVIII	3	ACTINOTHERAPY Define heat and temperature Physical effects of heat Transmission of heat Sources of therapeutic heat Radiant energy and its properties Laws governing radiation	Lecture Discussion & Demonstration

COMPUTER AND ITS APPLICATIONS

Placement – Second Semester

Time: Theory – 25 hours
Practical – 25 hours

Course description: This course is designed for students to develop basic knowledge of fundamentals of computer and its application in Physiotherapy.

Unit	Time (Hrs)	Content	Teaching method
I	5	INTRODUCTION TO COMPUTERS Concepts & features of computer Application areas of computers in health services Hardware and software	Lecture
II	3+2	HARDWARE Architecture of computers Types of storage devices Characteristics of disks, terminals, printers, network etc. Disk operating system: DOS, Windows Applications of networking concepts	Lecture Discussion
III	2+3	SOFTWARE Classification of software Application of software Operating system, computer system Computer virus: Precautions & dealing	Lecture Demonstration
IV	5+15	PROGRAMMES MS – Word MS – Excel with pictorial presentations MS – Access MS – PowerPoint	Lecture Demonstration & Practicals
V	10+5	COMPUTER APPLICATIONS Multimedia: Types & uses Computer aided teaching & testing Use of internet: web pages & e-mail Principles in scientific research: Work processing, Health care systems, libraries, education, information system Application in Physiotherapy: E.M.G., Biofeedback, Exercise testing equipments, Spirometry, etc.	Visit, Demonstration & Discussion

MICROBIOLOGY

Placement – Third Semester **Time:** Theory - 35 hours
Practical - 15 hours

Course description: The course is designed to enable the students to acquire an understanding of fundamentals of microbiology. It also provides an opportunity for practicing infection control measures in the hospital and community settings.

Unit	Time (Hrs)	Content	Teaching method
I	3+1	INTRODUCTION • History of microbiology-(contribution of Louis Pasteur, Robert Koch, Joseph Lister, Edward Jeener, Alexander Fleming) • Importance of Microbiology in the practice of Physiotherapy • Microscope –Types & Uses	Lecture Discussion, Demonstration,
II	10+6	GENERAL CHARACTERISTICS OF MICROBES Structure and classification of Bacteria Morphological forms of Bacteria Growth & nutrition of Bacteria Laboratory methods for identification of Bacteria Staining techniques: Gram staining, Acid fast staining, Hanging drop preparation Cultivation of Bacteria and Antibiotic sensitivity tests Morphological features and pathogenesis of Spirochetes, Mycoplasma, Rickettsiae and Chlamydia. General properties of Viruses. General properties of fungi Out line of Amoebiasis, Malaria, Giardiasis, infection with Roundworm, Hookworm, Pinworm, Filarial worm, Tapeworm. Arthropods and Medical importance of-Mosquitoes, Ticks, Fleas, Cyclops.	Lecture Discussion, Demonstration
III	6+4	INFECTION CONTROL • Infection: Sources, portals of entry and exit, mode of transmission • Asepsis • Disinfection: Types and methods • Sterilisation: Types and methods • Chemotherapy and antibiotics • Standard safety measures • Biomedical waste management • Hospital acquired infection • Hospital infection control programme	Lecture Discussion, Demonstration, Visit CSSD.

Unit	Time (Hrs)	Content	Teaching method
V	6+2	IMMUNITY • Immunity: Types, classification • Antigen and antibody reaction • Hypersensitivity – skin test • Serological tests • Immunoprophylaxis • Vaccines & sera: Types, classification, storage and handling, cold chain. • Immunisation for various diseases • Immunisation schedule	Lecture Discussion, Demonstration.
VI	6+2	PATHOGENIC MICRO ORGANISMS (Aetiology, pathogenesis, laboratory diagnosis, and prevention of:) • Respiratory tract infections • Tuberculosis • Hansen's disease • Meningitis • Enteric infections • Urinary tract infections • Wound infections • Sexually transmitted diseases	Lecture Discussion, Demonstration.
VII	4	MISCELLANEOUS • Infection of Candidacies, Cryptococcy, Dermatophytoses, Mycetema, Aspergillosis. • Viral infections: Hepatitis, Poliomyelitis, HIV, rabies, etc.	Lecture Discussion.

References:

1. Anantha Narayanan and Jayaram paniker-TEXT BOOK OF MICROBIOLOGY.

2. MEDICAL MICROBIOLOGY by Mims, Playfair, Roitt, -wakelin; Williams

PATHOLOGY

Placement – Third Semester

Time: Theory –60 hours
Practical-10 hours

Course description: The course is designed to enable the students to acquire knowledge of pathology of various disease conditions and helps to understand the limitation imposed by the diseases on the physiotherapy practices.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION Concept of disease Classification of disease	Lecture Discussion,
II	3+2	CONCEPTS OF Inflammation and repair Degeneration Necrosis Gangrenes	Lecture Discussion, Slide Demonstration.
III	3+2	TUMOURS Concept about tumour Aetiology Spread of tumour Classification Benign versus malignant	Lecture Discussion, Slide Demonstration.
IV	6	FLUID AND HAEMODYNAMIC DERANGEMENTS Ischaemia Oedema Thrombosis Embolism Aneurysm Haemorrhage Shock	Lecture Discussion,.
V	3	VITAMIN DEFICIENCY DISEASES Vitamin - B_{12} Vitamin - C Vitamin – D	Lecture Discussion,.
VI	7+2	RESPIRATORY DISEASES Pneumonia Bronchitis Bronchiectasis Asthma Emphysema Tuberculosis Lung cancers Occupational lung diseases	Lecture Discussion, Slide Demonstration,.

Unit	Time (Hrs)	Content	Teaching method
VII	6	CARDIOVASCULAR SYSTEM Rheumatic heart diseases Ischaemic Heart Disease Heart Failure Congenital heart diseases	Lecture Discussion
VIII	5	ALIMENTARY SYSTEM Peptic ulcer Carcinoma of stomach Ulcerative lesions of intestine Liver-Hepatitis, Cirrhosis & Hepatoma Pancreas - Pancreatitis, Carcinoma of Pancreas Typhoid	Lecture Discussion
IX	7+1	NERVOUS SYSTEM(CENTRAL AND PERIPHERAL) Meningitis Encephalitis Tumours Peripheral Nerve Lesions Vascular Disorders Parkinsonism Multiple Sclerosis Motor Neuron Disorders Polyneuritis Poliomyelitis Neuropathy Syringomyelia	Lecture Discussion
X	9	Musculo-Skeletal System Osteomyelitis Osteoarthritis Septic Arthritis Gout Rheumatic Arthritis BoneTumours Myositis Myopathy Fracture Healing Osteoporosis	Lecture Discussion
XI	2	SKIN Leprosy Psoriasis Ulcers	Lecture Discussion
XII	2	URINARY SYSTEM Nephrotic syndrome Nephritis	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
XIII	1+1	BLOOD Anaemia	Lecture Discussion,
XIV	3+2	INFECTION Bacterial Viral Parasitic	Lecture Discussion,
XV	1	CHROMOSOMAL ABNORMALITIES Down's Syndrome Haemophilia	Lecture Discussion

References:

1.Textbook of Pathology by Harse Mohan 6th Edition

2. General and Systemic Pathology by Underwood.

GENERAL MEDICINE

Placement – Third Semester **Time:** Theory – 80 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	10	INFECTIONS Mode of spread and preventive measures of the following diseases: Bacteria - Tetanus Viral - Herpes simplex, Herpes Zoster, Varicella, Measles, Hepatitis B, AIDS. Protozoal - Filaria	Lecture Discussion
II	4	HAEMETOLOGY Clinical aspect of Anemia: iron deficiency, B_{12} & Folic acid deficiencies Types of bleeding diathesis Clinical features and management of Haemophilia	Lecture Discussion
III	8	RESPIRATORY TRACT Definition, aetiology, clinical features, prevention and management of: Chronic Bronchitis Pneumonia Asthma Emphysema Pulmonary Tuberculosis Bronchiectasis Chest well deformities Occupational lung diseases	Lecture Discussion
IV	10	CARDIO-VASCULAR SYSTEM Definition, aetiology, clinical features & management of: Cardiac failure Rheumatic fever Infective endocarditis Ischaemic heart disease Hypertension Pulmonary embolism & Pulmonary infarct Deep vein thrombosis Congenital heart disease – ASD, VSD, Fallot's tetralogy, PDA	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
V	8	BONE, JOINT, CONNECTIVE TISSUE DISORDERS Introduction to autoimmune disease Systemic lupus erythematosis, Polymyositis, Dermatomyositis, Polyarthritis nodasa, Scleroderma Rheumatoid arthritis Osteoarthiritis	Lecture Discussion
VI	2	RENAL DISEASES Acute & Chronic Renal Failure Urinary tract infections	Lecture Discussion
VII	10	METABOLIC & ENDOCRINE DISEASES Definition, aetiology, types, complications & management of: Diabetes mellitus Diseases of thyroid & parathyroid, adrenal and pituitary glands. Obesity	Lecture Discussion
VIII	12	GASTROINTESTINAL DISEASES Infection of mouth and throat Oesophageal spasm Acid peptic disorder of stomach Liver and gall bladder disorder Pancreatic disorder Colon disorder Abdominal hernia	Lecture Discussion
IX	5	GERIATRICS Hypertension Ischaemic heart diseases Cerebro vascular accident Benign prostate hyperplasia Cataract and other causes of vision failure	Lecture Discussion
X	4	DERMATOLOGY Common skin infection Psoriasis Leprosy Venereal diseases	Lecture Discussion
XI	2	MISCELLANEOUS Allergy Drug reaction	Lecture Discussion,
XII	5	GENETICS AND DISEASES Common inherited disorders Prevention of genetic disorders	Lecture Discussion,

Reference:

1.Principles and practice of Medicine – by Davidson

GENERAL AND PLASTIC SURGERY

Placement – Third Semester **Time:** Theory –40 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	5	INTRODUCTION TO Anaesthesia Blood transfusion & physical response of the body Wounds, Scars, Boils, Carbuncles Principles of pre and post operative physical examination, investigations, post operative complications and their management	Lecture Discussion
II	10	ABDOMINAL SURGERY Incision; complication; and management of Nephrectomy Appendicectomy Herniorrhapy Mastectomy Thyroidectomy Colostomy Adrenalectomy Cystectomy Hysterectomy Prostatectomy Cholecystectomy Illeostomy Incisional hernia & its prevention	Lecture Discussion
III	5	BURNS Causes Classification & depth of burn Medical management Precaution in acute stage Complication and management of burns Splinting in burns	Lecture Discussion
IV	10	PLASTIC SURGERY Principles of plastic surgery Post operative management and complications Cine plasty Principles of cosmetic surgery Skin grafting Surgery of hand in trauma and in leprosy	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
V	2	HEAD AND NECK SURGERY Hemi mandibulectomy	Lecture Discussion
VI	2	FACIAL FRACTURES Lefort-I Lefort-II Lefort-III	Lecture Discussion
VII	2	JAW OSTEOTOMIES Mandibular osteotomy Maxillary osteotomy	Lecture Discussion
VIII	1	FACIAL PALSY - Facial slings	Lecture Discussion
IX	1	CLEFT LIP &PALATE	Lecture Discussion
X	1	PRESSURE SORE	Lecture Discussion
XI	1	LYMPHOEDEMA	Lecture Discussion

Reference:

1. Bailey & Love's Short Practice of Surgery

PAEDIATRICS

Placement –Third Semester **Time:** Theory –50 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	4	GROWTH AND DEVELOPMENT (0-3 Years) Physical Social Adaptive development	Lecture Discussion,
II	3	HIGH RISK PREGNANCY Birth Asphyxia Inherited disease Maternal infection (viral; bacterial) Gestational diabetes Pregnancy induced hypertension Heart disease Renal failure Tuberculosis Epilepsy Bleeding in the mother at any trimester	Lecture Discussion,.
III	1	IMMUNIZATION SCHEDULE	Lecture Discussion
IV	3	ASSESSMENTS Neonatal assessment including neonatal reflex Pre-term baby assessment Low birth weight baby assessment	Lecture Discussion
V	2	NICU-Overview	
VI	3	CEREBRAL PALSY Etiology Types of cerebral palsy Pathogenisis Examination of cerebral palsy child Prevention Management	Lecture Discussion
VII	3	MUSCULAR DYSTROPHY Types Mode of inheritance Clinical manifestation Progression and prognosis of disease Treatment	Lecture Discussion.

Unit	Time (Hrs)	Content	Teaching method
VIII	7	CENTRAL NERVOUS SYSTEM DISORDERS Meningitis & Encephalitis Hydrocephalus Spina bifida Spinal dysraphism Infantile Hemiplegia	Lecture Discussion
IX	2	STILL'S DISEASE Classification Physical finding Course and prognosis- Medical treatment Prevention and correction of deformities	Lecture Discussion
X	3	NORMAL DIET(1-12 months) List dietary calories Vitamin deficiencies Protein energy malnutrition	Lecture Discussion,
XI	6	RESPIRATORY DISEASES Bronchiectasis Bronchopneumonia Bronchial asthma Lung Abcess Tuberculosis SIDS	Lecture Discussion,
XII	1	POLIOMYELITIS	Lecture Discussion
XIII	2	LIMPING CHILD DDH Perthes Disease CTEV	Lecture Discussion
XIV	2	DOWNS SYNDROME AND MENTAL RETARDATION	Lecture Discussion
XV	1	BRACHIAL PLEXUS LESION- Erbs Paralysis	Lecture Discussion
XVI	5	CONGENITAL HEART DEFECTS VSD ASD PDA TOF Transposition of Great Vessels RHD	Lecture Discussion
XVII	2	MISCELLANEOUS Feeding and communication difficulty Autism	Lecture Discussion

References:

Text book of Paediatrics – O.P. Ghai

OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY

Placement – Third Semester **Time:** Theory –20 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases

Unit	Time (Hrs)	Content	Teaching method
I	1	EYE LESION IN LEPROSY Causes Treatment Complications of lagophthalmos	Lecture Discussion, Demonstration.
II	2	FIELD DEFECTS Lesion in the visual path ways Clinical symptoms Methods of testing	Lecture Discussion, Demonstration.
III	2	DEFECTS OF OCCULAR MUSCLE Paralysis and treatment	Lecture Discussion, Demonstration.
IV	2	VISUALFAILURE Causes Features Treatment Prognosis Cataract Inflammatory disorders Vitamin A deficiency Glaucoma& trachoma Prevention& prophylactic measures	Lecture Discussion
V	2	DISORDERS OF OCCULAR MOVEMENT- (Causes, clinical features, treatment) In myasthenia gravis In Progressive supra nuclear palsy In lower motor neuron disease	Lecture Discussion, Demonstration.
VI	2	BLINDNESS Definition Visual disability evaluation Investigation for testing visual failure Basic screening procedures for community health survey	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VII	4	INTRODUCTION OF HEARING Anatomy Physiology Audiometry assessment of hearing	Lecture Discussion
VIII	2	HEARING LOSS Classification of causes Types of disability Conservative intervention Surgical intervention Hearing aids	Lecture Discussion, Demonstration.
IX	1	VESTIBULAR APPARATUS	Lecture Discussion
X	2	ENT-INFECTION&MANAGEMENT Diseases affect hearing Diseases affect breathing Disease affect speech	Lecture Discussion

References:

1. Davidson's Principle and Practice of Medicine

2. Text book of Ear, Nose and Throat diseases by Mohd. Magbool

3. Text book of Diseases of the Eye by Vasudev Anand Rao

THERAPEUTIC MASSAGE

Placement – Third Semester **Time:** Theory - 40 hours
Practical - 60hours

Course description: The course is designed to assist the students to acquire knowledge in therapeutic massage and list out the indications and contraindications for various techniques of therapeutic massage and enable them to demonstrate different massage techniques and describe their effects.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION TO MASSAGE Definition History of massage	Lecture Discussion
II	2+3	CLASSIFICATION OF MASSAGE On the basis of character of moment On the basis of depth of the tissues approached On the basis of region massaged On the basis of means of administration of technique	Lecture Discussion, Demonstration.
III	7	PHYSIOLOGICAL EFFECTS OF MASSAGE ON THE SYSTEM On Circulatory system On Metabolism On Nervous system On Mobility of soft tissues On Respiratory system On Skin On Adipose tissue Psychological effect	Lecture Discussion
IV	3	THERAPEUTIC USES OF MASSAGE	Lecture Discussion
V	6+20	TECHNIQUE OF MASSAGE Stroking-superficial & deep Pressure manipulations: Kneading (palmar, digital, reinforced), Petrissage (picking up, skin rolling, wringing), Tapotement (clapping, hacking, tapping, beating, pounding), Friction (transverse, circular), Shaking (shaking & vibration)	Lecture Discussion, Demonstration, and Practice by students.

Unit	Time (Hrs)	Content	Teaching method
VI	5	PHYSIOLOGICAL EFFECT OF Stroking Pressure manipulation Tapotement Friction Shaking	Lecture Discussion,.
VII	3	THERAPEUTIC EFFET OF Stroking Pressure manipulation Tapotement Friction Shaking	Lecture Discussion,.
VIII	3	CONTRA INDICATIONS FOR Stroking Pressure manipulation Tapotement Friction Shaking	Lecture Discussion,.
IX	2+10	PRACTICAL ASPECT OF MASSAGE Positioning of patient Draping Stance of the therapist Attitude and approach of the therapist Contact and continuity of the therapy Lubricant Accessories	Lecture Discussion, Demonstration, and Practice by students.
X	5+15	SEQUENCE OF MASSAGE FOR Upper limb Lower limb Back Neck Face	Lecture Discussion, Demonstration, Practice by students
XI	2+12	THERAPEUTIC APPLICATION OF MASSAGE	Lecture Discussion, Demonstration, and Practice by students.

Reference:

1.Principle and practice of therapeutic massage-Akkoury Gourang Sinha

ALLIED THERAPEUTICS: YOGA

Placement – Third Semester

Time: Theory – 10 hours
Practicals-30 hours

Course description: The course is designed to assist the students to acquire knowledge of fundamentals of yoga and its "*asanas*", to be applied in the therapeutic situations. Further it helps to develop skills in methods of teaching and training the individuals & groups in clinical & community settings.

Unit	Time (Hrs)	Content	Teaching method
I	5	YOGA Introduction to different stages of spiritual life & yogic stage Physical, physiological & psychological concepts of yoga Yoga & its "*asanas*" Indications, benefits, and uses of yoga Yoga as a science	Lecture Discussion, Demonstration.
II	20	YOGAASANAS Yoga & its different types of *asanas* *Savasanam / shanthiasanam* *Surya vanakkam / namaskaram* Basic four *asanas* in lying spine Basic four *asanas* in lying prone Basic four *asanas* in sitting Basic four *asanas* in standing *Pranayama*	Lecture Discussion, Demonstration, Practice by students.
III	5	YOGA ASANAS & APPLICATIONS IN THERAPY Application of the *asanas* in therapeutic methods & their benefits. Yoga for relaxation, physical culture, relaxation Yoga in flexibility, endurance, cardiac fitness & neuromotor learning.	Lecture Discussion
IV	10	TEACHING & TRAINING OF YOGA Teaching and training methods of Yoga & the different *asanas* by the students to individuals and groups.	Demonstration, Training practices by the students.

References:

1. Science and Medicine exercise and sports by Warren R Jhonson
2. Yoga stretching and relaxation for sports men by Capt.M.Rajan
3. The Yogi philosophy and physical well being by Yogi Tamacharaka

PHYSIOTHERAPY ETHICS

Placement – Third Semester **Time:** Theory – 20 hours

Course description: The course is designed to enable the students to acquire understanding of normal professional responsibilities, ethics and standards in practice.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION Introduction to Ethics & moral values Purpose & need for professional ethics	Lecture Discussion
II	5	PHYSIOTHERAPY AS A PROFESSION Philosophy, physiotherapy practice Aims and objectives Characteristics of a professional physiotherapist Regulatory bodies	Lecture Discussion
III	4	PROFESSIONAL ETHICS & LEGAL ASPECTS Code of ethics & professional conduct Relationship with patient, medical colleagues, other professionals. Confidentiality and responsibility Provision of services and advertising	Lecture Discussion
IV	4	LAWS AND LEGAL CONCEPT Protection from malpractice & negligence Consumer Protection Act Legal issues related to Physiotherapy practice: Breach and penalties. Liability and documentation	Lecture Discussion
V	5	PROFESSIONAL ADVANCEMENT Continuing education Career opportunities Membership with professional organizations: National and International Participations in research activities Publications: Journals, newspapers etc.	Lecture Discussion, Review/Presentation of published articles, Group work on maintenance of bulletin board

References:

1. Medical ethics by C.M.Francis

1. # EXERCISE THERAPY - I

Placement – Fourth Semester **Time:** Theory – 80 hours
Practical – 85 hours

Course description: The course is designed to assist the students to acquire knowledge in the field of exercise therapy and list out the indications and contraindications for various types of exercises and enable them to demonstrate different exercise therapy techniques and describe their effects.

Unit	Time (Hrs)	Content	Teaching method
I	4	EXERCISE PHYSIOLOGY • Exercise and physiology of body • Psychogenic aspect of exercise • Pharmacological aspect of exercise	Lecture Discussion
II	10	MECHANICS • Force • Gravity • Levers • Pulleys • Springs & Elasticity • Pendulum	Lecture Discussion, Demonstration.
III	5+10	MUSCLE ACTION • Group action of the muscles • Types of muscle contraction • Types of muscle works • Range of muscle work • Angle of pull • Mechanical efficiency of muscle	Lecture Discussion, Demonstration.
IV	4	STARTING POSITION • Definition • Fundamental position • Position and muscle work in Fundamental position • Effect and uses of fundamental positions	Lecture Discussion, Demonstration.
V	5+10	DERIVED POSITIONS • Derived position of Standing, Sitting, Kneeling, Hanging & Lying • Position and muscle work of each derived positions • Effect and uses of each derived positions	Lecture Discussion, Demonstration, Practice by students.
VI	2	PELVIC TILTS • Definition • Types of pelvic tilts • Structures responsible for maintenance of pelvic tilt • Abnormal pelvic tilts • Measurements of pelvic tilts	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
VII	5+20	MUSCLE TESTING • Different methods of testing-(like Manual muscle testing, Static muscle testing, Dynamic muscle testing) • Principles of Manual muscle testing • Merits &demerits of Manual muscle testing • Technique of Manual Muscle Testing of: Shoulder-*flexors, extensors, adductors, abductors, internal and external rotators*, Elbow-*flexors, extensors*, Wrist- *flexors, extensors*, Hip-*flexors, extensors, adductors, abductors, internal rotators & external rotators*, Knee - *flexors, extensors*, Ankle-*dorsiflexors, plantar flexors.*	Lecture Discussion, Demonstration, Practice by students.
VIII	5+15	GONIOMETRIC MEASUREMENT • Introduction to joint range measurement • Different methods of testing-(like Inch tape measurement, Goniometric measurement) • Parts of goniometer • Types of goniometer • Principles & technique of Goniometric measurement • Merits & demerits of Goniometric measurement • Technique of Goniometric measurement of: Shoulder - *flexion, extension, adduction, abduction, internal and external rotation*, Elbow-*flexion, extension*, Wrist- *flexion, extension*, Hip-*flexion, extension, adduction, abduction, internal rotation & external rotation*, Knee- *flexion extension*, Ankle- *dorsiflexion, plantar flexion*, Hand - (M.C.P., P.I.P,.D.I.P. joints) • Subtalar joints	Lecture Discussion, Demonstration, Practice by students.
IX	10	MOVEMENTS • Anatomical movements • Surface anatomy of the joints • Rhythm of movement • Timing of movement • Duration of the movement • Classification of movements-active/passive	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
X	5+10	RELAXATION • Definition of –muscle tone, contraction, relaxation • Technique of general relaxation • Technique of local relaxation • Effects & uses of relaxation	Lecture Discussion, Demonstration, Practice by students.
XI	10+5	GAIT • Definition of Gait • Phases and stages of normal Gait cycle • Parameters of Gait cycle • Abnormal Gait cycle	Lecture Discussion, Demonstration, Practice by students.
XII	5+5	BED RIDDEN COMPLICATIONS • Respiratory complications • Pressure sores • Postural Hypotension • Deep Venous Thrombosis • Pulmonary embolism • Cardio vascular endurance	Lecture Discussion, Demonstration.
XIII	2+5	OEDEMA • Definition • Types • Treatment	Lecture Discussion, Demonstration.
XIV	4+5	TRACTION • Definition &Types • Technique of Traction • Effects & Uses of Traction • Indications • Contra-indications	Lecture Discussion, Demonstration, Practice by students.
XV	4	THERAPEUTIC GYMNASIUM	Lecture Discussion, Demonstration.

Reference:

1. Principles of Exercise therapy- by M. Dena Gardiner

2. Practical Exercise Therapy- by M. Hollis

3. Therapeutic Exercise- by Carolyn Kisner

ELECTROTHERAPY-I

Placement – Fourth Semester **Time:** Theory – 60 hours
Practical -105 hours

Course description: The course is designed to assist the student to acquire knowledge in the field of Electrotherapy and assist the students to list out the indications and contraindications for different electrotherapy modalities and able to demonstrate the techniques and describe their effects.

Unit	Time (Hrs)	Content	Teaching method
I	10	ELECTRO PHYSIOLOGY • Membrane physiology • Resting potential • Action potential • Propagation of action potential • Motor units • Synapse and synaptic trans mission • Physiology of neuromuscular junction • Accommodation • Physiology of pain-pathways • Modulation of pain-pain gate theory	Lecture Discussion, Demonstration.
II	10	INTRODUCTION TO –L F. • Definition of L F • Principle of production of L F • Types of current used for neuro muscular stimulation	Lecture Discussion, Demonstration.
III	10+35	FARADIC CURRENT • Definition and character • Modified faradic current , sinusoidal current • Parameters of faradic stimulation • Physiological effect of faradic current • Therapeutic effect of faradic current • Indications and contraindications • Technique of motor point &group muscle stimulation • Practice on: Faradic foot bath, Faradic under pressure, pelvic floor muscle reeducation • Precautions	Lecture Discussion, Demonstration, Practice by students
IV	10+30	GALVANIC CURRENT • Definition and character • Parameters of Galvanic stimulation • Physiological effect of Galvanic current • Therapeutic effect of Galvanic current • Indications and contraindications • Technique of motor point &group muscle stimulation • Precautions	Lecture Discussion, Demonstration, Practice by students.

Unit	Time (Hrs)	Content	Teaching method
V	8+10	ELECTRO DIAGNOSIS • Faradic Galvanic test • Strength Duration curve • Nerve conduction velocity • E M G	Lecture Discussion, Demonstration.
VI	6+5	IONTOPHORESIS • Definition • Principles of iontophoresis • Physiological and therapeutic effect of iontophoresis • Principle of treatment • Contraindications and precautions	Lecture Discussion, Demonstration, Practice by students.
VII	2+10	T E N S • Definition • Application of T E N S in different painful conditions • Effects and uses	Lecture Discussion, Demonstration, Practice by students.
VIII	2+10	I F T • Definition • Principle of production • Application of T E N S in different painful conditions • Effects and uses	Lecture Discussion, Demonstration, Practice by students.
IX	2+5	FUNCTIONAL ELECTRICAL STIMULATION	Lecture Discussion, Demonstration.

References:

1. Clayton's Electrotherapy 11th edition

3. Electrotherapy Explained-Low and Reed

BIOMECHANICS AND KINESIOLOGY

Placement – Fourth semester **Time:** Theory - 100 hours

Course description: The course is designed to assist the students to acquire knowledge of the normal and pathomechanics of the joint and muscle and help the students to understand the limitation imposed by the pathomechanics.

Unit	Time (Hrs)	Content	Teaching method
I	10	BIOMECHANICAL JOINT APPLICATION Introduction to biomechanics Kinetics Kinematics	Lecture Demonstration
II	5	JOINT STRUCTURE AND FUNCTION Joint Structure: Connective tissue,joint design. Joint Function:Joint motion,Kinematic chain General changes with disease, injury,immobilization & exercise	Lecture Demonstration.
III	5	MUSCLE STRUCTURE AND FUNCTION Elements of Muscle Structure Muscle Function & Classification Effects of immobilization and aging	Lecture Discussion
IV	7	VERTEBRAL COLUMN Structure Function Muscles of the Vertebral Column Effects of Aging, Injury, and Developmental Deficits	Lecture Discussion
V	5	THORAX AND CHEST WALL Structure Function Pathological changes in structure and function	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VI	3	TEMPRO MANDIBULAR JOINT Structure Function Dysfunction	Lecture Discussion
VII	8	SHOULDER COMPLEX Components of the Shoulder Complex Integrated function of the shoulder Complex	Lecture Discussion
VIII	5	ELBOW COMPLEX Structure Function Effects of Immobilization and Injury	Lecture Discussion
IX	5	WRIST AND HAND COMPLEX Wrist Complex Hand Complex Prehension Functional Position of the Wrist and Hand	Lecture Discussion
X	5	HIP COMPLEX Structure Function Hip joint forces and muscle function in stance Hip joint pathology	Lecture Discussion
XI	5	KNEE COMPLEX Structure Function Effects of Injury and Disease	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
XII	7	THE ANKLE - FOOT COMPLEX Structure Function Plantar arches Muscles of the ankle and Foot Deviations from Normal Structure and Function	Lecture Discussion
XIII	10	POSTURE Static and dynamic posture Kinetics and kinematics of posture Analysis of Posture-overview Effects of Age, Pregnancy, Occupation, and Recreation on Posture	Lecture Discussion, Demonstration
XIV	20	GAIT Kinematics Kinetics Stair and Running Gaits Effects of age, gender and assistive devices Abnormal gaits-overview	Lecture Discussion, Demonstration

References:

1. Joint Structure and Function –A Comprehensive Analysis-VI edition by Pameela K. Levangie & Cynthia C Norkins
2. Clinical Kinesiology by Lynn S.Lippert.

PHARMACOLOGY

Placement –Fourth Semester **Time:** Theory –50 hours

Course description: The course is designed to enable the students to acquire knowledge of pharmaco-dynamics, pharmacokinetics, principles of therapeutics & implications in physiotherapy.

Unit	Time (Hrs)	Content	Teaching method
I	24	GENERAL PHARMACOLOGY • Definition & classification of drugs • Pharmocokinetics & pharmacodynamics • Broad categories of adverse reaction • Alcohols • Analgesics and antipyretics • Anti inflammatory drugs • Sedatives • Stimulants • Drug acting on muscle –Muscle relaxant, Muscle stimulant • Anti Parkinsonian agent • Drug modifying B P • Hypo lipidemia • Anti coagulants • Thyroxin and anti thyroid drugs • Anti diabetics • Glucocortics • Calcium, phosphorus, calcitonin, parathormone • Narrow spectrum antibiotics • Anti-cancer drugs • Disease modifying drugs	Lecture Discussion,.
II	5	DRUGS ACTING ON RESPIRATORY SYSTEM • Respiratory stimulant • Respiratory depressants • Bronchodialators • Expectorants • Anti-asthmatic • Antitussive	Lecture Discussion,.
III	4	DRUGS ACTING ON CARDIOVASCULAR SYSTEM • Anti-ischaemic drugs • Antiarrythmic drugs • Drugs in heart failure • Anti-hypertensive drugs	Lecture discussion
IV	3	VITAMINS	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
V	3	HORMONES • Ovarian hormones • Anabolic steroids • Estrogen • Progesterone • Androgen	Lecture Discussion
VI	5	LOCALLY ACTING DRUGS • Local anesthetic drugs • Counter irritant • Rubefacient • Soothing agent • Anti microbial	Lecture Discussion
VII	3	DRUGS AND EXERCISE	Lecture Discussion
VIII	3	DRUGS ACTING ON NERVOUS SYSTEM • Antispasticity drugs	Lecture Discussion

Reference:

1. Text book of Pharmacology by B N Ghose
2. Pharmacology for Physiotherapist by Ramesh Shenoy

EXERCISE THERAPY-II

Placement – Fifth Semester **Time:** Theory –80 hours
Practical-120hours

Course description: The course is designed to assist the students to acquire knowledge in the field of Exercise therapy and list out the indications and contraindications for various type of Exercise and enable them to demonstrate different Exercise therapy techniques and describe their effects.

Unit	Time (Hrs)	Content	Teaching method
I	5+5	PASSIVE MOVEMENT • Definition • Classifications • Principles and technique of passive movement • Physiological effects of passive movements • Therapeutic effect of passive movement • Indications & contraindications for passive movement	Lecture Discussion, Demonstration, Practice by students.
II	10+5	ACTIVE MOVEMENT- (Active free exercise, Active assisted exercise, Active assisted resisted exercise, Resisted exercise) • Definition • Classifications • Principles and technique of • Physiological effects of • Therapeutic effect of • Indications & contra indications for active exercises	Lecture Discussion, Demonstration, Practice by students.
III	5+10	PASSIVE STRETCHING • Definition • Physical and Physiological changes with passive stretching • Classifications of passive stretching • Principles and technique of passive stretching • Therapeutic effects of passive stretching • Indications & contraindications for passive stretching • Stretching technique for: P M J, Trapezius, Biceps,Triceps, Forearm and finger flexors, Hemiplegic stretching, Hip flexors, Ileotibial Band, Hip adductors, Quadriceps, Hamstrings, Tendo-Achilles, Soleus, Spinal extensors.	Lecture Discussion, Demonstration, Practice by students.
IV	5+10	BASIC PRINCIPLE MANUAL THERAPY FOR JOINT MOBILISATION • Physiological basis of manual therapy based on Maitland, McKenzie • Principles of application of manual therapy based on Maitland, McKenzie	Lecture Discussion, Demonstration, Practice by students.

Unit	Time (Hrs)	Content	Teaching method
V	5+10	PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION • Neuro physiological basis of P N F • Principle of P N F • Principles of application • Techniques in P N F: Hold–Relax, repeated contraction, rhythmic stabilization, rhythmic initiation, and slow reversal.	Lecture Discussion, Demonstration, Practice by students.
VI	5+10	RE EDUCATION • Principles • Techniques of re education • Effects and uses • Indication &contra indication for muscle reeducation • Techniques of re education for –(elbow flexors, extensors-wrist flexor, extensors-knee flexors, extensor, - ankle dorsi flexors, plantar flexors)	Lecture Discussion, Demonstration, Practice by students.
VII	5+10	PROGRESSIVE RESISTED EXERCISES (DE-LORMES, MACQUEEN, OXFORD) • Principles and technique of progressive resisted exercise • Physiological effects of progressive resisted exercise • Therapeutic effect of progressive resisted exercise • Indication &contra indication for progressive resisted exercise	Lecture Discussion, Demonstration, Practice by students.
VIII	5+10	SUSPENSION THERAPY • Principles • Classification of suspension therapy • Techniques of suspension therapy • Effects and uses • Indications & contraindications for suspension therapy • Techniques of suspension therapy for: Shoulder - *flexion, extension, adduction, abduction, internal & external rotation,* Elbow – *flexion, extension,* Hip- *flexion, extension, adduction, abduction, inernal & external rotation,* Knee - *flexion, extension.*	Lecture Discussion, Demonstration, Practice by students.
IX	5+15	JOINT MOBILITY • Causes joint limitation • Principle of joint mobilization • Technique of joint mobilization for - (Upper extremity joints, Lower extremity joints, Trunk, Thorax)	Lecture Discussion, Demonstration, Practice by students.

Unit	Time (Hrs)	Content	Teaching method
X	5+15	MUSCLE STRENGTH • Causes of muscle weakness • Principle of muscle strengthening • Technique of strengthening of muscle of -Upper extremity muscles, Lower extremity muscles, Trunk, Thorax muscles.	Lecture Discussion, Demonstration, Practice by students.
XI	6+4	CO-ORDINATION EXERCISE • Define static and dynamic balance • Mechanism of neuromuscular coordination • Definition of in co ordination • Causes of in coordination • Principles of coordination exercise • Technique of coordination exercise • Frenkel's exercise • Re-education of balance	Lecture Discussion, Demonstration, Practice by students.
XII	3+2	POSTURE • Definition • Classification • Neuromuscular control of posture • Causes of abnormal posture • Principle and technique of postural re-education	Lecture Discussion, Demonstration, Practice by students.
XIII	4+2	HYDROTHERAPY • Physical principle • Apparatus of hydro therapy • Indication and contra indications for hydro therapy • Dress and safety precaution for hydro therapy • Construction of hydrotherapy tank	Lecture Discussion, Demonstration, Practice by students.
XIV	5+5	CRUTCH WALKING • Types of the walking aids • Types of the crutch • Parts of the crutch • Crutch measurement • Assessment for crutch walking • Indication for crutch walking • Technique of crutch walking in: fractures, amputation, spinal cord injury, flaccid paralysis of lower limb	Lecture Discussion, Demonstration, Practice by students.
XV	2+2	ENDURANCE TRAINING	Lecture Discussion, Demonstration.
XVI	5+5	FUNCTIONAL RE EDUCATION	Lecture Discussion, Demonstration.

References:

1. Principles of Exercise therapy by M.Dena Gardiner
2. Practical Exercise therapy by M. Hollis
3. Therapeutic Exercise-by Kisner

ELECTROTHERAPY-II

Placement – Fifth Semester **Time:** Theory – 80 hours
Practical- 120 hours

Course description: The course is designed to assist the student to acquire knowledge in the field of Electrotherapy and assist the students to list out the indications and contraindications for different electrotherapy modalities and able to demonstrate the techniques and describe their effects.

Unit	Time (Hrs)	Content	Teaching method
I	20+20	SHORT WAVE DIATHERMY • Introduction • Methods of applications • Technique of applications • Physiological and therapeutic effects of S W D • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students
II	2+10	PULSED SHORT WAVE DIATHERMY • Introduction& Characters • Technique of applications • Physiological and therapeutic effects of pulsed S W D • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students.
III	2+10	MICRO WAVE DIATHERMY • Introduction &characters • Technique of applications • Physiological and therapeutic effects of Micro wave diathermy • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students.
IV	20+20	ULTRA VIOLET RADIATION • Introduction & Production of U V R • Apparatus & accessories • Sanitisers • Filters • Dosage in U V R • Technique of applications for psoriasis, intolent ulcers, test dose, painful condition, General tonic effect. • Physiological and therapeutic effects of U V R • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students
V	3+10	INFRA RED RADIATION • Introduction &Production • Technique of applications &dosage • Physiological and therapeutic effects of I R R • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students.

Unit	Time (Hrs)	Content	Teaching method
VI	8+10	ULTRA SONIC THERAPY • Introduction & Production • Technique of applications & dosage • Physiological and therapeutic effects of Ultra sonic therapy • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students
VII	5+10	WAX BATH / HYDROCOLLATOR • Introduction & Production • Technique of applications & dosage • Physiological and therapeutic effects of Moist heats • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students.
VIII	5+10	CRYOTHERAPY • Introduction • Physical principle • Technique of applications &dosage • Physiological and therapeutic effects of Cryo therapy • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students.
IX	5+10	BIO FEED BACK • Introduction& Principle of bio feed back • Technique of applications • Physiological and therapeutic effects of Biofeedback • Indications, contraindications, dangers	Lecture Discussion, Demonstration, Practice by students
X	5+5	SOFT L.A.S.E.R.	Lecture Discussion, Demonstration, Practice by students
XI	5+5	ADVANCED ELECTRO THERAPY • Computerization in Electro therapy • Combined therapy	Lecture Discussion, Demonstration, Practice by students

References:

1. Clayton’s Electrotherapy

2. Electrotherapy Explained

COMMUNITY HEALTH AND REHABILITATION

Placement – Fifth Semester **Time:** Theory –50 hours
Practical- 30hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed

Unit	Time (Hrs)	Content	Teaching method
I	3	INTRODUCTION • Natural history of diseases • Influence of social, economic, cultural aspect of health and diseases • Measures of prevention for disease with disability • Methods of intervention for disease with disability	Lecture Discussion
II	3	HEALTH CARE DELIVERY SYSTEM AND PUBLIC HEALTH ADMINISTRATIVE SYSTEM • National level • State level	Lecture Discussion
III	2+5	NATIONAL HEALTH PROGRAMME • Role of social, economic, cultural factors in the implementation of National programmes • Primary health care • Objectives and implementation	Lecture Discussion, Demonstration, Practice by students
IV	2+2	HEALTH PROBLEM OF VULNERABLE GROUPS • Pregnant and lactating women • Infants and Pre school children • Occupational groups • Geriatrics	Lecture Discussion, Demonstration, Practice by students
V	3+5	OCCUPATIONAL HEALTH • Definition • Scope • Occupational diseases • Prevention of occupational diseases and hazards • Role of E.S.I. • Employee state insurance scheme and its benefit	Lecture Discussion, Demonstration, Practice by students
VI	2	SOCIAL SECURITY MEASURES • Protection of occupational hazards, accidents and diseases • Workmen compensation act • Environmental safety	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VII	2+3	FAMILY WELFARE PROGRAMME • Objectives of family welfare programme • Family planning methods • General idea of Advantages and disadvantages • Concepts of planned pregnancy • Population dynamics	Lecture Discussion, Demonstration.
VIII	8	COMMUNICABLE DISEASES (With reference to reservoir, mode of transmission, route of entry and levels of prevention) • Poliomyelitis • Meningitis • Encephalitis • Tuberculosis • Filariasis • Leprosy • Tetanus • Measles • Malaria • Universal immunization programme-ARI, Diarrhoea & polio control programme	Lecture Discussion
IX	4	EPIDEMOLOGY OF • Rheumatic heart disease • Chronic degenerative disease • Cerebro vascular accident • Blindness • Accident • Cancer	Lecture Discussion
X	2	NUTRITIONAL FACTORS AFFECTS HEALTH • Protein energy malnutrition • Anaemia • Vitamin deficiency • Minerals	Lecture Discussion
XI	2+5	MENTAL HEALTH • Community aspect of mental health • Role of physiotherapist in mental health problem in cerebral palsy, mental retardation	Lecture Discussion, Demonstration.
XII	2+2	INTERNATIONAL HEALTH AGENCIES IN REHABILITATION	Lecture Discussion, Demonstration

Unit	Time (Hrs)	Content	Teaching method
XIII	3+3	HEALTH EDUCATION • Philosophy • Main principles and objectives • Methods and tools of communication • Health education versus health legislation • Education versus propaganda • Role of community leader in health education • Role of health professionals in health education • Element of planning a health education programme with special emphasis on community participation	Lecture Discussion, Demonstration.
XIV	5+5	COMMUNITY BASED REHABLITATION VERSUS INSTITUTIONAL BASED REHABILITATION Geriatric Women health Pediatric Advantages Disadvantages	Lecture Discussion, Demonstration
XV	2	REVIEW OF • Beliefs, values, norms, habits, taboos • Their importance in learning and change process	Lecture Discussion
XVI	3	REVIEW OF • Concept of perception • Attitudes • Socialization process • Learning and theories of learning • Social change and change process • Motivation needs	Lecture Discussion
XVII	2	VITAL HEALTH STATISTICS • Basic concept • Mortality and morbidity rate • Period, age, causes of specific death rate • Role of this rate as indicator of health and disease	Lecture Discussion

Reference:

1. Textbook of Preventive and Social Medicine by J E Park

ORTHOPAEDICS & TRAUMATOLOGY

Placement – Sixth Semester **Time:** Theory –100 hours

Course description: The course is designed to assist the students to acquire knowledge of the diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	5	INTRODUCTION TO ORTHOPAEDICS • Orthopaedic terminology • Clinical examination • Common investigations • Non operative management • Operative management	Lecture Discussion, Demonstration.
II	5	PRINCIPLES OF OPERATIVE MANAGEMENT • Indications • Contra indication • Arthrodesis • Arthroplasty • Osteotomy • Bone grafting • Tendon transfers	Lecture Discussion, Demonstration.
III	3	SPRAINS AND MUSCLE STRAIN • Common sites of sprain &strain • Clinical manifestation • Treatment	Lecture Discussion, Demonstration.
IV	3	FRACTURE & DISLOCATION • Types of fractures (pattern, open closed fracture, fracture - dislocation) • Difference between fracture and dislocation • General and local signs and symptoms of fracture and dislocation • Principle of management of fracture and dislocation • Prevention and treatment of complication of fracture (V.I.C., Sudeck's atrophy, carpal tunnel syndrome, myositis ossification, shoulder hand syndrome) • Fracture healing	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
V	10	UPPER LIMB FRACTURES & DISLOCATIONS • Clinical features • Principle of management • Complications	Lecture Discussion, Demonstration.
VI	10	LOWER LIMB FRACTURES & DISLOCATIONS • Clinical features • Principles of management • Complications	Lecture Discussion, Demonstration.
VII	6	SPINAL FRACTURES & DISLOCATIONS • Clinical features • Principle of management • Complications	Lecture Discussion, Demonstration.
VIII	2	RECURRENT DISLOCATIONS • Mechanism • Clinical features • Principle of management • Complications of recurrent dislocation of shoulder and patella	Lecture Discussion, Demonstration.
IX	3	AMPUTATIONS • Classifications • Indications • Pre operative management • Operative management • Post operative (prosthetic) management • Prevention and treatment of complication	Lecture Discussion, Demonstration.
X	6	BONE AND JOINT INFECTION (Septic arthritis, Osteomyelitis, Tuberculosis including spinal Tuberculosis) • Aetiology • Clinical features • Management • Complications • Operative management • Post operative (prosthetic) management • Prevention and treatment of complication	Lecture Discussion, Demonstration.
XI	6	BONE AND JOINT TUMOURS Clinical features, management and complications of Benign & Malignant bone and joint tumours: osteoma, osteosarcoma, osteoclastoma, Ewing's sarcoma, and multiple myeloma.	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
XII	8	CHRONIC ARTHIRITIS Aetiology, pathology, clinical features, mechanism of deformities, management and complications of: • Rheumatoid arthritis • Osteoarthritis of major joints & spine • Ankylosing spondylitis	Lecture Discussion, Demonstration.
XIII	3	LOW BACK ACHE, PAIN FUL ARC SYNDROME, TENDONITIS, FASCIITIS & SPASMODIC TORTICOLLIS • Clinical features Management	Lecture Discussion, Demonstration.
XIV	3	SPINAL DEFORMITIES • Classification • Salient Clinical features • Management • Complications	Lecture Discussion, Demonstration.
XV	2	POLIOMYELITIS • Pathology • Micro biology • Prevention • Clinical features • Treatment of residual paralysis including orthosis • Complications • Principles of muscle transfer	Lecture Discussion, Demonstration.
XVI	10	CONGENITAL DEFORMITIES Clinical features and management of: • Congenital Talipes Equino Varus • Congenital Dislocation of Hip • Flat foot • Vertical talus • Limb deficiency - Radial club hand & femoral, Tibial & fibular deficiency • Meningomyelocele • Arthrogryposis • Multiple congenital • Osteogenesis imperfecta	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
XVII	7	PERIPHERAL NERVE INJURIES Clinical features and management (including reconstructive surgery) of: Radial nerve lesion Ulnar nerve lesion Median nerve lesion Sciatic nerve lesion Lateral popliteal nerve lesion Brachial plexus injuries-Erb's palsy, Klumpke's palsy, Crutch palsy.	Lecture Discussion, Demonstration.
XVIII	5	HAND INJURIES Clinical features and management and complications of: • Skin and soft tissue injuries • Tendon injuries • Bone and joint injuries	Lecture Discussion, Demonstration.
XIX	3	LEPROSY Clinical features and management and complications of: • Neuritis • Muscle paralysis • Tropic ulceration • Hand and feet deformities	Lecture Discussion, Demonstration.

References:

1. Outline of fracture by Adams

2. Orthopaedics and traumatology by Mayilvahanan Natarajan

NEUROLOGY & NEUROSURGERY

Placement – Sixth Semester **Time:** Theory–100hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	10	BASIC NEUROANATOMY • Anatomy of brain and spinal cord • Blood supply of brain and spinal cord • Visual pathway • Connections of cerebellum and extra pyramidal system • Relationship of spinal nerves to spinal segment • Long tracts of spinal cord • Brachial & lumbar plexuses • Cranial nerve	Lecture Discussion, Demonstration.
II	10	BASIC NEURO PHYSIOLOGY • Motor - muscle contraction and movement (pyramidal, extra pyramidal, cerebellar) • Sensory • Reflexes, Bladder, Bowel control • Tone: Basis & Disorders of tone and posture • Pain	Lecture Discussion, Demonstration, Practice by students
III	5	CONGENITAL & CHILDHOOD DISORDERS Clinical features and management of: • Cerebral palsy • Hydrocephalus • Spina bifida	Lecture Discussion, Demonstration.
IV	5	CEREBRO VASCULAR ACCIDENT • General classification - thrombotic, emboli, haemorrhagic, inflammatory. • Gross localization and sequelae • Rehabilitative programme	Lecture Discussion, Demonstration.
V	10	TRAUMA (Head injury, spinal cord injury) • Broad localisation • First aid • Management	Lecture Discussion, Demonstration.
VI	5	DISEASES OF THE SPINAL CORD Clinical features and management of: • Cranio vertebral junction anomalies • Syringomyelia • Cervical & lumbar disc diseases • Spinal arachnoiditis • Tumours	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
VII	10	DEMYELINATING DISEASES (Central & Peripheral) Clinical features and management of: • Guillian-barre syndrome • Acute disseminated encephalomyelitis • Transverse myelitis • Multiple sclerosis	Lecture Discussion, Demonstration.
VIII	5	DEGENERATIVE DISORDERS Clinical features and management of: • Parkinson's disease • Dementia	Lecture Discussion, Demonstration.
IX	5	INFECTIONS (Clinical features and management of) • Pyogenic meningitis sequelae • Tuberculosis infection of central nervous system • Poliomyelitis	Lecture Discussion, Demonstration.
X	5	DISEASES OF THE MUSCLE • Classification • Signs and symptoms • Management	Lecture Discussion, Demonstration.
XI	10	PERIPHERAL NERVE DISORDERS • Peripheral nerve injuries localization and management • Entrapment neuropathies • Peripheral neuropathies	Lecture Discussion, Demonstration.
XII	10	MISCELLANEOUS • Epilepsy- definition, classification, management • Myasthenia gravis: definition, course, management • Intra cranial tumours – broad classifications, signs & symptoms • Motor neuron diseases	Lecture Discussion, Demonstration.
XIII	10	ASSESMENT OF NEUROLOGICAL CONDITION • History taking- • Assessment of higher mental function • Assessment of cranial nerves • Assessment of motor power • Assessment of sensory function • Assessment of tone • Assessment of cerebellar function • Assessment of higher cortical function • Assessment of gait abnormalities	Lecture Discussion, Practical Demonstration and practice by the students

References:

1. Davidson Principles and Practice of Medicine
2. Brains Clinical Neurology
3. Surgery by Nan.
4. Neurology and Neurosurgery Illustrated by Lindsay (K.W)

CARDIOLOGY & CARDIAC SURGERY

Placement – Sixth Semester **Time:** Theory –30 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	2	REVIEW OF ANATOMY OF CARDIO VASCULAR SYSTEM • Anatomy & Blood supply of the heart	Lecture Discussion
II	2	REVIEW OF PHYSIOLOGY OF CARDIO VASCULAR SYSTEM • Maintenance of blood pressure • Electrical activity of heart and normal E C G	Lecture Discussion, Demonstration.
III	2	CARDIAC FAILURE • Definition • Causes • Signs & symptoms • Management of cardiac failure	Lecture Discussion, Demonstration.
IV	3	RHEUMATIC FEVER • Definition • Etiology • Clinical features • Complications • Treatment	Lecture Discussion
V	4	CONGENITAL & ACQUIRED HEART DISEASES • A S D • V S D • P D A • Fallot's tetrology • Transposition of great vessels • AV Malformation • Mitral stenosis • Mitral regurgitation • Aortic stenosis • Aortic regurgitation	Lecture Discussion, Demonstration.
VI	2	ISCHAEMIC HEART DISEASES • Aetio pathogenisis • Classifications • Symptoms • Diagnosis • Medical and surgical treatment	Lecture Discussion

Unit	Time (Hrs)	Content	Teaching method
VII	2	HYPERTENSION • Definition • Classification • Symptomatology • Complications • Treatment	Lecture Discussion
VIII	1	INFECTIVE ENDOCARDITIS • Aetiology • Pathogenesis • Clinical features • Treatment	Lecture Discussion
IX	1	DEEP VEIN THROMBOSIS • Aetiology • Clinical features • Management	Lecture Discussion
X	1	PULMONARY EMBOLISM • Etiology • Clinical features • Management	Lecture Discussion
XI	2	ARTERIAL DISEASES (Atherosclerosis, Burger's disease) • Etiology • Clinical features • Management	Lecture Discussion
XII	2	INTRODUCTION TO CARDIAC SURGERY • Types of incision • Pre and post operative assessment • Complications • Management	Lecture Discussion, Demonstration.
XIII	4	CARDIAC SURGERY Indication, Contra indication, Site of incision, pre and post operative management of: • Valvotomy and valve replacement • Open heart surgery / cardiac bypass surgery • Surgery of pericardium • Heart transplantation • Pace maker • Coronary angio plasty • Balloon angioplasty and vascular surgery	Lecture Discussion, Demonstration.
XIV	2	PRINCIPLES OF CARDIO VASCULAR STRESS TESTING	Lecture Discussion, Demonstration.

References:

1. Davidson's Principles and Practice of Medicine
2. Harrison's Internal Medicine
3. Bailey and Love's-Short Practice of Surgery

THORACIC MEDICINE & SURGERY

Placement – Sixth Semester **Time:** Theory –50 hours

Course description The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed

Unit	Time (Hrs)	Content	Teaching method
I	5	REVIEW OF ANATOMY OF RESPIRATORY SYSTEM • Anatomy of lung, bronchi, bronchopulmonary segment • Relationship of bony thorax and lung • Relationship of abdominal content and lung • Variations of bony cage in-cervical ribs, rickets & rickety rosary, pigeon chest, funnel chest, scoliosis, kyphosis. • Movements of thorax in respiration • Muscles of respiration	Lecture Discussion, Demonstration.
II	5	REVIEW OF PHYSIOLOGY OF RESPIRATORY SYSTEM • Physiological control of respiration (respiratory center & receptors) • Cough reflex • Mechanical factors affecting breathing • Factor affecting lung compliance& airway resistance • Factor affecting diffusion of O_2 & CO_2 in the lung • Ventilation – Perfusion & their interrelationship • Pulmonary function assessment- P F T • Value of blood gas analysis	Lecture Discussion, Demonstration.
III	3	CHRONIC BRONCHITIS &EMPHYSEMA • Definition • Clinical features • Investigations • Complication • Treatment	Lecture Discussion, Demonstration.
IV	2	BRONCHIAL ASTHMA • Aetiology • Clinical features and diagnosis • Treatment	Lecture Discussion, Demonstration.
V	2	PNEUMONIA • Definition • Classification • Clinical features • Complications • Treatment	Lecture Discussion, Demonstration.

Unit	Time (Hrs)	Content	Teaching method
VI	3	TUBERCULOSIS • Aetiopathogenesis • Clinical test of pulmonary tuberculosis & diagnosis • Complications • Treatment	Lecture Discussion, Demonstration.
VII	3	LUNG ABSCESS & BRONCHIECTASIS • Definition • Clinical features • Diagnosis • Treatment	Lecture Discussion
VIII	7	CHEST WALL DEFORMITIES Clinical features and management of: • Fracture ribs • Flail chest • Stove in chest • Pneumothorax • Haemothorax • Haemopneumo thorax • Lung contusion & laceration • Injury to heart, great vessels & bronchus	Lecture Discussion, Demonstration.
IX	2	EMPHYEMA • Causes • Treatment-inter costal drainage, rib resection, decortications & window operation	Lecture Discussion, Demonstration.
X	3	OCCUPATIONAL LUNG DISEASES • Clinical features • Diagnosis • Treatment	Lecture Discussion
XI	10	INDICATIONS, CONTRA INDICATIONS, SITE OF INCISION, PRE AND POST OPERATIVE MANAGEMENT AND COMPLICATIONS OF: • Lobectomy • Pneumonectomy • Segmentectomy • Pleuro-pneumonectomy • Thorocoplasty • Decortication • Tracheostomy	Lecture Discussion, Demonstration.
XII	5	LUNG CARCINOMA • Clinical features • Treatment	Lecture Discussion

References:

1. Davidson's Principles and Practice of Medicine
2. Harrison's Internal Medicine
3. Bailey and Love's -Short Practice of Surgery

CRITICAL CARE

Placement – Sixth Semester

Time: Theory –10 hours
Practical-10 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	2+1	RESPIRATORY FAILURE • Classification • Causes • Treatment	Lecture Discussion, Demonstration.
II	4+2	VENTILATORS • Principles • Various types • Uses	Lecture Discussion, Demonstration.
III	2+4	PROCEDURE &MANAGMENT • Endotracheal tubes • Endonasal tube • Tracheal suction • Weaning of the patient from ventilator • Extubation & post extubation care	Lecture Discussion, Demonstration.
IV	2+3	CARDIO PULMONARY RESUSCITATION • Principles • Cardiac massage • Artificial ventilation Defibrillators and their uses	Lecture Discussion, Demonstration.

Reference:

Davidson’s Principle and Practice of Medicine

OBSTETRICS & GYNAECOLOGY

Placement – Sixth Semester **Time:** Theory –30 hours

Course description: The course is designed to assist the students to acquire knowledge of the Diseases and help the students to understand the limitation imposed by the diseases on any therapy that may be prescribed.

Unit	Time (Hrs)	Content	Teaching method
I	2	Anatomy And Physiology Of Female Reproductive System	Lecture Discussion
II	2	Principles Of Clinical Examination, Investigation, Diagnosis, Prognosis In Female Reproductive System Disorder	Lecture Discussion
III	1	Menstruation And Disorders Of Menstruation	Lecture Discussion
IV	1	Physiological Changes During Pregnancy	Lecture Discussion
V	5	Antenatal Care And Diagnosis Of Pregnancy including High Risk Pregnancy	Lecture Discussion, Demonstration.
VI	5	LABOUR • Stage of labour • Normal labour • Abnormal labour • Management of neonate	Lecture Discussion, Demonstration.
VII	2	Puerperium & Post Natal Care, Social Obstetrics – Maternal & Perinatal Mortality	Lecture Discussion, Demonstration.
VIII	4	PELVIC PAIN AND ITS MANAGEMENT	Lecture Discussion, Demonstration.
IX	3	GYNAECOLOGICAL CONDITION Pelvic Inflammatory Disease Tumours Malignancy Infertility Endometriosis Ectopic pregnancy Vesicular mole	Lecture Discussion, Demonstration.
X	2	PROLAPSE UTERUS, Causes Of Incontinence, Type Management	Lecture Discussion, Demonstration.
XI	1	ABORTION AND BIRTH CONTROL	Lecture Discussion, Demonstration.
XII	2	SURGICAL CONSIDERATION IN OBSTETRICS AND GYNAECOLOGY	Lecture Discussion, Demonstration.

References:

1. Shaw's Textbook of Gynaecology
2. Physiotherapy in Obstetrics and Gyneacology II Edition Jill Mantle

RADIODIAGNOSIS

Placement – Sixth Semester

Time: Theory – 10 hours
Practical–20 hours

Course description: The course is designed to assist the students to acquire knowledge of the basis of interpretation with different diagnostic tool and help the students to make use of that in the implementation of physiotherapy.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION Basic view used in radiography Radio diagnostic method	Lecture Discussion
II	3+10	X-RAY Normal view Abnormalities Interpretation Identification of fracture, dislocation, osteomyelitis, osteoporosis, rickets, tumours, common chest abnormalities.	Lecture Discussion, Demonstration.
III	2+2	ANGIO GRAM VENOGRAM Normal Blood Supply to Brain and Spinal Cord Abnormal Blood Supply to Brain and Spinal Cord Myelogram	Lecture Discussion, Demonstration,
IV	1+3	COMPUTERISED TOMOGRAPY Normal features Abnormal features	Lecture Discussion, Demonstration.
V	1+3	M.R.I Normal features Abnormal features	Lecture Discussion, Demonstration.
VI	1+2	ULTRASONOGRAM Guidelines for interpretation	Lecture Discussion, Demonstration.

References:

1. Diagnositc Imaging Quality Assurance by M.M. Rehani
2. Aids to Radiological Differential Diagnosis by Stephen Chapman

PHYSIOTHERAPY IN ORTHOPAEDICS

Placement – Seventh Semester

Time: Theory – 60 hours
Practicals - 60 hours

Course description: The course is designed to enable the students to integrate the knowledge in clinical orthopaedics with the skills gained in exercise therapy, electrotherapy and therapeutic massage, thus enabling to apply in clinical situations of dysfunction due to musculoskeletal pathology.

Unit	Time (Hrs)	Content	Teaching method
I	6	PHYSIOTHERAPY IN FRACTURES Definition, classification, causes, types, signs & symptoms, complications Healing of fractures, factors affecting healing Principles of management of fractures Principles of physiotherapy management in fractures & complications	Lecture Discussion
II	20	PHYSIOTHERAPY IN SPECIFIC FRACTURES Upper limb: Scapula, clavicle, humerus, Radius and Ulna, Colles' fracture, Hand - crush injuries Lower limb: Pelvis, Femur – neck & shaft, Tibia and Fibula, Pott's fracture, tarsal and metatarsal bones. Spine: with or without neurological deficit	Lecture Demonstration
III	4	PHYSIOTHERAPY IN DISLOCATIONS Common sites, sign and symptoms Physiotherapy management in dislocated joints: Hip, Shoulder and Patella.	Lecture Discussion
IV	15	PHYSIOTHERAPY IN SOFT TISSUE INJURIES Synovitis, Capsulitis, Tendonitis, Rupture of tendons, Ligament injuries, Epicondylitis, Cartilage & meniscal injuries, fasciitis, Myofascial pain syndromes and Shoulder-hand syndrome. Burns: Conservative and surgical interventions.	Lecture Demonstration
V	10	PHYSIOTHERAPY IN DEFORMITIES Congenital: Torticollis, Cervical rib, Congenital Talipes equino varus, pes cavus, pes planus and other common deformities Acquired: Coxa vera, Genu valgum, Genu varum, Genu recurvatum.	Lecture Demonstration
VI	10	PHYSIOTHERAPY IN VERTEBRAL CONDITIONS Ankylosing spondylitis Intervertebral Disc Prolapse Cervical and lumbar spondyloses, spondylolisthesis. Spinal deformities: Kyphosis, Scoliosis, Lordosis.	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
VII	20	PHYSIOTHERAPY IN DEGENERATIVE & INFECTIVE CONDITIONS • Osteoarthritis of major joints • Tuberculosis of joints • Rheumatoid arthritis • Hansen's disease	Lecture Demonstration
VIII	10	PHYSIOTHERAPY IN AMPUTATION Levels of amputation of upper and lower extremities Stump management Pre and post prosthesis fitting assessment and management Complications of amputations and their management	Lecture Demonstration
IX	15	PHYSIOTHERAPY IN ORTHOPAEDIC SURGERY Preoperative and postoperative assessment and management of surgeries: Arthroplasty, Arthrodesis, Osteotomy, Tendon transplant, Soft tissue release, Grafting, Arthroscopy, Spinal stabilization. Reattachment of limbs, Ilizarov technique, external fixators, surgeries in cerebral palsy and poliomyelitis.	Lecture Demonstration
X	10	SPINAL TRACTION & PERIPHERAL JOINT MOBILISATION Principles Effects & Uses Indications & Contraindications Techniques	Lecture Demonstration

PHYSIOTHERAPY IN NEUROLOGY

Placement – Seventh Semester

Time: Theory – 60 hours
Practicals - 60 hours

Course description: The course is designed to enable the students to integrate the knowledge in clinical neurology with the skills gained in exercise therapy, electrotherapy and therapeutic massage, thus enabling to apply in clinical situations of dysfunction due to pathology in the nervous system.

Unit	Time (Hrs)	Content	Teaching method
I	7	NEUROANATOMY & NEUROPHYSIOLOGY Structure and function of Neuron, and synapse Function of cerebral hemispheres, cerebellum , spinal cord, peripheral nerves, pyramidal system, extrapyramidal system. Neurological basis of musle tone and movement: hypotonia, hypertonia (spasticity and rigidity), ataxia, athetosis and chorea.	Lecture Discussion
II	20	PRINCIPLES OF ASSESSMENT • Assessment of higher functions, cortical sensations, cranial nerves, dorsal column sensations and pain & temperature sensations. • Assessment of motor function: muscle power, range of motion, balance and coordination. • Assessment of reflexes and reflex maturation in terms of stimulus, position and reaction. • Assessment of gait - both normal and abnormal (spastic, ataxic and paralytic patterns)	Lecture Demonstration
III	18	PRINCIPLES OF TREATMENT Sensory re-education Motor re-education: Use of PNF patterns, controlled sensory stimulation (vibration, tactile, ice), facilitation by use of stretch, inhibition by joint compression, Strengthening exercise, coordination exercises, mobilization exercises Functional training: gait training with and without aids, activities of daily living, mat exercises, recreation. Use of splints and braces in spastic and flaccid situations of upper and lower limbs. Pain management: Treatment modalities	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
IV	12	CEREBRAL PALSY • Classification & types • Developmental milestones assessment • Functional ability assessment • Assessment of contractures and deformities • Treatment of motor disabilities: passive movement, soft tissue stretching, inhibitory and facilitatory techniques • Techniques of carrying CP children • Home Programme for positioning and handling the child, assisting improvement of functions • Introduction to treatment techniques: Bobath, Rood.	Lecture Demonstration
V	6	MUSCULAR DYSTROPHY • Stages: Ambulatory, Wheelchair and bed-ridden. • Significance of exercises: Resisted, active and free • Assessment of common contractures and deformities • Assessment of range of motion, muscle power and functional ability. • Treatment programme for strengthening weak muscles: active movements, hydrotherapy, suspension therapy, powder board exercises, passive stretching, positioning. • Gait training with appropriate orthoses. • Management of chest complications: breathing exercises, chest percussion, drainage of secretions and assisted coughing.	Lecture Demonstration
VI	6	PARKINSONISM • Natural history of the course and prognosis of the disease. • Assessment of problems in posture, sitting, kneeling and standing balance, voluntary and automatic movements, rigidity, tremor, finger dexterity and gait. • Yulu disability grading • Treatment: Postural awareness, relaxation training, gait training techniques: Associated reactions, heel-toe gait, overcoming obstacles, start and stop on command, turning and walking backwards, forwards and sidewards. • Home exercise programme.	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
VII	13	HEMIPLEGIA Identification of: Sensory disturbance, alteration in tone, loss of selective movement, loss of balance reactions and communications problems. Treatment: Unilateral and bilateral approaches Positioning in supine, on affected and unaffected sides; activities in the recumbent position. Mat activities, transfer techniques, tilt board activities, additional methods of stimulation. Management of shoulder hand syndrome Description of hemiplegic gait and reeducation of gait.	Lecture Demonstration
VIII	5	CEREBELLAR LESIONS Assessment of abnormal tone, decomposition of movement, rapid alternate movements, pleurothotonus, proprioception, dysmetria, posture and gait. Treatment: Exercises for incoordination – Frenkel's and weighted exercises; reeducation of balance and equilibrium reactions. Use of appropriate ambulatory aids.	Lecture Demonstration
IX	14	SPINAL CORD LESIONS • Types of spinal cord lesions; signs of tract and root interruptions. • Positioning in acute spinal cord injury. • Assessment of motor system: tone, power, range of motion and limb girth. • Assessment of sensory system • Assessment of functional ability and balance reactions. • Assessment of respiratory function. • Treatment in the immobilization stage and weight bearing stage - spinal orthosis. • Motor reeducation programme, respiratory care programme in high-level lesions. • Mat exercises, various strengthening programmes, spasticity reduction methods, balance training. • Gait training, re-education of functional activities, transfer techniques, use of hydrotherapy.	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
X	15	PERIPHERAL NERVE LESIONS Types of peripheral nerve lesions Assessment of motor system: specific muscles, range of motion - active and passive, girth. Assessment of sensory system: Touch, pain temperature, paraesthesia, nerve reverberation. Assessment of autonomic function: sweating, skin condition, soft tissue atrophy. Treatment: Muscle re-education techniques – electrical stimulation, active assisted, resisted movements; Passive and self-assistive stretching; Massage; Sensory re-education; Pain relieving modalities. Common splints used in peripheral nerve lesions: static, dynamic, functional. Isolating muscle contraction and Specific muscle strengthening.	Lecture Demonstration
XI	4	POLIOMYELITIS Stages of Poliomyelitis Management in acute & recovery stages Management in residual paralysis stage: Contractures, Limb length discrepancy, spinal deformities. Orthotic aids commonly used. Physiotherapy management following tendon transfer operations	Lecture Demonstration

PHYSIOTHERAPY IN CARDIO-RESPIRATORY CONDITIONS

Placement – Seventh Semester **Time:** Theory – 60 hours
Practicals-60 hours

Course description: The course is designed to enable the students to integrate the knowledge in clinical cardio-respiratory conditions with the skills gained in exercise therapy, electrotherapy and therapeutic massage, thus enabling to apply in clinical situations of dysfunction due to cardio-respiratory pathology.

Unit	Time (Hrs)	Content	Teaching method
I	10	ANATOMY & PHYSIOLOGY Anatomy of thorax; respiratory tract – trachea and bronchial tree, lungs & bronchopulmonary segments; muscles of respiration; heart and great vessels; movements of chest wall and surface anatomy of lung and heart. Mechanics of respiration, lung volumes, respiratory muscles, compliance of lung and chest wall, work of breathing, dead space, gas exchange of lung and pulmonary circulation.	Lecture Discussion
II	10	PRINCIPLES OF ASSESSMENT • Physical assessment in cardiorespiratory dysfunction: posture, breathing pattern, chest movements, chest deformity, spinal deformity, sputum, cough, thoracic & ribcage mobility, normal and abnormal breath sounds. • Chest expansion, exercise tolerance.	Lecture Demonstration
III	20	PRINCIPLES OF TREATMENT Breathing exercises: Indications, goals, types, procedures of diaphragmatic, localized basal expansion, specific segmental exercises. Chest mobility exercises Controlled breathing during walking and during functional activity Relaxed positions, exercise testing and exercise programme for breathless patients Techniques of forced expiratory technique, huffing, coughing, chest manual techniques. Postural drainage: indications, general precautions, contra-indications, preparation for drainage, modified postural drainage, continuing postural drainage as a home programme.	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
IV	10	SPECIFIC PHYSIOTHERAPY MANAGEMENT Physiotherapy to increase lung volume Physiotherapy to decrease work of breathing Physiotherapy to clear secretions	Lecture Demonstration
V	20	PHYSIOTHERAPY IN OBSTRUCTIVE & RESTRICTIVE LUNG DISORDERS Pulmonary rehabilitation in the following conditions: Chronic obstructive pulmonary diseases: Bronchiectasis, Asthma, Bronchitis, Emphysema. Chronic Restrictive Lung Disorders: Interstitial lung diseases, neuro-musculo-skeletal disorders, infections & respiratory failure.	Lecture Demonstration
VI	20	PHYSIOTHERAPY IN POST-OPERATIVE CONDITIONS Physiotherapy in the following post-operative conditions: Pulmonary surgeries Cardiac surgeries Thoracic wall surgeries Abdominal: upper and lower abdomen	Lecture Demonstration
VII	10	CARDIAC REHABILITATION Phases of cardiac rehabilitation Management following myocardial infarction, angioplasty. Management following open heart surgeries	Lecture Demonstration
VIII	20	PRINCIPLES OF INTENSIVE CARE PHYSIOTHERAPY Mechanical respiration & modes of ventilation – invasive and non-invasive. Aerosol therapy & humidification: Principles, types and methods. Suctioning – nasopharyngeal, oropharyngeal and endotracheal, tracheostomy Monitoring: ECG, pulse oximetry, respiration	Lecture Demonstration

RESEARCH METHODOLOGY& BIO-STATISTICS

Placement – Seventh Semester **Time:** Theory – 30 hours

Course description: The course is designed to enable the students to develop an understanding of basic concepts of research, research process and statistics in professional practice.

Unit	Time (Hrs)	Content	Teaching method
I	2	RESEARCH AND RESEARCH PROCESS Introduction and need for physiotherapy research Definition of research Steps in scientific method Characteristics of good research Steps in research process - overview	Lecture Discussion with examples from published studies
II	1	RESEARCH PROBLEM Identification of research problem area Problem of statement Criteria of a good research problem Framing objectives	Lecture Discussion, Exercises on writing problem statement
III	2	REVIEW OF LITERATURE Location & sources Online search Purposes Method of review	Lecture Discussion, Exercises on reviewing a research report
IV	2	RESEARCH APPROACHES & DESIGNS Historical, survey and experimental Qualitative and Quantitative designs	Lecture Discussion with examples from published studies
V	5	SAMPLING & DATA COLLECTION Definition of population, sample, sampling criteria, factors influencing sampling process, types of sampling techniques. Data – why, what, from whom, when, where to collect. Data collection methods: Questioning, interviewing, observation, record analysis, and measurement. Reliability & Validity of the data collection instruments Pilot study & Data collection procedure	Lecture Discussion, Reading examples of data collection tools, Exercises on data collection.
VI	3	DATA ANALYSIS Compilation, Tabulation, Classification, Summarisation, Presentation and Interpretation of data.	Lecture Discussion, Preparation of sample tables

Unit	Time (Hrs)	Content	Teaching method
VII	12	INTRODUCTION TO STATISTICS Definition, use of statistics, scales of measurement. Frequency distribution and graphical presentation of data. Mean, median, mode, and standard deviation. Normal probability and tests of significance. Co-efficient of correlation. Statistical packages and its application.	Lecture Discussion, Practice on graphical presentations, and on computation of central tendency, variability & correlation.
VIII	3	COMMUNICATION & UTILISATION OF RESEARCH Communication of research finding: Verbal report, Writing research report, Writing scientific article/paper Critical review of published research Utilisation of research findings	Lecture Discussion, Read a sample on published research article, Writing a research report.

PHYSIOTHERAPY IN OBSTETRICS & GYNAECOLOGY

Placement – Eighth Semester

Time: Theory – 20 hours
Practicals-20 hours

Course description: The course is designed to enable the students to integrate the knowledge in clinical obstetrics & gynaecological conditions and the skills gained in exercise therapy, electrotherapy and therapeutic massage, thus enabling to apply in clinical situations to manage by physiotherapeutic interventions.

Unit	Time (Hrs)	Content	Teaching method
I	4+1	ANTENATAL PERIOD Pregnancy back care Exercise & pregnancy Exercise guidelines	Lecture Demonstration
II	3+3	RELIEVING DISCOMFORTS OF PREGNANCY Back & pelvic girdle pain – prevention & management Common syndromes & their treatment Circulatory disorders & their treatment	Lecture Demonstration
III	2+3	PREPARATION FOR LABOUR Relaxation Breathing Positions in labour Pain relief in labour	Lecture Demonstration
IV	4+4	POST NATAL PERIOD Post natal care & exercises Physiotherapy in immediate post natal problems Physiotherapy in long term post natal problems	Lecture Demonstration
V	3+3	PHYSIOTHERAPY IN GYNAECOLOGICAL CONDITIONS & SURGERY Genital prolapse, gynaecological cysts & new growths Pre & post operative physiotherapy in gynaecological surgeries	Lecture Demonstration
VI	2+3	PHYSIOTHERAPY IN URINARY DYSFUNCTION Assessment Treatment Management of persistent urinary incontinence	Lecture Demonstration
VII	2+3	PHYSIOTHERAPY IN BOWEL & ANORECTAL DYSFUNCTION Assessment Treatment	Lecture Demonstration

Reference:

* Mantle, Haslam, Barton; Physiotherapy in Obstetrics & Gynaecology; II edn.; Elsevier; ISBN 8181479009.

CLINICAL REASONING & EVIDENCE BASED PRACTICE

Placement – Eighth Semester

Time: Theory – 30 hours
Practicals-20 hours

Course description: The course is designed to enable the students to gain knowledge in clinical reasoning and to have evidence based physiotherapy practice thus enabling them to apply in clinical situations.

Unit	Time (Hrs)	Content	Teaching method
I	10	INTRODUCTION Evidence based practice – an overview Need for evidence based practice History of evidence based based health care & evidence based practice.	Lecture Discussion
II	10+10	EVIDENCE BASED PRACTICE • Process • Search strategies • Assessing validity of evidence • Critical appraisal of evidence about prognosis • Meaning of evidence for physiotherapy practice	Lecture Demonstration
III	10+10	CLINICAL GUIDELINES AS A RESOURCE FOR EVIDENCE BASED PHYSIOTHERAPY PRACTICE Historical guidelines and their importance Implementing the guidelines Evidence based practice in quality improvement Assessing patient outcomes	Lecture Demonstration

Reference:

* Herbert, *et al,* PRACTICAL EVIDENCE – BASED PHYSIOTHERAPY, Elsevier publishers, ISBN 0750688203.

REHABILITATION & GERIATRIC MEDICINE

Placement – Eighth Semester **Time:** Theory – 80 hours
Practicals-20 hours

Course description: This course is designed to enable the students to understand the principles of rehabilitation medicine and geriatric medicine and the role of physiotherapy in the rehabilitation team management of the impaired and the physically challenged.

I – REHABILITATION MEDICINE

Rehabilitation Medicine– 60 hours

Unit	Time (Hrs)	Content	Teaching method
I	5	INTRODUCTION TO REHABILITATION Definition Aims and principles Impairment, Disablement, Handicap Rehabilitation team and its members Physiotherapy in rehabilitation	Lecture Discussion
II	2	COMMUNICATION DISORDERS Communication & its disorders Principles of management	Lecture Discussion
III	2	BEHAVIOURAL DISORDERS Behaviour & its disorders Principles of management	Lecture Discussion
IV	4+1	PAIN MANAGEMENT • Theories of pain • Therapeutic modalities in pain management • Myofascial pain syndrome - management	Lecture Demonstration
V	8+2	PHYSICAL DYSFUNCTION Methods of evaluation for physical dysfunction Management of disabilities with reference to: Spinal cord injury, Cerebral palsy, Stroke, Burns, Arthritis, Peripheral nerve lesions, sports injuries & Cardio-respiratory dysfunction.	Lecture Demonstration
VI	6+2	ORTHOSIS Definition & types of Orthosis Principles of prescription of orthotic devices Various orthotic devices & function Indications & Contra-indications for orthosis	Lecture Demonstration
VII	3+1	PROSTHESIS • Definition, types & functions of prosthesis • Various types of artificial limbs	Lecture Demonstration

Unit	Time (Hrs)	Content	Teaching method
VIII	3+1	MOBILITY AIDS • Definition, types & functions of mobility aids • Indications for different types of mobility aids	Lecture Discussion
XI	3	VOCATIONAL REHABILITATION Pre-vocational evaluation Principles & methods of vocational training	Lecture Discussion
X	3	ARCHITECTURAL BARRIERS Definition Architectural components as barriers for the impaired Principles of modifications with reference to Rheumatoid arthritis, Cerebro vascular accident, spinal cord injury, and other disabling conditions.	Lecture Discussion
XI	3	DISABILITY & SOCIAL REHABILITATION • Principles & uses of disability evaluation • Legal aspects of disability: Benefits & compensation available for them.	Lecture Discussion
XII	3	SOCIAL IMPLICATIONS & LEGAL ASPECTS OF DISABILITY Overview of the social implications of disability for the individual & for the community Overview of the legal aspects of disability	Lecture Discussion
XIII	5+3	COMMUNITY BASED REHABILITATION Principles of Community based rehabilitation Advantages of community based rehabilitation over institution based rehabilitation system.	Lecture Discussion

II – GERIATRIC MEDICINE.

Geriatric Medicine– 40 hours

Unit	Time (Hrs)	Content	Teaching method
I	8+5	AGING • Physiological & psychological changes of aging • Prevention of falls in the elderly – preventive exercises & education • Musculoskeletal diseases in the elderly	Lecture Discussion
II	10+2	GERIATRIC REHABILITATION Role of rehabilitation in geriatrics Process of rehabilitation & team approach Functional assessment of the elderly Sites of geriatric rehabilitation Aging & exercises Aging & nutrition	Lecture Discussion
III	8+2	PROLONGED IMMOBILITY Causes for prolonged immobility Complications of prolonged immobility Management of these complications	Lecture Discussion
IV	4+1	GERIATRIC HOME Elderly and the family Recreational activities for the elderly	Lecture Discussion

SPORTS PHYSIOTHERAPY

Placement – Eighth Semester

Time: Theory – 20 hours
Practicals-20 hours

Course description: The course is designed to enable the students to understand the basics of sports health and injuries, the principles of sports physiotherapy.

Unit	Time (Hrs)	Content	Teaching method
I	4+2	INTRODUCTION Exercise & its physiological response Fitness testing Training schedule Sex differences in exercises Aging and exercise	Lecture Demonstration
II	5+5	ATHELETIC INJURIES Common injuries in limbs Physiological responses to: muscle, ligament, tendon, bone, and synovial structures.	Lecture Demonstration
III	5+5	MANAGEMENT Prevention of injuries Principles of assessment Principles of treatment	Lecture Demonstration
IV	6+8	SPORTS PHYSIOTHERAPY Principles and goals of sports physiotherapy Modalities in treatment: Therapeutic exercises, massage, electrotherapy, hydrotherapy Use of protective devices	Lecture Demonstration

Reference:

* Zulunga *et al,* SPORTS PHYSIOTHERAPY – Applied Science & Practice, Churchill Livingstone, ISBN 0443048045.

VETERINARY PHYSIOTHERAPY

Placement – Eighth Semester **Time:** Theory – 10 hours
Practicals-10 hours

Course description: The course is designed to enable the students to have knowledge of the role of physiotherapy in treating the various disorders in animals and to develop the professional work.

Unit	Time (Hrs)	Content	Teaching method
I	2	INTRODUCTION TO VETERINARY PHYSIOTHERAPY History of Veterinary Physiotherapy & rehabilitation Practice issues in Veterinary Physiotherapy Concepts of Veterinary Physiotherapy & Rehabilitation	Lecture Discussion
II	2+1	VETERINARY MEDICINE Basic concepts: Behaviour, Anatomy, Exercise Physiology & Wound healing Responses to musculoskeletal tissues to disuse & mobilisation	Lecture Discussion
III	2+2	ASSESSMENT Osteoarthritis in canines Physical examination Muscle strength & functions Gait analysis	Lecture Discussion & Demonstration in animals
IV	1+3	THERAPEUTIC MODALITIES Therapeutic Ultrasound Superficial thermal modalities Electrical stimulation Therapeutic exercises Therapeutic massage Aquatic therapy	Lecture Discussion Demonstration
V	3+4	PHYSIOTHERAPY FOR: Orthopaedic patients Neurologic patients Geriatric & arthritic patients Critically injured patients Development of rehabilitation facility for small animals.	Lecture & Demonstration in Veterinary hospital / clinics

References:

1. Canine Rehabilitation and Physical Therapy, Millis, Levine & Taylor, Elsevier publishers, ISBN 0721695558.
2. Cash's Textbook of Medical & Surgical conditions for Physiotherapists, Jaypee brothers.

PRINCIPLES OF MANAGEMENT

Placement – Eighth Semester **Time:** Theory – 20 hours

Course description: This course is designed to students to acquire understanding the principles & methods of management in physiotherapy services & educational programmes.

Unit	Time (Hrs)	Content	Teaching method
I	3	INTRODUCTION TO MANAGEMENT Definition, concepts & theories Principles, functions of management	Lecture Discussion
II	4	MANAGEMENT PROCESS Planning Staffing & Human resource management Budgeting Material management Directing process (Leading) Controlling	Lecture Discussion
III	6	MANAGEMENT OF PHYSIOTHERAPY SERVICES Planning: Patient care units, emergency management Human resource management: Recruiting, selecting, deploying, retaining, promoting Patient classification system Staff development & welfare Budgeting: Proposal, staff, equipment & supplies requirements Material management: Procurement, inventory control, auditing & maintenance Directing & leading: Delegation, participatory management, staff development, discipline maintenance Controlling / Evaluation: Physiotherapy rounds & visits, Quality assurance model, documentation of records & reports, performance appraisal	Lecture Discussion, Demonstration, Case study, Assignments & reports.
IV	3	ORGANISATIONAL BEHAVIOUR & HUMAN RELATIONS Concepts, communication channels, leadership styles, motivation & group dynamics Public relations: Professional, Clinical & Social Collective bargaining	Lecture, Case Discussion, Practice session
V	4	MANAGEMENT OF EDUCATIONAL INSTITUTIONS Physiotherapy institution College & Hostel: structure, committees & Management Equipments, clinical & transport facilities, institutional records & reports	Lecture, Group Discussion

EDUCATION TECHNOLOGY

Placement – Eighth Semester **Time:** Theory – 20 hours
Practicals-20 hours

Course description: The course is designed to help the students to acquire an understanding of the principles & methods of teaching. It helps to develop skills in communication, interpersonal relations, teaching the individuals & groups in clinical, community & educational settings.

Unit	Time (Hrs)	Content	Teaching method
I	3+2	COMMUNICATION & INTERPERSONAL RELATION Communication: Process, facilitators, barriers & overcoming methods, techniques. Interpersonal relations: Purpose, phases, barriers & overcoming methods Human relations: Self-realisation, Social behaviour, motivation & attitudes, Teamwork. Guidance & Counseling: Definition, purpose, basic principles, types of counseling, and role of counselor.	Lecture Discussion, Role-plays, Exercises to students
II	2+1	PRINCIPLES OF EDUCATION & TEACHING – LEARNING PROCESS Education: Meaning, aims, functions, principles Learning: Nature & Characteristics Teaching: Principles & maxims, formulating objectives (general & specific), lesson planning, classroom management.	Lecture Discussion, Exercises to students
III	7+8	TEACHING METHODS Lecture, demonstration, group discussion, seminar, symposium, panel discussion, role play, project, field trip, workshop, exhibition, programmed teaching, computer aided learning, microteaching, problem based learning, self instructional module & simulation. Clinical teaching methods: Case method, Physiotherapy rounds & reports, bedside clinics.	Lecture Discussion, Conduct 5 teaching methods using different methods & media
IV	3+4	EDUCATIONAL MEDIA Audio-visual aids: Purpose, types, principles, sources Graphical aids: Chalk board, chart, graph, poster, flash card, flannel graph, bulletin and cartoon. 3 - dimensional aids: Objects, specimens, models Projected aids: Slides, Overhead projection, Films, television, VCP/VCD, camera, LCD etc. Audio aids: Tape recorder, Public address system. Computer / multimedia	Lecture Discussion, Demonstration, Prepare different teaching aids – projected & non-projected

Unit	Time (Hrs)	Content	Teaching method
V	3+2	ASSESSMENT Evaluation & assessment: Purpose, scope, criteria for selection of techniques & methods Assessment of knowledge: Essay type questions, short answer questions, multiple-choice questions. Assessment of skills: Observation checklist, practical exam, viva-voce, objective structured clinical examination. Assessment of attitudes: attitude scales.	Lecture Discussion, Exercises on assessment tools
VI	2+3	HEALTH EDUCATION Health Education & Behaviour: Planning Individuals, groups & communities Communicating messages Methods & media for communication	Lecture Discussion, Plan & conduct health sessions to individuals & group

References:

1. Educational Technology by K.L.Kumar
2. Philosophy of Education by J.Krishnamoorty

PROJECT WORK

Placement – Seventh & Eighth Semester **Time:** 150 hours

Course description: This course is structured to enable the student to conduct/ participate in need based research studies in various settings and utilize for conducting individual / group research project and submit a research report after completion of the study / work.

The project study shall be done by individuals or by group of individual students of the same class. The student should identify a problem area of relevance to the theory and / or practice of Physiotherapy to carry out an investigation of one aspect of that problem area, and to present a clear report on the process and results of the project work done.

The students are encouraged to identify problems of special interest to them that fall within the interest areas of Physiotherapy services, and to aim towards knowledge on the topic in the specified problem area.

The objective of this course is that at the end of the project / special study, the student will have developed skills critical thinking, research methods including formulation of a problem of study, review of literature, selection of a research design to investigate the problem, sampling and data collection, analysis of the data collected and presentation of information obtained.

After the completion of the study, project report should be submitted for evaluation at the end of the final examination of the course.

The internal evaluation shall be done objectively based on the candidate's attitude, involvement and the quality of work done for the study.

The internal evaluation marks shall be submitted by the respective project guide after the completion of the study / report.

The examiner appointed by the University at the final examinations shall do the external evaluation.

The internal evaluation of the project carries 50% of total marks of the project and the other 50% by the external evaluation.