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

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3
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 Table I.

**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.

*** *** ***
## COURSE STRUCTURE
### Table–I COURSE OF STUDY
#### FIRST YEAR (1140 hours)

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<tr>
<th>Sl. No.</th>
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<th>Total (in hours)</th>
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<td>5.</td>
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<td>First-aid &amp; Basic Nursing Procedures</td>
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<td><strong>Clinical orientation</strong></td>
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<td>Computer &amp; its applications</td>
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*Clinical Training*  

**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*  

**Total Hours**  

600
TABLE-I
INTERNERSHIP

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

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## VIII Semester

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## SCHEME OF UNIVERSITY EXAMINATION

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PATTERN OF QUESTION PAPER

Maximum 3 hours  Maximum 75 marks

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

SECTION – A

(40 Marks)

1. Essay question:  
   (a)  
   or  
   (b)

2. Write short notes on any five of the following:  
   (a)  
   (b)  
   (c)  
   (d)  
   (e)  
   (f)

SECTION – B

(35 Marks)

1. Essay question:  
   (a)  
   or  
   (b)

2. Write short notes on any four of the following:  
   (a)  
   (b)  
   (c)  
   (d)  
   (e)  

   * * *
**Note:**

<table>
<thead>
<tr>
<th>Paper</th>
<th>Section – A</th>
<th>Section – B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Psychology &amp; Sociology</td>
<td>Psychology</td>
<td>Sociology</td>
</tr>
<tr>
<td>2. Medicine &amp; Paediatrics, Surgery</td>
<td>Medicine &amp; Paediatrics</td>
<td>Surgery</td>
</tr>
<tr>
<td>3. Pathology &amp; Microbiology</td>
<td>Pathology</td>
<td>Microbiology</td>
</tr>
</tbody>
</table>

*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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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.

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<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| I    | 4          | INTRODUCTION  
\hspace{1cm}Definition  
\hspace{1cm}Schools of Psychology  
\hspace{1cm}Methods of Psychology  
\hspace{1cm}Branches of Psychology | Lecture Discussion |
| II   | 4          | HEREDITY AND ENVIRONMENT  
\hspace{1cm}Twins  
\hspace{1cm}Importance of heredity and environment  
\hspace{1cm}Role in relation to physical characteristics  
\hspace{1cm}Intelligence and personality  
\hspace{1cm}Nature-nature controversy | Lecture Discussion |
| III  | 10         | DEVELOPMENT AND GROWTH BEHAVIOUR  
\hspace{1cm}Infancy, Childhood, Adolescence, Adulthood, Middle age, Old age. | Lecture Discussion |
| IV   | 3          | INTELLIGENCE  
\hspace{1cm}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  
\hspace{1cm}Definitions of motive, drive, incentive and reinforcement, Basic information about primary needs: Hunger, Thirst, Sleep, Elimination activity, Air, Avoidance of pain, Attitude to sex.  
\hspace{1cm}Psychological needs | Lecture Discussion |
| VI   | 3          | EMOTIONS  
\hspace{1cm}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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 chronic 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 |
SOCIOMETRY

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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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<tbody>
<tr>
<td>VI</td>
<td>5</td>
<td>BALANCED DIET</td>
<td>Lecture</td>
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<td>Concept</td>
<td>Discussion</td>
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<td>Recommended Daily Allowance</td>
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<td>Nutritive value of foods</td>
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<td>Planning balanced diets for different categories of</td>
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<td>people</td>
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<td>Budgeting of food</td>
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</table>
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

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

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

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

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

Placement – Second Semester

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]

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<td>INTRODUCTION TO ANATOMICAL TERMS</td>
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<tr>
<td></td>
<td></td>
<td>Definitions, subdivisions, systems of the body</td>
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<td></td>
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<td>Cell: Structure, composition, function, cell division</td>
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<td>Tissues: Definition, types, characteristics, classification, location, functions</td>
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<td>Genes and chromosomes</td>
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<td>II</td>
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<td>CARDIO VASCULAR SYSTEM</td>
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<td>Structure of heart, blood vessels</td>
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<td>Blood and nervous supply of the heart</td>
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<td>Structure of Lymphatic organs and vessels</td>
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<td>Functional roles</td>
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<td>IV</td>
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<td>RESPIRATORY SYSTEM</td>
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<td>Structure of the organs of the respiratory system</td>
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<td>Muscles of respiration, tracheobronchial tree, bronchopulmonary segments</td>
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<td>Structure of the alimentary tract and organs of digestive system</td>
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<td>Anatomy of the liver and pancreas</td>
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<td>GENITO-URINARY SYSTEM</td>
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<td>Structure of the organs of the genito-urinary system</td>
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<td>VII</td>
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<td>ENDOCRINE SYSTEM</td>
<td>Lecture Demonstration</td>
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<td>Structure of endocrine glands</td>
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<td>VIII</td>
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<td>NERVOUS SYSTEM</td>
<td>Lecture Demonstration</td>
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<td>Division of the nervous system and their organs</td>
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<td>Structure and functions of nerve cell.</td>
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<td>Structure of brain, spinal cord and peripheral nerves (in detail)</td>
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<td>Structure &amp; location of autonomic nervous system</td>
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<td>Unit</td>
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<td>Teaching method</td>
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<tr>
<td>IX</td>
<td>5</td>
<td><strong>OSTEOLOGY</strong>&lt;br&gt;Definition and types of skeletal system&lt;br&gt;Classification of bones&lt;br&gt;Ossification: definition, types and process</td>
<td>Lecture&lt;br&gt;Discussion, Demonstration</td>
</tr>
<tr>
<td>X</td>
<td>5</td>
<td><strong>ARTHROLOGY</strong>&lt;br&gt;Definition and classification of joint&lt;br&gt;Functions of joints: mobility &amp; stability</td>
<td>Lecture&lt;br&gt;Discussion, Demonstration</td>
</tr>
<tr>
<td>XI</td>
<td>5</td>
<td><strong>MYOLOGY</strong>&lt;br&gt;Structure and types of muscles&lt;br&gt;Skeletal muscles: classification, forms &amp; groups&lt;br&gt;Position, origin, insertion, nerve supply and action of skeletal muscles</td>
<td>Lecture&lt;br&gt;Discussion, Demonstration</td>
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</tbody>
</table>

**II - REGIONAL ANATOMY** [130 HOURS]

<table>
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<tr>
<th>Unit</th>
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<th>Teaching method</th>
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<tbody>
<tr>
<td>XII</td>
<td>45</td>
<td><strong>UPPER EXTREMITY</strong>&lt;br&gt;Osteology, arthrology, myology of the following:&lt;br&gt;Pectoral region&lt;br&gt;Scapular region&lt;br&gt;Axilla&lt;br&gt;Shoulder girdle and arm&lt;br&gt;Elbow and forearm&lt;br&gt;Wrist and hand&lt;br&gt;Nerves of upper limb&lt;br&gt;Blood vessels of upper limb</td>
<td>Lecture&lt;br&gt;Demonstration</td>
</tr>
<tr>
<td>XIII</td>
<td>50</td>
<td><strong>LOWER EXTREMITY</strong>&lt;br&gt;Osteology, arthrology, myology of the following:&lt;br&gt;Pelvic &amp; gluteal region&lt;br&gt;Hip &amp; thigh region&lt;br&gt;Knee &amp; leg&lt;br&gt;Ankle &amp; foot&lt;br&gt;Nerves &amp; Blood vessels of lower limb</td>
<td>Lecture&lt;br&gt;Demonstration</td>
</tr>
<tr>
<td>XIV</td>
<td>20</td>
<td><strong>TRUNK</strong>&lt;br&gt;Osteology, Arthrology, myology and their relations of:&lt;br&gt;Vertebral Column&lt;br&gt;Thoracic cage&lt;br&gt;Abdomen&lt;br&gt;Pelvis</td>
<td>Lecture&lt;br&gt;Demonstration</td>
</tr>
<tr>
<td>XV</td>
<td>15</td>
<td><strong>HEAD &amp; NECK</strong>&lt;br&gt;Musculoskeletal and neurovascular features of neck and cranium&lt;br&gt;Cranial nerves</td>
<td>Lecture&lt;br&gt;Demonstration</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| I    | 4          | CELL PHYSIOLOGY  
Cell: Structure & functions of components  
Functions of membranes & glands | Lecture |
| III  | 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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 regeneration 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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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.

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<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
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| 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 ELECTRICITY  
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 |
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<th>Unit</th>
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<td>Surged Faradism</td>
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<td>Magnetic effect of an electric current</td>
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<td>Electromagnetic induction</td>
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<td>Transmission by conduct</td>
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<td>Magnetic field and magnetic forces</td>
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<td>MOVING COIL MILLIAMMETER</td>
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<td>Construction &amp; Working</td>
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<td>Types: Diode, Triode, Double anode diode</td>
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<td>Principles of Thermionic valves</td>
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<td>Construction and working of different valves.</td>
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<td>GRID Diagram and working Uses</td>
<td>Lecture Discussion &amp; Demonstration</td>
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<td></td>
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<td>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.</td>
<td>Lecture Discussion &amp; Demonstration.</td>
</tr>
<tr>
<td>XV</td>
<td>5</td>
<td>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.</td>
<td>Lecture Discussion &amp; Demonstration.</td>
</tr>
<tr>
<td>XVI</td>
<td>2</td>
<td>ELECTRO MAGNETIC WAVES Definition Electromagnetic spectrum – Production and its properties</td>
<td>Lecture Discussion &amp; Demonstration</td>
</tr>
<tr>
<td>XVII</td>
<td>1</td>
<td>LASER Definition Types Production and principle</td>
<td>Lecture Discussion &amp; Demonstration</td>
</tr>
<tr>
<td>XVIII</td>
<td>3</td>
<td>ACTINOTHERAPY Define heat and temperature Physical effects of heat Transmission of heat Sources of therapeutic heat Radiant energy and its properties Laws governing radiation</td>
<td>Lecture Discussion &amp; Demonstration</td>
</tr>
</tbody>
</table>
**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.

<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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. |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>6+2</td>
<td>IMMUNITY • Immunity: Types, classification • Antigen and antibody reaction • Hypersensitivity – skin test • Serological tests • Immunoprophylaxis • Vaccines &amp; sera: Types, classification, storage and handling, cold chain. • Immunisation for various diseases • Immunisation schedule</td>
<td>Lecture Discussion, Demonstration.</td>
</tr>
<tr>
<td>VI</td>
<td>6+2</td>
<td>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</td>
<td>Lecture Discussion, Demonstration.</td>
</tr>
<tr>
<td>VII</td>
<td>4</td>
<td>MISCELLANEOUS • Infection of Candidacies, Cryptococcy, Dermatophytoses, Mycetema, Aspergillosis. • Viral infections: Hepatitis, Poliomyelitis, HIV, rabies, etc.</td>
<td>Lecture Discussion.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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 - B12  
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, |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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 - Pancreatititis, 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
<tbody>
<tr>
<td>XIII</td>
<td>1+1</td>
<td>BLOOD Anaemia</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>XIV</td>
<td>3+2</td>
<td>INFECTION Bacterial Viral Parasitic</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>XV</td>
<td>1</td>
<td>CHROMOSOMAL ABNORMALITIES Down’s Syndrome Haemophilia</td>
<td>Lecture Discussion</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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, B12 & 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| V    | 8          | BONE, JOINT, CONNECTIVE TISSUE DISORDERS  
Introduction to autoimmune disease  
Systemic lupus erythematosis, Polymyositis,  
Dermatomyositis, Polyarthritis nodasa, Scleroderma  
Rheumatoid arthritis  
Osteoarthritis | 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.

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<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 |

47
<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>2</td>
<td>HEAD AND NECK SURGERY Hemi mandibulectomy</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>VI</td>
<td>2</td>
<td>FACIAL FRACTURES Lefort-I Lefort-II Lefort-III</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>VII</td>
<td>2</td>
<td>JAW OSTEOTOMIES Mandibular osteotomy Maxillary osteotomy</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>VIII</td>
<td>1</td>
<td>FACIAL PALSY - Facial slings</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>IX</td>
<td>1</td>
<td>CLEFT LIP &amp;PALATE</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>X</td>
<td>1</td>
<td>PRESSURE SORE</td>
<td>Lecture Discussion</td>
</tr>
<tr>
<td>XI</td>
<td>1</td>
<td>LYMPHOEDEMA</td>
<td>Lecture Discussion</td>
</tr>
</tbody>
</table>

**Reference:**

1. Bailey & Love’s Short Practice of Surgery
**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.

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

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

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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          | VISUAL FAILURE  
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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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  
# THERAPEUTIC MASSAGE

**Placement** – Third Semester

**Time:** Theory - 40 hours  
                      Practical - 60 hours

**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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| I    | 2          | INTRUDUCTION 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. |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
<tbody>
<tr>
<td>VI</td>
<td>5</td>
<td>PHYSIOLOGICAL EFFECT OF  &lt;br&gt; Stroking  &lt;br&gt; Pressure manipulation  &lt;br&gt; Tapotement  &lt;br&gt; Friction  &lt;br&gt; Shaking</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>VII</td>
<td>3</td>
<td>THERAPEUTIC EFFECT OF  &lt;br&gt; Stroking  &lt;br&gt; Pressure manipulation  &lt;br&gt; Tapotement  &lt;br&gt; Friction  &lt;br&gt; Shaking</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>VIII</td>
<td>3</td>
<td>CONTRA INDICATIONS FOR  &lt;br&gt; Stroking  &lt;br&gt; Pressure manipulation  &lt;br&gt; Tapotement  &lt;br&gt; Friction  &lt;br&gt; Shaking</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>IX</td>
<td>2+10</td>
<td>PRACTICAL ASPECT OF MASSAGE  &lt;br&gt; Positioning of patient  &lt;br&gt; Draping  &lt;br&gt; Stance of the therapist  &lt;br&gt; Attitude and approach of the therapist  &lt;br&gt; Contact and continuity of the therapy  &lt;br&gt; Lubricant  &lt;br&gt; Accessories</td>
<td>Lecture Discussion,</td>
</tr>
<tr>
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<td></td>
<td>Lecture Discussion,</td>
</tr>
<tr>
<td>X</td>
<td>5+15</td>
<td>SEQUENCE OF MASSAGE FOR  &lt;br&gt; Upper limb  &lt;br&gt; Lower limb  &lt;br&gt; Back  &lt;br&gt; Neck  &lt;br&gt; Face</td>
<td>Lecture Discussion,</td>
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<td>Lecture Discussion,</td>
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<td>Lecture Discussion,</td>
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<tr>
<td>XI</td>
<td>2+12</td>
<td>THERAPEUTIC APPLICATION OF MASSAGE</td>
<td>Lecture Discussion,</td>
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<td>Lecture Discussion,</td>
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<td>Lecture Discussion,</td>
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</tbody>
</table>

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.

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

**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

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

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

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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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. |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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  
| 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. |
<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| I    | 10         | ELECTRO PHYSIOLOGY  
• Membrane physiology  
• Resting potential  
• Action potential  
• Propagation of action potential  
• Motor units  
• Synapse and synaptic transmission  
• 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. |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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:
2. 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.

<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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<tbody>
<tr>
<td>I</td>
<td>10</td>
<td>BIOMECHANICAL JOINT APPLICATION</td>
<td>Lecture, Demonstration</td>
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<tr>
<td></td>
<td></td>
<td>Introduction to biomechanics</td>
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<td>Kinetics</td>
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<td></td>
<td>Kinematics</td>
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</tr>
<tr>
<td>II</td>
<td>5</td>
<td>JOINT STRUCTURE AND FUNCTION</td>
<td>Lecture, Demonstration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Joint Structure: Connective tissue, joint design.</td>
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<td>Joint Function: Joint motion, Kinematic chain</td>
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<td>General changes with disease, injury, immobilization &amp; exercise</td>
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<td>III</td>
<td>5</td>
<td>MUSCLE STRUCTURE AND FUNCTION</td>
<td>Lecture Discussion</td>
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<tr>
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<td>Elements of Muscle Structure</td>
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<td>Muscle Function &amp; Classification</td>
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<td>Effects of immobilization and aging</td>
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<td>IV</td>
<td>7</td>
<td>VERTEBRAL COLUMN</td>
<td>Lecture Discussion</td>
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<td>Structure</td>
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<td>Function</td>
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<td>Muscles of the Vertebral Column</td>
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<td>Effects of Aging, Injury, and Developmental Deficits</td>
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<tr>
<td>V</td>
<td>5</td>
<td>THORAX AND CHEST WALL</td>
<td>Lecture Discussion</td>
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<tr>
<td></td>
<td></td>
<td>Structure</td>
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<td>Function</td>
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<td></td>
<td>Pathological changes in structure and function</td>
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<td>Unit</td>
<td>Time (Hrs)</td>
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</tbody>
</table>
| VI   | 3          | TEMPRO MANDIBULAR JOINT  
  Structure  
  Function  
  Dysfunction |
| VII  | 8          | SHOULDER COMPLEX  
  Components of the Shoulder Complex  
  Integrated function of the shoulder Complex |
| VIII | 5          | ELBOW COMPLEX  
  Structure  
  Function  
  Effects of Immobilization and Injury |
| IX   | 5          | WRIST AND HAND COMPLEX  
  Wrist Complex  
  Hand Complex  
  Prehension  
  Functional Position of the Wrist and Hand |
| X    | 5          | HIP COMPLEX  
  Structure  
  Function  
  Hip joint forces and muscle function in stance  
  Hip joint pathology |
| XI   | 5          | KNEE COMPLEX  
  Structure  
  Function  
  Effects of Injury and Disease |

**Teaching method**: Lecture Discussion
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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:

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.

<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| I    | 24         | GENERAL PHARMACOLOGY  
• Definition & classification of drugs  
• Pharmacokinetics & 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  
• Glucocortic  
• 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  
• Bronchodilators  
• 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 |

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

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 – 120 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 type of Exercise and enable them to demonstrate different Exercise therapy techniques and describe their effects.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 & conra 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  
| 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. |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time Hrs</th>
<th>Content</th>
<th>Teaching method</th>
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<tbody>
<tr>
<td>V</td>
<td>5+10</td>
<td>PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION</td>
<td>Lecture Discussion, Demonstration, Practice by students.</td>
</tr>
</tbody>
</table>
| V    | 5+10     | • 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. | |
| VI   | 5+10     | RE EDUCATION | Lecture Discussion, Demonstration, Practice by students. |
|      |          | • Principles  
|      |          | • Techniques of re education  
|      |          | • Effects and uses  
|      |          | • Indication & contra indication for muscle reeducation  
|      |          | • Techniques of reeducation for –(elbow flexors, extensors-wrist flexor, extensors-knee flexors, extensor, - ankle dorsiflexors, plantar flexors) | |
| VII  | 5+10     | PROGRESSIVE RESISTED EXERCISES (DE-LORMES, MACQUEEN, OXFORD) | Lecture Discussion, Demonstration, Practice by students. |
|      |          | • 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 | |
| VIII | 5+10     | SUSPENSION THERAPY | Lecture Discussion, Demonstration, Practice by students. |
|      |          | • 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, internal & external rotation, Knee - flexion, extension. | |
| IX   | 5+15     | JOINT MOBILITY | Lecture Discussion, Demonstration, Practice by students. |
|      |          | • Causes joint limitation  
|      |          | • Principle of joint mobilization  
<p>|      |          | • Technique of joint mobilization for - (Upper extremity joints, Lower extremity joints, Trunk, Thorax) | |</p>
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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.

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<th>Unit</th>
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<th>Teaching method</th>
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</table>
| 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, intolerent 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 |
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| 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 Cryotherapy  
   - 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- 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

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<th>Unit</th>
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</table>
| 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 |
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| 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 |
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| 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 REHABILITATION 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.

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| 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. |
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<th>Unit</th>
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| 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. |
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| XII  | 8          | CHRONIC ARTHRITIS  
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, PAINFUL 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  
- Microbiology  
- 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. |
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| 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.

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<th>Unit</th>
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</table>
| 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. |
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| 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  
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.

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<th>Unit</th>
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| 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 ECG | 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 pathogenesis  
  • Classifications  
  • Symptoms  
  • Diagnosis  
  • Medical and surgical treatment | Lecture Discussion |
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<td>VII</td>
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<td>HYPERTENSION</td>
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<td>• Symptomatology</td>
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<td>VIII</td>
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<td>INFECTIVE ENDOCARDITIS</td>
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<td>• Aetiology</td>
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<td>• Pathogenesis</td>
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<td>DEEP VEIN THROMBOSIS</td>
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<td>• Aetiology</td>
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<td>PULMONARY EMBOLISM</td>
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<td>Lecture Discussion</td>
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<td>XI</td>
<td>2</td>
<td>ARTERIAL DISEASES (Atherosclerosis, Burger’s disease)</td>
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<td>INTRODUCTION TO CARDIAC SURGERY</td>
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<td>• Types of incision</td>
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<td>• Pre and post operative assessment</td>
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<td>• Management</td>
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<td>Lecture Discussion, Demonstration.</td>
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<td>CARDIAC SURGERY</td>
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<td>Indication, Contra indication, Site of incision, pre and post operative management of:</td>
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<td>• Valvotomy and valve replacement</td>
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<td>• Open heart surgery / cardiac bypass surgery</td>
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<td>• Surgery of pericardium</td>
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<td>• Heart transplantation</td>
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<td>• Coronary angio plasty</td>
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<td></td>
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<td>• Balloon angioplasty and vascular surgery</td>
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<td>Lecture Discussion, Demonstration.</td>
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<tr>
<td>XIV</td>
<td>2</td>
<td>PRINCIPLES OF CARDIO VASCULAR STRESS TESTING</td>
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<td>Lecture Discussion, Demonstration.</td>
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</table>

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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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<tbody>
<tr>
<td>I</td>
<td>5</td>
<td>REVIEW OF ANATOMY OF RESPIRATORY SYSTEM</td>
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<tr>
<td></td>
<td></td>
<td>• Anatomy of lung, bronchi, bronchopulmonary segment</td>
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<td></td>
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<td>• Relationship of bony thorax and lung</td>
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<td>• Relationship of abdominal content and lung</td>
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<td>• Variations of bony cage in-cervical ribs, rickets &amp; rickety rosary, pigeon chest, funnel chest, scoliosis, kyphosis.</td>
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<td></td>
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<td>• Movements of thorax in respiration</td>
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<td>• Muscles of respiration</td>
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<td>Lecture Discussion, Demonstration.</td>
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<tr>
<td>II</td>
<td>5</td>
<td>REVIEW OF PHYSIOLOGY OF RESPIRATORY SYSTEM</td>
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<td></td>
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<td>• Physiological control of respiration (respiratory center &amp; receptors)</td>
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<td>• Cough reflex</td>
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<td>• Mechanical factors affecting breathing</td>
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<td>• Factor affecting lung compliance &amp; airway resistance</td>
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<td>• Factor affecting diffusion of O₂ &amp; CO₂ in the lung</td>
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<td>• Ventilation – Perfusion &amp; their interrelationship</td>
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<td>• Pulmonary function assessment – P F T</td>
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<td>• Value of blood gas analysis</td>
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<td>Lecture Discussion, Demonstration.</td>
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<td>III</td>
<td>3</td>
<td>CHRONIC BRONCHITIS &amp; EMPHYSEMA</td>
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<td></td>
<td></td>
<td>• Definition</td>
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<td>• Clinical features</td>
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<td>• Investigations</td>
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<td>• Complication</td>
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<td>• Treatment</td>
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<td>Lecture Discussion, Demonstration.</td>
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<td>IV</td>
<td>2</td>
<td>BRONCHIAL ASTHMA</td>
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<td>• Aetiology</td>
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<td>• Clinical features and diagnosis</td>
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<td>• Treatment</td>
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<td>Lecture Discussion, Demonstration.</td>
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<td>V</td>
<td>2</td>
<td>PNEUMONIA</td>
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<td>• Definition</td>
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<td>• Classification</td>
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<td>• Clinical features</td>
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<td>• Complications</td>
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<td>Lecture Discussion, Demonstration.</td>
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</table>
| 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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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.

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<th>Unit</th>
<th>Time (Hrs)</th>
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<th>Teaching method</th>
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<tbody>
<tr>
<td>I</td>
<td>2</td>
<td>Anatomy And Physiology Of Female Reproductive System</td>
<td>Lecture Discussion</td>
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<tr>
<td>II</td>
<td>2</td>
<td>Principles Of Clinical Examination, Investigation, Diagnosis, Prognosis In Female Reproductive System Disorder</td>
<td>Lecture Discussion</td>
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<tr>
<td>III</td>
<td>1</td>
<td>Menstruation And Disorders Of Menstruation</td>
<td>Lecture Discussion</td>
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<td>IV</td>
<td>1</td>
<td>Physiological Changes During Pregnancy</td>
<td>Lecture Discussion</td>
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<td>V</td>
<td>5</td>
<td>Antenatal Care And Diagnosis Of Pregnancy including High Risk Pregnancy</td>
<td>Lecture Discussion, Demonstration.</td>
</tr>
</tbody>
</table>
| 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 tools and help the students to make use of that in the implementation of physiotherapy.

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<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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 TOMOGRAPHY  
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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
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<th>Teaching method</th>
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</table>
| 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 spondylloses, spondylolisthesis.  
Spinal deformities: Kyphosis, Scoliosis, Lordosis. | Lecture  
Demonstration |
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<th>Unit</th>
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<tr>
<td>VII</td>
<td>20</td>
<td>PHYSIOTHERAPY IN DEGENERATIVE &amp; INFECTIVE CONDITIONS</td>
<td>Lecture, Demonstration</td>
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<td></td>
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<td>• Osteoarthritis of major joints</td>
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<td>• Tuberculosis of joints</td>
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<td>• Rheumatoid arthritis</td>
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<td>• Hansen’s disease</td>
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<td>VIII</td>
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<td>PHYSIOTHERAPY IN AMPUTATION</td>
<td>Lecture, Demonstration</td>
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<td>Levels of amputation of upper and lower extremities</td>
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<td>Stump management</td>
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<td>Pre and post prosthesis fitting assessment and management</td>
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<td>Complications of amputations and their management</td>
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<td>IX</td>
<td>15</td>
<td>PHYSIOTHERAPY IN ORTHOPAEDIC SURGERY</td>
<td>Lecture, Demonstration</td>
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<td>X</td>
<td>10</td>
<td>SPINAL TRACTION &amp; PERIPHERAL JOINT MOBILISATION</td>
<td>Lecture, Demonstration</td>
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<td>Principles</td>
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<td>Effects &amp; Uses</td>
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<td>Indications &amp; Contraindications</td>
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<td>Techniques</td>
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**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.

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

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<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
</tr>
</thead>
</table>
| 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
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</thead>
</table>
| 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 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 |
### 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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
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</thead>
</table>
| 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 |
<table>
<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
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</thead>
</table>
| 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.

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<thead>
<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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:
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.

<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| I    | 10         | INTRODUCTION  
Evidence based practice – an overview  
Need for evidence based practice  
History of evidence 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:

## 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

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
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<th>Teaching method</th>
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</table>
| 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 |
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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

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

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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:
**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.

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<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</table>
| 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:**

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.

<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
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</thead>
</table>
| 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.

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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
<th>Content</th>
<th>Teaching method</th>
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</thead>
</table>
| 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 |
<table>
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<tr>
<th>Unit</th>
<th>Time (Hrs)</th>
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</thead>
</table>
| 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.