It is hereby notified for information of all concerned that the authorities of the university has revised syllabus of Bachelor of Physiotherapy (BPT) for implementation for teaching and examinations from the Academic year 2014-15 at the College of Physiotherapy the constituent college of Pravara Institute of Medical Sciences (Deemed University) Loni.

The revised syllabus of Bachelor of Physiotherapy (BPT) is hereby Published for information of all concerned.

The Principal, College of Physiotherapy, Loni Bk - 413 736 is requested to bring the revised syllabus of Bachelor of Physiotherapy (BPT) to the notice of all concerned faculties and all concerned students.

Place : Loni Bk – 413 736.
Date : 18 / 08 / 2014

Copy to:
Hon'ble Chief Executive, PIMS
Hon'ble Vice- Chancellor , PIMS

Copy for information and necessary action to : -
1) The Principal, College of Physiotherapy, Loni Bk – 413 736
2) Controller of Examinations
3) Chief Accountant / Manager Accounts, PIMS
4) Asst. Registrar, (CET / Academic)
5) IT Manager – With a request to upload on university website.
BACHELOR OF PHYSIOTHERAPY

PRAVARA INSTITUTE OF MEDICAL SCIENCES
(DEEMED UNIVERSITY), LONI, MAHARASHTRA, INDIA, 413 736
<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Preamble</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Objectives</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Career opportunities</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Professional Recognition</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>Eligibility</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Age</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Course duration</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Medium of instructions</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>Learning outcomes</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>Dress code</td>
<td>8</td>
</tr>
<tr>
<td>11</td>
<td>Course location</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>Total intake of students</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>Course fee structure</td>
<td>8</td>
</tr>
<tr>
<td>14</td>
<td>Course structure</td>
<td>8-9</td>
</tr>
<tr>
<td>15</td>
<td>Clinical education training</td>
<td>10</td>
</tr>
<tr>
<td>16</td>
<td>Attendance</td>
<td>10</td>
</tr>
<tr>
<td>17</td>
<td>Internal assessment</td>
<td>10</td>
</tr>
<tr>
<td>18</td>
<td>Monitoring process</td>
<td>10</td>
</tr>
<tr>
<td>19</td>
<td>Schedule of examination</td>
<td>11</td>
</tr>
<tr>
<td>20</td>
<td>Eligibility for examination</td>
<td>11</td>
</tr>
<tr>
<td>21</td>
<td>Criteria for pass</td>
<td>11</td>
</tr>
<tr>
<td>22</td>
<td>Declaration of class</td>
<td>12</td>
</tr>
<tr>
<td>23</td>
<td>Grading structure</td>
<td>12</td>
</tr>
<tr>
<td>24</td>
<td>Classification of award</td>
<td>12</td>
</tr>
<tr>
<td>25</td>
<td>Scheme of examination</td>
<td>13-14</td>
</tr>
<tr>
<td>26</td>
<td>Theory examination</td>
<td>14</td>
</tr>
<tr>
<td>27</td>
<td>Pattern of university question paper</td>
<td>14</td>
</tr>
<tr>
<td>28</td>
<td>Pattern of university clinical examination</td>
<td>14</td>
</tr>
<tr>
<td>29</td>
<td>Examiners</td>
<td>15</td>
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<tr>
<td>30</td>
<td>Carry over</td>
<td>15</td>
</tr>
<tr>
<td>31</td>
<td>Internship</td>
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1. **Preamble:** Physiotherapy is an emerging Allied health care profession. Physiotherapy has been traditionally recognized as the branch of Physical Medicine that deals with the treatment of various diseases and disorders with the Physical Medicine modalities. Physical Medicine modalities include exercises, heat, cold, therapeutic currents, joint mobilizations, joint manipulations, soft tissue mobilizations, traction, compression, massage, radiations, sound etc. Physiotherapy is a profession with a holistic approach to the prevention, diagnosis and therapeutic management of conditions affecting human movements. With the advanced research, evidence based practice concepts and the increase in first contact practice, the practice of Physiotherapy is based on contemporary scientific evidence. Physiotherapy includes a range of specialties to meet the health needs of people of all ages. Physiotherapy involves a partnership with clients to achieve better health outcomes. Physiotherapy offers health care in many different settings including private practice, hospitals, community health centers, aged care facilities, industry and clients’ own homes.

The disability profile has been increasing as indicated in the recent surveys by Government of India. New fields like community health centers, industrial health centers, homes for elderly, hospices, rehabilitation centers, schools for disabled, research centers, sports medicine and training centers, non-governmental organizations show an inadequate participation from qualified Physiotherapists. Hence, there is a growing need for the qualified Physiotherapists in our country. Physiotherapy is an allied health care profession characterized by the treatment of various diseases and disorders with the help of skilled use of physiologically-based movement techniques, supplemented when necessary by electrotherapy and other physical means for the prevention and treatment of injury and disease. It is used to assist the process of rehabilitation and restoration of function, including the achievement of personal independence. The work of the Physiotherapist is therefore essential to ensure a good quality of life of individuals ranging from children to the elderly with various disabilities like physical, neurological, psychosocial, sensory and rehabilitation needs and their integration in the community. The specific objective of the therapist is to function as an integral part of a multidisciplinary team to enable those whose abilities in productivity, self-maintenance and leisure are threatened, restricted or lost due to impairment, developmental delay, ageing or lack of opportunity, to become full and productive members of the community. Physiotherapists are therefore of paramount importance in the effective operation of the health care, social welfare and education systems. Physiotherapists play an important role in preventive medicine which includes all pathologies of musculo-skeletal, neuromuscular & cardiovascular system at all ages.
The first three years of study have been designed to equip students with all the basic training needs of a Physiotherapist for general practice, including implementation of treatment after effective Physiotherapy assessment, good communication and interpersonal skills and commitment to ethical and social responsibility. The fourth year of study leads to the award of a Bachelor of Physiotherapy and is designed to meet the research aptitude requirements of the profession. The practical and clinical education training will provide the opportunity for translation of theoretical knowledge into hands-on practice of immediate relevance and will further help students in acquiring professional competence. Graduates with this degree can either pursue higher studies like Doctor of Physiotherapy, Master of Physiotherapy and post graduate diploma or seek employment locally and internationally. Physiotherapists are employable in a wide range of areas like clinics, hospitals, hospices, homes for elderly, schools, industries, sports medicine centers etc and can also choose private practice after they are awarded the Bachelor of Physiotherapy degree.

2. Objectives: Various objectives of education & training Physiotherapy graduates at PIMS are as follows;

- To teach common health problems which are referred for Physiotherapy.
- To train an individual into value based Physiotherapist capable of treating common ailments referred for Physiotherapy.
- To use active, integrated and student centered methods of teaching and learning that encourage clarity of expression, independence of judgment, scientific habits, problem solving abilities, self initiated and self directed learning.

3. Career opportunities: Currently there is shortage of qualified specialist Physiotherapist. Hence, there is demand for this specialty and employment opportunities are excellent. Graduates with this qualification are recognized throughout India and abroad. Shortage of highly qualified Physiotherapists, commands increasing employment & remuneration. They can be employed in super specialty hospitals, general hospitals, teaching institutes, rehabilitation centers for children, schools and can also practice in private setups independently.

4. Professional recognitions: The award of Bachelor of Physiotherapy qualifies the graduates for membership of Maharashtra State Council for Physiotherapy & Occupational Therapy, Indian Association of Physiotherapists. They can also apply to different councils or associations in India and abroad.
5. Eligibility: A candidate seeking admission to first year BPT course should have passed 10+2 examination with English as one of the subjects and Physics, Chemistry and Biology as other subjects and must appear for PIMS AICET ASUG competitive entrance examination and must have come in the merit list by securing not less than 40% marks in Physics, Chemistry and Biology taken together.

6. Age: A candidate seeking admission to Bachelor of Physiotherapy course should have completed 17 years of age, before the commencement of the academic year. Every candidate before admission to the course shall furnish to the Principal of the Institution a certificate of Medical Fitness from an authorized Government Medical Officer to the effect, that the candidate is physically and mentally fit to undergo Physiotherapy course.

7. Duration of the Course: Every student shall undergo a period of certified study extending over 4 academic years from the date of commencement of his/her study for the subject comprising the Physiotherapy curriculum to the date of completion of the examination followed by six months compulsory rotatory internship.

8. Medium of instructions: The medium of instructions for this course shall only be English. This includes theory lectures, practicals, laboratory works and assignments and clinical training.

9. Learning Outcomes: On completion of this course the student will be expected to

9.1 Describe:
- Physiotherapy principles and practice
- Physiotherapy practice guidelines and performance
- The importance of health promotion and wellness
- Professional accountability

9.2 Understand:
- Specific perspectives of the PT in patient care, including inter-professional
- Practice, client and family-centered care
- Common ethical, personal, and professional issues that arise in physical
- therapy practice
- The role of the PT in motivating and educating patients for self-management

9.3 Demonstrate adequate competency in:
- Collaborative effective communication
- Observational skills
- Interviewing skills
- Teaching and learning principles (Identifying, summarizing and communicating new knowledge)
- Understanding and respecting others’ values and beliefs
- Cultural diversity and discrimination issues

9.4 Compare and contrast the role of Physiotherapy in various settings using evidence to support findings.
10. **Dress code:** Professionalism with respect to dressing is encouraged throughout the course. It is each student’s responsibility to have appropriate attire during all class assignments and learning activities.

11. **Course location:** This course is offered at College of Physiotherapy, Pravara Institute of Medical Sciences, Loni, Taluka: Rahata, District: Ahmednagar 413 736, Maharashtra, India.

12. **Total intake of students:** The total intake of students will be fifty per academic year in Pravara Institute of Medical Sciences, Deemed University, Loni.

13. **Course fee structure:** The tuition fee and other fee structure will be as per the notifications by Pravara Institute of Medical Sciences, Deemed University given from time to time. The fee structure is different for resident Indians, non-resident Indian and foreign students.

14. **Course structure:** The details of BPT course structure are as follows; the total hours of academic training (teaching and practical) for all four years equals to 4000 hours. Internship which is distributed over 6 months in different departments accounts for 1200 hours of clinical practice. Credit hours for all subjects have been calculated, where 100 hours equals 5 credits. The detailed distribution in various subjects for different years is as follows:

**FIRST YEAR BPT**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Teaching hours</th>
<th>Total</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Theory</td>
<td>Practical/clinical</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Human Anatomy</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>Human Physiology</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>Human Biomechanics</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>4</td>
<td>Human Psychology</td>
<td>100</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td><strong>Total hours</strong></td>
<td></td>
<td></td>
<td>1000</td>
</tr>
</tbody>
</table>
## SECOND YEAR BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Teaching hours</th>
<th>Total</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Theory</td>
<td>Practical/clinical</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Human Pathology</td>
<td>100</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Human Pharmacology</td>
<td>100</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Electrotherapy</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>Exercise Therapy</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>5</td>
<td>Clinical training</td>
<td>-</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td><strong>Total hours</strong></td>
<td></td>
<td></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

## THIRD YEAR BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
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<th>Total</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Theory</td>
<td>Practical/clinic</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Medicine</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Surgery</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Orthopedic Physiotherapy</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>Neuro-Physiotherapy</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>5</td>
<td>Clinical training</td>
<td>-</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td><strong>Total hours</strong></td>
<td></td>
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<td><strong>1000</strong></td>
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</table>

## FOURTH YEAR BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Teaching hours</th>
<th>Total</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Theory</td>
<td>Practical/clinical</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cardiothoracic Physiotherapy</td>
<td>100</td>
<td>100</td>
<td>200</td>
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<tr>
<td>2</td>
<td>Community Physiotherapy</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>3</td>
<td>General Physiotherapy</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>4</td>
<td>Rehabilitation and Research</td>
<td>50</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>Clinical training</td>
<td>-</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td><strong>Total hours</strong></td>
<td></td>
<td></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>
15. Clinical Education Training: Clinical training is distributed throughout every year of the curriculum in the form of supervised clinical practice where the students are encouraged to participate in clinical reasoning through patient simulated training, mock demonstrations, group discussions, physical diagnosis, investigations and their interpretations, case presentations, observing different investigatory procedures and Physiotherapy interventions. Students will be required to attend clinical sessions on a rotation basis to maintain public service and provide continuity of patient care. To ensure a depth of learning, clinical education will be guided and workplace skills will be supervised and assessed by practicing and qualified physiotherapists.

16. Attendance: Every candidate should have attendance not less than 75% of total classes conducted in theory and practical in each academic year calculated from the date of commencement of the term to the last working day as notified by the University, in each of the subjects prescribed to be eligible to appear for the University examination. A candidate lacking in the prescribed attendance and progress in any subjects in theory or practical/clinical shall not be permitted to appear for the University examination in those subjects.

17. Internal assessment: It shall be based on regular evaluation of periodic tests of assignments, clinical presentations, theory & practical test. There should be a minimum of at least 3 internal examinations and the average of best of two marks should be sent to the University before the commencement of University examination as notified by the examination section from time to time. Internal assessment paper records should be maintained for all students & should be available for scrutiny. The marks of internal assessment tests should be displayed on notice board for the students.

18. Monitoring process: A candidate pursuing B.P.Th course shall study in the concerned department of the college of Physiotherapy, Pravara Institute of Medical Sciences, Loni for the entire period as full time student. No candidate is permitted to work in any other hospital, clinic, college etc., while studying this course. No candidate should join another course of study or appear for any other examination conducted by this university or any other university in India or abroad during the period of registration. Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend lectures, practicals, laboratory works, seminars, weekly case discussions, review meeting, tele-Physiotherapy sessions and state level conferences, national level conferences or
occasionally international conferences during each year as prescribed by the Pravara Institute of medical Sciences, Deemed University, Loni. Every candidate shall maintain a log book and record of his/her participation in the training programs conducted by the department. The log book shall be scrutinized and certified by the Head of the Department and the Principal, College of Physiotherapy, and presented in the university practical examination if called for. Every clinical case discussion, case presentation, seminars, will be monitored by faculty members, guides and peers using relevant checklists.

19. Schedule of Examination: There will be two examinations in a year, an annual Examination and a supplementary examination to be conducted as per notification issued by the University from time to time. The particulars of subjects for various examinations and distribution of marks are shown separately in tables.

20. Eligibility for Examination: To be eligible to appear for University examination a candidate: a) should have undergone satisfactorily the approved course of study in the subject or subjects for the prescribed duration. b) Should have attended at least 75% of the total number of classes in theory and practical jointly to become eligible to appear for examination in those subject/subjects. c) Should secure at least 35% of total marks assigned for internal assessment in particular subject in order to be eligible to appear in the University examination of that subject. d) Who fails in any other subject/subjects of first year BPT, has to put one academic term before he/she becomes eligible to appear for the next examination. e) Shall fulfill any other requirement that may be prescribed by the University from time to time.

21. Criteria for Pass: For declaration of pass in any subject in the university examination, a candidate should pass both in Theory & Practical examinations components separately as stipulated below:

a) For a pass in theory a candidate shall secure not less than 50% marks in aggregate i.e., marks obtained in written examination and internal assessment (theory) added together.

b) For a pass in practical examination, a candidate shall secure not less than 50% marks in aggregate, i.e., marks obtained in university practical examination and internal assessment (practical) added together.

c) A candidate not securing 50% marks in theory and practical examination in a subject shall be declared to have failed in that subject and is required to appear for both theory and practical, again in the subsequent examination in the subject.
22. Declaration of class:
a) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 75% of marks or more of grand total marks prescribed will be declared to have passed the examination with distinction.
b) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 60% of marks or more but less than 75% of grand total marks prescribed will be declared to have passed the examination in First class.
c) A candidate having appeared in the entire subject in the same examination and passed that examination in the first attempt and secure 50% of marks or more but less than 60% of grand total marks prescribed will be declared to have passed the examination in Second class.
d) A candidate passing the University examination in more than one attempt shall be placed in pass class irrespective of the percentage of marks secured by him/her in the examination.

23. Grading Structure: This will be as shown below taking into account that the pass mark for all modules is 50% GRADE POINT AVERAGE (GPA) under the GPA, the following letter grades and their grade point equivalent are used:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Grade Point Average</th>
<th>Percentage Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
<td>90 to 100</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>80 to 90</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
<td>70 to 80</td>
</tr>
<tr>
<td>B+</td>
<td>3.00</td>
<td>65 to 70</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>60 to 65</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
<td>50 to 60</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

24. Classification of Award: The degree classification will be based on the CPA at the end of the Program as follows:

<table>
<thead>
<tr>
<th>CPA (%)</th>
<th>CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;75</td>
<td>Distinction</td>
</tr>
<tr>
<td>60 to 75</td>
<td>First class</td>
</tr>
<tr>
<td>50 to 60</td>
<td>Second Class</td>
</tr>
<tr>
<td>&lt; 50</td>
<td>No Award</td>
</tr>
</tbody>
</table>
25. Scheme of examination:
The detailed scheme of examination for theory and practical or clinical component is described here.

First year BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Theory</th>
<th>Practical</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>University Max. marks</td>
<td>Internal assessment</td>
<td>University Max. marks</td>
</tr>
<tr>
<td>1.</td>
<td>Human Anatomy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>2.</td>
<td>Human Physiology</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>3.</td>
<td>Human Biomechanics</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>4.</td>
<td>Human Psychology</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Second year BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Theory</th>
<th>Practical</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>University Max. marks</td>
<td>Internal assessment</td>
<td>University Max. marks</td>
</tr>
<tr>
<td>1.</td>
<td>Human Pathology</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Human Pharmacology</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Electrotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>4.</td>
<td>Exercisetherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Third year BPT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Subject</th>
<th>Theory</th>
<th>Practical</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>University Max. marks</td>
<td>Internal assessment</td>
<td>University Max. marks</td>
</tr>
<tr>
<td>1.</td>
<td>Medicine</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Surgery</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Orthopedic Physiotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>4.</td>
<td>Neuro Physiotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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</tbody>
</table>
### Fourth year BPT

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Subject</th>
<th>Theory</th>
<th>Practical</th>
<th>Total Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>University Max.marks</td>
<td>Internal assessment</td>
<td>University Max.marks</td>
</tr>
<tr>
<td>1.</td>
<td>Cardio respiratory Physiotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>2.</td>
<td>Community Physiotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>3.</td>
<td>General Physiotherapy</td>
<td>80</td>
<td>20</td>
<td>90</td>
</tr>
<tr>
<td>4.</td>
<td>Research and Rehabilitation</td>
<td>80</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**26. Theory (written examination):** A written examination will be undertaken consisting of four question papers, each of three hours duration & each paper carrying 80 marks.

**27. Pattern of university question paper:**
The pattern of theory question paper for all subjects shall be as follows;

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Type of question</th>
<th>Distribution</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Long essay question(2 questions, no choice)</td>
<td>2X15</td>
<td>30</td>
</tr>
<tr>
<td>2.</td>
<td>Short essay question(8 questions, one choice)</td>
<td>6X5</td>
<td>30</td>
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<tr>
<td>3.</td>
<td>Multiple choice questions</td>
<td>20X1</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

**28. Pattern of university clinical examination (Practical):**
A clinical examination consisting of ninety marks (90) is aimed at examining depth of knowledge, logical reasoning, confidence & oral communication skills. The distribution of marks for the practical examination is given as follows;

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Type of practical /clinical assessment</th>
<th>Distribution</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>One long case</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>2.</td>
<td>Two OSPE/OSCE stations</td>
<td>2X10</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Viva-voce</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>90</strong></td>
</tr>
</tbody>
</table>
29. **Examiners:** There shall be two examiners, one of them shall be an external, outside the university and the other shall be an internal preferably from the same college or as decided by the University.

30. **Carry over or allowed to keep term:** A candidate who has failed in their respective academic year university examination can carry over a maximum of two subjects to their next academic year, but will have to pass the subjects in the subsidiary examination before writing the examination of the next academic year.

31. **Internship:** There shall be six months of compulsory rotatory internship after the final year bachelor of Physiotherapy (BPT) examination. This internship should commence after the candidate is declared to have passed the examination in all the subjects. Internship should be done in a multispecialty teaching hospital recognized by the University/MCI/IAP. The internship should cover all clinical branches concerned with Physiotherapy. No candidate shall be awarded degree certificate without successfully completing six months internship. The clinical duties of the student will be recorded in a logbook. On completion of each posting, the same will have to be certified by the faculty in charge of the posting for both attendance as well as clinical work done. On completion of all the postings, the duly completed logbook will be submitted to the Principal/Head of department to be considered as having successfully completed the internship program.

The various departments covered during the six month rotatory posting are: Pediatric Physiotherapy, Cardiorespiratory Physiotherapy, Community Physiotherapy, NeuroPhysiotherapy, Musculoskeletal Physiotherapy, Geriatric Physiotherapy and Sports Physiotherapy.
I BPT COURSE CONTENTS
HUMAN ANATOMY
{Subject code: PU1101}

Teaching Hours: 300 hours (Theory: 100 hours and Practical: 200hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal Examination: 20 marks Theory and 10 marks Practical
University Examination: 80 marks Theory, 90 marks Practical and viva – voce

Objectives: The objective is to enable the student to understand, analyze and interpret the theoretical and practical concepts of Human Anatomy.

Theory Contents

I. Myology
   - Overview
   - Classification
   - Function
   - Upper and lower limb myology
   - Spinal and facial myology

II. Osteology
    - Overview
    - Structure and Composition
    - Classifications
    - Functions
    - Extremities and spine osteology

III. Arthrology
     - Overview
     - Classifications
     - Functions
     - Movements
     - Peripheral and spinal arthrology

IV. Neuroanatomy
    - Overview
    - Central nervous system
    - Peripheral nervous system
    - Sympathetic nervous system
    - Parasympathetic nervous system

V. Respiratory Anatomy
    - Overview
    - Airway and Lungs:
    - Pleura
    - Mediastinum
    - Diaphragm and Intercostals muscles
VI. Cardiovascular Anatomy
- Pericardium
- Valves of heart
- Heart
- Major arteries and Major veins of the body
- Lymphatic drainage of the body

VII. Abdomen
- Spleen
- Liver
- Pancreas
- Stomach
- Intestines

VIII. Pelvic organs
- Female reproductive organs
- Male reproductive organs
- Kidneys and ureters
- Urinary bladder and urethra
- The rectum and anal canal

IX. Special senses
- Eyes
- Nose
- Ear
- Skin
- Tongue

X. Applied Anatomy
- Clinical anatomy
- Surface anatomy
- Surgical anatomy
- Living anatomy
- Radiological anatomy

Practical contents
1. Dissection of upper and lower extremity
2. Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver
3. Surface Anatomical land marks in upper extremity, lower extremity, head & neck, brain and spinal cord, thorax and abdomen
4. Demonstration of nerves and arteries.
5. Demonstration of movements in important joints.
6. X-ray: Identification of anatomical structure
7. Identification of body prominences on inspection and by palpation especially of extremities
8. Identification of Arches of foot and Arches of hand
9. Identification of Popliteal fossa and Cubital fossa
10. Identification of Axilla and Mammary gland.

**Suggested Reading**

HUMAN PHYSIOLOGY
(SUBJECT CODE: PU 1102)

Teaching Hours: 300 hours (Theory: 100 hours & practical 200 hours)
Maximum Marks: 200 (Theory: 100 and practical: 100)
Assessment: Written, practical and oral internal and university examinations.
Internal examinations: 20 marks theory and 10 marks practical.
University examinations: 80 marks theory and 90 marks practical.
Objectives: To understand the normal muscle physiology, neurophysiology, cardiac physiology, pulmonary physiology, endocrine physiology, integration physiology, renal physiology, gastrointestinal physiology and cellular physiology of human body.

Theory contents

I. Cellular physiology
   ▪ Overview
   ▪ Connective tissue & blood
   ▪ Osseous tissue
   ▪ Muscular tissue
   ▪ Nervous tissue

II. Muscle Physiology
   ▪ Overview
   ▪ Composition
   ▪ Types & properties
   ▪ Contraction
   ▪ Electromyography

III. Neurophysiology
   ▪ Overview
   ▪ CNS
   ▪ ANS
   ▪ PNS
   ▪ EMG

IV. Cardiac physiology
   ▪ Overview
   ▪ Hemodynamics
   ▪ Cardiac cycle
   ▪ Blood pressure
   ▪ ECG

V. Pulmonary physiology
   ▪ Overview
   ▪ Mechanics of breathing
   ▪ Control of respiration
   ▪ Hypoventilation & hyperventilation
   ▪ Resuscitations & Spirometry
VI. Endocrine physiology
- Overview
- Classifications
- Functions of hormones
- Regulation of hormones
- Hormonal disorders

VII. Integration physiology
- Overview
- Special senses
- Skin
- Metabolism
- Thermoregulation

VIII. Gastrointestinal physiology
- Overview
- Functions of GI
- Digestion
- Vomiting
- Deglutition

IX. Renal physiology
- Overview
- Functions of renal system
- Glomerular filtration
- Micturation
- Incontinence

X. Applied physiology
- Sports physiology
- Exercise physiology
- Under water physiology
- Physiology of ageing
- Mountaineering & space physiology

Practical Contents

1. Practicals
- Peripheral pulses
- Bleeding time
- Clotting time
- Complete blood count
- ESR
- Hemoglobin assessment
- Blood grouping
- EMG
- Muscle strength assessment
- Muscle power assessment
- Superficial & deep reflexes
- Reaction time
- Assessment of sensation
- Heart rate
- Heart sounds
- Blood pressure
- ECG
- Harvard step test
- 6 minute walk test
- 12 minute run test
- Respiratory rate
- Breath sounds
- Chest expansion
- PFT & Spirometry
- Effects of breath hold
- Resuscitations

2. Demonstrations
- Amphibian muscle experiments
- RPE
- Exercise ECG
- Exercise tolerance test
- ABG
- Blood lactate sampling
- NCV
- EEG

Suggested Readings
HUMAN BIOMECHANICS
(Subject code: PU1103)

Teaching Hours: 300 hours (Theory: 100 hours and Practical: 200 hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal Examination: 20 marks Theory and 10 marks Practical
University Examination: 80 marks Theory, 90 marks Practical and viva – voce

Objectives: The objective is to enable the student to understand, analyze and interpret the theoretical and practical concepts of Biomechanics of human movement.

Theory Contents

I. Fundamental concepts
   - Force – Motion, Torque, Gravity, Equilibrium
   - Energy, work, Power
   - Axis and planes with clinical application
   - Levers, anatomic pulleys
   - General properties of connective tissues - (Bone, muscles, cartilage, tendons and ligaments, capsule)

II. Temperomandibular joint biomechanics
   - Anatomical aspects
   - Kinetics
   - Kinematics
   - Integrated function
   - Clinical biomechanics

III. Spine biomechanics
   - Anatomical aspects
   - Kinetics
   - Kinematics
   - Integrated function
   - Clinical biomechanics

IV. Shoulder biomechanics
   - Anatomical aspects
   - Kinetics
   - Kinematics
   - Integrated function
   - Clinical biomechanics

V. Elbow biomechanics
   - Anatomical aspects
   - Kinetics
   - Kinematics
   - Integrated function
   - Clinical biomechanics
VI. **Wrist and hand biomechanics**
- Anatomical aspects
- Kinetics
- Kinematics
- Integrated function
- Clinical biomechanics

VII. **Pelvis and hip biomechanics**
- Anatomical aspects
- Kinetics
- Kinematics
- Integrated function
- Clinical biomechanics

VIII. **Knee biomechanics**
- Anatomical aspects
- Kinetics
- Kinematics
- Integrated function
- Clinical biomechanics

IX. **Ankle and foot biomechanics**
- Anatomical aspects
- Kinetics
- Kinematics
- Integrated function
- Clinical biomechanics

X. **Applied biomechanics**
- Posture
- Gait
- Respiratory biomechanics
- Sports biomechanics
- Pathomechanics

**Practical contents**
- Posture analysis
- Gait analysis
- Movement analysis
- Axes and plane identification
- Grip testing
- Open and closed kinematic chain
- Limb length measurement
- Limb girth measurement
- Chest symmetry and expansion
- Goniometry
**Suggested Readings**

HUMAN PSYCHOLOGY
(Subject code: PU1104)

Teaching Hours: 100 hrs
Maximum Marks: 100 (Theory: 100)
Assessment: Written examinations, Internal and University examination

Internal examination: 20 marks
University examination: 80 marks

Objectives: To understand the basic terminologies and basic concepts of human psychology and to acknowledge application of clinical psychology in relation to Physiotherapy.

Theory contents

I. Introduction to psychology:
- Historical background
- Definition
- Schools of Psychology
- Fields & subfields of Psychology
- Recent advances

II. Attention
- Overview
- Types and features
- Factors influencing attention
- Steps to eliminate distraction
- Attention Deficit Hyperactive Disorder (ADHD)

III. Perception
- Overview
- Principles and types
- Factors influencing perception
- Tests for perception
- Disorders of perception

IV. Learning
- Overview
- Types of learning
- Theories of learning
- Factors influencing learning
- Types of learning styles

V. Memory
- Overview
- Functions
- Types
- Forgetting
- Memory training
VI. Emotion and motivation
- Overview
- Physiology of emotion & motivation
- Types
- Conflicts and frustration
- Bodily response and coping

VII. Behavior
- Overview
- Behavior modification
- Cognitive behaviors
- Psychoanalysis
- Psychotherapy

VIII. Personality
- Overview
- Types
- Theories
- Factors influencing personality
- Defense mechanisms

IX. Psychological testing
- Intelligence quotient testing
- Creativity testing
- Aptitude testing
- Emotional quotient testing
- Personality projective tests

X. Applied psychology
- Developmental psychology
- Educational psychology
- Sports psychology
- Rehabilitation psychology
- Clinical psychology and counseling

Suggested Readings

II BPT COURSE CONTENTS
ELECTROTHERAPY
(Subject code: PU1105)

Teaching Hours: 200 hours (Theory: 100 hours & practical 100 hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations.
Internal Examination: 20 marks Theory and 10 mark Practical.
University Examination: 80 marks Theory and 90 mark Practical.

Objectives:
1. To understand the basic electrotherapy terminologies and concepts.
2. To understand the classifications and laws pertaining to various physical agents.
3. To understand various physiological and therapeutic effects of physical agents.
4. To understand the indications and contraindications for physical agents.
5. To acquire the clinical skill of physical agents application for the treatment.

Theory contents

I. Fundamental Concepts
   - History
   - Biophysics
   - Electromagnetic Spectrum
   - Electromagnetism
   - Electric Shock

II. Thermotherapy
   - Thermoregulation
   - Superficial Thermal Agents
   - Deep Thermal Agents
   - Methods & Techniques of Applications
   - Indications & Contraindications

III. Cryotherapy
   - Principles of Cryotherapy
   - Physiological Effects
   - Therapeutic Effects
   - Methods & Techniques of Applications
   - Indications & Contraindications

IV. Neuro-Muscular Electrical Stimulation
   - General Physiological Principles
   - Classification of Currents
   - Effects of Different Parameters
   - Physiological & Therapeutic Effects
   - Methods & Techniques of Applications
V. Therapeutic ultrasound
- The Nature, Production & Transmission of Sonic Waves
- Physiological & Therapeutic Effects
- Methods & Techniques of Applications
- Phonophresis
- Indications & Contraindications

VI. Phototherapy
- Overview
- IRR
- UVR
- LASER
- Ionozone Therapy

VII. Biofeedback
- Overview
- Principles & Mechanism
- Types
- Uses
- Advantages & Disadvantages

VIII. Electrodiagnosis
- Overview
- Electro diagnostic Tests
- Interpretation
- Advantages & Disadvantages
- Indications

IX. Clinical Reasoning / Decision Making
- Overview
- Basic Knowledge
- Cognitive Skills
- Planning
- Implementation

X. Recent Advances
- Overview
- Electro-analgesia
- NMES
- Healing
- Thermotherapy
Practical Contents

- Preparation and testing of machines or modalities.
- Preparation of patient for application of physical agents.
- Screening of patients for contraindications prior to application of physical agents.
- Techniques of application of various physical agents.
- Technique of performing electrodiagnostic tests.

Suggested Readings

EXERCISE THERAPY
(Subject code: PU1106)

Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100 hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations.
Internal Examination: 20 marks Theory and 10 mark Practical.
University Examination: 80 marks Theory and 90 mark Practical.
Objectives: To develop an understanding of theoretical knowledge and practical skills pertaining to various therapeutic movements used in the treatment of various diseases and disorders by Physiotherapists.

Theory Contents

I. Body measurements
   - Anthropometry
   - Goniometry
   - Manual muscle testing
   - Postural measurement
   - Dynamometry

II. Therapeutic exercises
   - Balance and Co-ordination
   - Stretching and strengthening
   - Postural exercises
   - Aerobic
   - Exercise prescription

III. Functional re-education
   - Overview
   - Trunk and limb activities
   - Gait re-education
   - Transfer activities
   - Clinical applications

IV. PNF
   - Overview
   - Principles and techniques
   - Effects and uses
   - Patterns
   - Clinical applications

V. Relaxation
   - Overview
   - Types
   - Methods and techniques
   - Advantages
   - Clinical applications
Practical Contents

1. Anthropometric measurements, strength, range of motion, coordination, balance, posture and gait.
2. Exercise with or without equipment (e.g., passive, active assisted, active, resisted, stretching, neuromuscular coordination i.e. Frenkel’s exercises, vestibular, muscle patterning, PNF, suspension)
3. Perform - joint mobilization, joint manipulation, soft tissue techniques
4. Physical fitness / conditioning / endurance exercise programs
5. Posture training and re education techniques
6. Gait mobility education and training with or without equipment including crutch measurement techniques
7. Neurodynamic techniques (e.g., nerve gliding/flossing exercises, balance training /proprioceptive training)
8. Techniques to optimize oxygen transport and facilitate airway clearance (e.g., postural drainage, breathing exercises,secretion clearance, forced expiratory techniques)
9. Mechanical agents (e.g., traction, continuous passive movement)
10. Transfer techniques, relaxation techniques and therapeutic yogasanas.
**Suggested Readings**

5. Basmajain JV & Wolf SL: Therapeutic Exercise. 5th Ed, Williams & Wilkins, USA, 1990
10. Skinner JS: Exercise testing & Exercise prescription for special cases: theoretical basis and clinical application. 3rd Ed, Lippincott Williams & Wilkins, New York, 2005.
HUMAN PATHOLOGY
(Subject code: PU1107)

Teaching Hours: Theory: 100 hours.
Maximum Marks: Theory: 100 marks.
Assessment: Written, Internal and University examination.
Internal Examination: 20 marks Theory.
University Examination: 80 marks Theory.

Objectives: This subject is intended to make the student understand the causes and mechanisms of diseases which are essential to institute appropriate treatment or suggest preventive measures to the patient.

I. Basics of general pathology
- Introduction to pathology
- Cell injuries
- Reversible cell injury
- Irreversible cell injury
- Intracellular and Extra cellular accumulations

II. Inflammation and repair
- Acute and chronic inflammation
- Inflammatory cells and mediators
- Wound healing
- Repair and regeneration
- Healing of Fracture Bone

III. Haematology and circulatory disorders
- Arterial disorders
- Venous disorders
- Lymphatic disorders
- Hemorrhage and shock
- Anaemias, leukocytic disorders and blood transfusion reactions

IV. Cardiovascular system
- Hypertension
- Peripheral vascular diseases
- Ischemic heart disease
- Cardiac failure, endocarditis, rheumatic heart disease
- Congenital heart diseases

V. Respiratory system
- Obstructive lung diseases
- Restrictive lung diseases
- Occupational lung diseases
- Lung infections
- Carcinoma of Lung
VI. Nervous system
- Congenital disorders
- Inflammation and infections
- Demyelinating disorders
- Sensory motor polyneuropathies
- Neuromuscular junction disorders and myopathies

VII. Musculoskeletal system
- Nutritional disorders
- Infectious bone disorders
- Degenerative joint disorders
- Inflammatory joint disorders
- Tumors of bone and joints

VIII. Growth disturbances
- Basic Genetic disorders
- Basic nutritional disorders
- Immunological disorders
- Neoplasia
- Cellular disorders: aplasia, hyper/hypoplasia, atrophy, hyper/hypotrophy

IX. Infectious disorders
- Bacterial infections
- Viral infections
- Mycobacterial infections
- Fungal infections
- Parasitic infections

X. Systemic pathology
- Gastrointestinal disorders
- Endocrine disorders
- Lymphatic disorders
- Hepato-biliary disorders
- Renal disorders

Suggested readings
Teaching Hours: Theory: 100 hours.
Maximum Marks: Theory: 100 marks.
Assessment: Written, Internal and University examination.
Internal Examination: 20 marks Theory.
University Examination: 80 marks Theory.

Objectives: The objectives are to develop an understanding of basic pharmacology, indications, side effects, contra indications of common drugs for the treatment of various diseases with emphasis on musculoskeletal, neuromuscular and cardio respiratory disorders.

Theory Contents

I. General pharmacology
   - Classification of drugs
   - Sources of drugs
   - kinetics and dynamics
   - Factors modifying drug response
   - Adverse effects

II. Neuropharmacology
   - Overview
   - Classification
   - Drugs used in ANS, PNS, CNS
   - Action, therapeutic and adverse effects
   - Indication and contraindications

III. Pharmacology in movement disorders
   - Overview and Classification
   - Drugs used in elderly (parkinsonism)
   - Anti epileptics, antispasticity, skeletal muscle relaxants
   - Action, therapeutic and adverse effects
   - Indication and contraindications

IV. Pharmacology in inflammatory / immune conditions
   - Overview
   - Classification
   - Pharmacokinetics
   - Therapeutic and adverse effects
   - Indication and contraindications

V. Pharmacology in cardiovascular system
   - Overview
   - Classification
   - Pharmacokinetics
   - Therapeutic and adverse effects
   - Indication and contraindications
VI. Pharmacology in respiratory system
- Overview
- Classification
- Pharmacokinetics
- Therapeutic and adverse effects
- Indications and contraindications

VII. Immunological agents and vaccines
- Overview
- Classification
- Pharmacokinetics
- Therapeutic and adverse effects
- Indications and contraindications

VIII. Antimicrobial agents
- Overview
- Classification
- Pharmacokinetics
- Therapeutic and adverse effects
- Indications and contraindications

IX. Pharmacology in endocrine system
- Overview
- Classification
- Pharmacokinetics
- Therapeutic and adverse effects
- Indications and contraindications

X. Pharmacology in sports
- Overview
- Classification
- Pharmacokinetics
- Therapeutic and adverse effects
- Indications and contraindications

Suggested Readings
III BPT COURSE CONTENTS
MEDICINE

(Subject code: PU1109)

Teaching hours: 100hrs (Theory: 50hrs and Practical: 50hrs)

Maximum marks: 100 (Theory: 100)

Assessment: Written, Internal and University examinations

Internal examination: 20 marks Theory

University examination: 80 marks Theory,

Objectives: To enable student to comprehend, understand clinical signs and symptoms of various general medicine and neurological conditions.

Theory contents

GENERAL MEDICINE (Section I)

I. Respiratory diseases & disorders
   - Infectious diseases
   - Inflammatory diseases
   - Obstructive diseases.
   - Restrictive diseases.
   - Respiratory failure.

II. Cardiovascular diseases
   - Congenital heart diseases
   - Diseases of myocardium.
   - Diseases of pericardium.
   - Valvular heart diseases.
   - Cardiac failure

III. Endocrinal, renal & gastrointestinal diseases
   - Diabetes mellitus
   - Hypo and hyper thyroidism
   - Urinary tract infection
   - Urinary incontinence
   - Rectal incontinence
IV. Dermatology
- Eczemas
- Henson’s disease
- Disorders of pigmentation
- Pressure sores
- Pilosebaceous disorders

V. Psychiatry
- Mental health
- Neuroses
- Psychoses
- Behavioral disorders
- Personality disorders

NEUROLOGY (Section II)

VI. Diseases and disorders of CNS
- Congenital
- Inflammatory and Infective disorder
- Trauma
- Vascular
- Degenerative disorders

VII. Diseases of spinal cord
- Congenital
- Traumatic
- Infective
- Inflammatory
- Intrinsic diseases

VIII. Diseases and disorders of PNS
- Neuralgia
- Neuritis
- Neuropathy
- Nerve injuries
IX. Diseases and disorders of ANS

- Overview
- Sympathetic disorders
- Parasympathetic disorders
- Investigations
- Management

X. Neuromuscular Diseases and disorders

- Myositis
- Myopathies
- Myasthenia gravis
- Poly myalagia
- Fibromyalgia

Practical contents

1. Patient assessment procedures.
2. Diagnostic Procedures
3. Handling of Monitors and other Life support equipment
4. Determine the need of Physiotherapy
5. Instruments used for Physiotherapy techniques

Suggested Reading

SURGERY
(Subject code: PU1110)

Teaching hours: 100hrs (Theory: 50hrs and Practical: 50hrs)
Maximum marks: 100 (Theory: 100)
Assessment: Written, Internal and University examinations
Internal examination: 20 marks Theory
University examination: 80 marks Theory
Objectives: To enable the student to learn and understand the various surgical treatments incorporated in the management of various conditions.

Theory contents

General Surgery
(Section A)

I. Fundamental concepts
   ▪ Historical aspects
   ▪ Classification of surgeries
   ▪ Types of incisions
   ▪ Complications of surgeries
   ▪ Role of physiotherapist

II. Thoracic surgeries
   ▪ Overview
   ▪ Indications
   ▪ Cardiac surgeries
   ▪ Lung surgeries
   ▪ Complications

III. Abdominal surgeries
   ▪ Overview
   ▪ Indications
   ▪ Surgical procedures
   ▪ Complications
   ▪ Management

IV. Peripheral surgeries
   ▪ Overview
   ▪ Indications
   ▪ Surgical procedures
   ▪ Complications
   ▪ Management

V. ENT, Ophthalmology & burns
   ▪ Overview
   ▪ Indications
   ▪ Surgical procedures
   ▪ Complications
   ▪ Management
Orthopedic Surgery
(Section B)

VI. Trauma
- Extremities and spinal fractures
- Extremities and spinal instabilities
- Investigations
- Management
- Complications

VII. Metabolic and degenerative
- Overview
- Bone & joint disorders
- Investigations
- Management
- Complications

VIII. Congenital disorders
- Extremity disorders
- Spinal disorders
- Investigations
- Management
- Complications

IX. Inflammatory and infectious disorders
- Disorders of bone
- Disorders of joint
- Investigations
- Management
- Complications

X. Deformities
- Peripheral deformities
- Spinal deformities
- Investigations
- Management
- Complications

Practical contents
1. Evaluation and assessment procedures
2. Bandaging, Dressing, strapping & sling techniques
3. Diagnostic Procedures
4. Observation of orthopedic traction & surgical procedures
5. Orthopedic implant Implant identification
6. Determine the need of Physiotherapy
Suggested readings

NEURO-PHYSIOTHERAPY
(Subject code: PU1111)
Teaching hours: 200hrs (Theory: 100hrs and Practical: 100hrs)
Maximum marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal examination: 20 marks Theory and 10 marks Practical
University examination: 80 marks Theory, 90 marks Practical and viva – voce

Objectives: To understand the goals of Physiotherapy related to neuro- surgery and to get acquainted with clinical reasoning and treatment of neurological conditions, through proper use of hands on skills required for neuro- Physiotherapy interventions.

I. Diseases & disorders of brain
- Overview
- Congenital ,Acquired ( Traumatic ,non traumatic )
- Investigations
- Medical &surgical management
- Physiotherapy management

II. Diseases & Disorders of cranial nerve
- Overview
- Congenital ,Acquired ( Traumatic ,non traumatic )
- Investigations
- Medical surgical management
- Physiotherapy management

III. Diseases & Disorders of spinal cord
- Overview
- Congenital ,Acquired ( Traumatic ,non traumatic )
- Investigations
- Medical surgical management
- Physiotherapy management

IV. Diseases & Disorders of peripheral nervous system
- Overview
- Congenital ,Acquired ( Traumatic ,non traumatic )
- Investigations
- Medical surgical management
- Physiotherapy management

V. Diseases & Disorders of autonomic nervous system
- Overview
- Congenital ,Acquired ( Traumatic ,non traumatic )
- Investigations
- Medical surgical management
- Physiotherapy management
VI. Diseases & Disorders in neuromuscular junction
- Overview
- Congenital, Acquired (Traumatic, non traumatic)
- Investigations
- Medical surgical management
- Physiotherapy management

VII. Disease & disorders of muscles
- Overview
- Congenital, Acquired (Traumatic, non traumatic)
- Investigations
- Medical surgical management
- Physiotherapy management

VIII. Psychosomatic disorders
- Overview
- Investigation
- Medical management
- Physiotherapy management

IX. Recent advances in neurosurgery
- Overview
- Pre and post Operative evaluation
- Investigations
- Post operative complication
- Physiotherapy management

X. Recent advances
- Overview
- Stem cell therapy
- Mental Imaginary techniques & mirror therapy
- Neurokinetic therapy
- Functional electrical stimulation

Practical contents
1. Neurological assessment
2. Facilitatory /Inhibitory techniques
3. Sensory integration/sensory re-education
4. Motor re-education/Therapeutic exercise
5. Motor learning/motor control techniques
6. Neural mobilization technique
7. Functional reeducation
8. Vestibular rehabilitation
9. Aids and appliances
10. Electro diagnosis/NMES/FES
Suggested Readings

ORTHOPEDIC PHYSIOTHERAPY
(Subject Code: PU1112)

Teaching hours: 200hrs (Theory: 100hrs and Practical: 100hrs)
Maximum marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal examination: 20 marks Theory and 10 marks Practical
University examination: 80 marks Theory, 90 marks Practical and viva – voce

Objectives: To comprehend the fundamental concepts pertaining to orthopaedic disorders and to get acquainted with clinical reasoning and Physiotherapy techniques of treatment of various orthopaedic conditions.

Theory contents

1. Fundamental concepts
   - Historical aspects
   - Classification of musculoskeletal disorders.
   - Musculoskeletal dysfunctions
   - Psychological reactions
   - Role of physiotherapist

II. Surgical investigations
   - Overview
   - Microbiological investigations
   - Pathological investigations
   - Biochemical investigations
   - Radiological investigations

III. Metabolic disorders
   - Overview
   - Rickets & osteomalacia
   - Osteoporosis
   - Connective tissue syndrome
   - Investigations
   - Management

VI. Congenital disorders
   - Overview
   - Spinal disorders
   - Peripheral disorders
   - Investigations
   - management

V. Inflammatory and degenerative disorders
   - Overview
   - Arthritic disorders
   - Spondyloarthropathies
   - Investigations
   - Management
VI. Soft tissue injuries
- Overview
- Types
- Investigations
- Management
- Precautions

VII. Fractures, dislocations and deformities
- Overview
- Spinal deformities
- Peripheral deformities
- Investigations
- Complications
- Management

VIII. Infective disorders
- Overview
- Infections of bone
- Infections of joints
- Investigations
- Management

IX. Amputations
- Overview
- Classification
- Indications & complications
- Prosthetic management
- Rehabilitation

X. Applied Orthopedic Physiotherapy
- Sports Physiotherapy
- Orthopedic manual therapy
- Orthopedic rehabilitation
- Evidence based practice
- Extended practice

Practical contents
1. Evaluation and assessment procedures in Orthopedic Physiotherapy
2. Bandaging, Dressing, strapping & sling techniques
3. Diagnostic Procedures
4. Observation of orthopedic traction & surgical procedures
5. Orthopedic implant identification and use
6. Determine the need of Physiotherapy
7. Orthopedic manual therapy techniques
8. Gait analysis and retraining.
9. Hand function retraining.
10. Application of physical agents.

Suggested readings
IV BPT COURSE CONTENTS
RESEARCH AND REHABILITATION
(Subject Code: PU1113)

Teaching hours: 100hrs (Theory: 50hrs and Practical: 50hrs)
Maximum marks: 100 (Theory)
Assessment: Written, Internal and University examinations
Internal examination: 20 marks Theory
University examination: 80 marks Theory

Objectives: To understand the basic research terminologies, methods and approaches. To recognize the significance of consent, confidentiality and other ethical considerations in relation to Physiotherapy research and to understand evidence based Physiotherapy practice.

I. Basic concepts
- Meaning and definition
- Research process, types and approaches
- Objectives of research in Physiotherapy
- Barriers for research in Physiotherapy
- Research problem or research question

II. Research ethics
- Overview
- Consent
- Confidentiality
- Helsinki’s declaration
- Plagiarism

III. Research designs
- Meaning and definition
- Types of research designs
- Steps in preparation of research designs
- Factors affecting research designs

IV. Sampling
- Overview
- Principles
- Methods
- Designs
- Process

VI. Research process
- Overview
- Phases
- Statistical analyses
- Research writing
- Dissemination
Rehabilitation (section II)

VI. Fundamental concepts
- Overview
- Goals
- Team
- Role of team
- Role of physiotherapist

VII. Orthopedic rehabilitation
- Overview
- Indications
- Aids and appliances
- Outcome measures
- Physiotherapeutic measures

VIII. Neuro-rehabilitation
- Overview
- Indications
- Aids and appliances
- Outcome measures
- Physiotherapeutic measures

IX. Cardiopulmonary rehabilitation
- Overview
- Indications
- Aids and appliances
- Outcome measures
- Physiotherapeutic measures

X. Community based rehabilitation
- Overview
- Indications
- Aids and appliances
- Outcome measures
- Physiotherapeutic measures

Suggested Readings

6. Dean P. Currier: Elements of research in physical therapy, 3rd Ed., Williams & Wilkins, NY, 1990.
CARDIO-RESPIRATORY PHYSIOTHERAPY
(Subject Code:PU114)

Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal Examination: 20 marks Theory and 10 marks Practical
University Examination: 80 marks Theory, 90 marks Practical and viva – voce
Objectives: The objective is to enable the student to understand, analyze and interpret the theoretical and practical concepts of Cardiorespiratory Physiotherapy.

Theory Contents

I. Cardiac disorders
- Overview
- Congenital
- Ischemic
- Cardiac muscle dysfunction
- Cardiac failure

II. Respiratory Physiotherapy
- Obstructive lung diseases
- Restrictive lung diseases
- Inflammatory & infective
- Occupational lung diseases
- Respiratory failure

III. Vascular disorders & Physiotherapy
- Hypertension
- PVD
- Cellulitis
- Treatment
- Complications & precautions

IV. Cardiothoracic surgeries & Physiotherapy
- Overview
- Indications
- Preoperative Physiotherapy
- Post operative Physiotherapy
- Complications

V. Cardiopulmonary investigations
- ECG
- PFT
- ABG
- Imaging
VI. Chest Physiotherapy techniques

- PD
- Breathing exercises
- Suctioning
- Nebulization
- Chest manipulations

VII. Intensive care Physiotherapy

- Patient monitoring
- Therapeutic Positioning
- Artificial airway
- Bronchial hygiene
- Cardio-pulmonary resuscitation

VIII. Cardiac Rehabilitation

- Introduction
- Team
- Equipments
- Phases
- Exercise interventions

IX. Pulmonary rehabilitation

- Introduction
- Team
- Equipments
- Phases
- Exercise interventions

X. Cardiorespiratory fitness

- Assessment & Screening
- Prescription
- Cardiopulmonary conditioning
- Prevention
- Complications

Practical contents

1. Bedside assessment of the patient-Adult & Pediatric
2. Postural Drainage,
3. Manual techniques – Percussion, Vibration and Shaking, Rib Springing,
4. ACBT, Autogenic Drainage,
5. Facilitation of Cough and Huff
6. PNF techniques for respiratory muscles
7. Suctioning
8. Manual hyperinflation in ICU
9. Quality of life Questionnaires
10. Treatment planning & Documentation

**Suggested reading**

COMMUNITY PHYSIOTHERAPY
(Subject Code: PU1115)

Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100 hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal Examination: 20 marks Theory and 10 marks Practical
University Examination: 80 marks Theory, 90 marks Practical and viva – voce

Objectives: The objective is to enable the student to understand, analyze and interpret the theoretical and practical concepts of Community Physiotherapy.

Theory Contents

I. National health care delivery
   ▪ Need for NHCD
   ▪ State level health care delivery
   ▪ National level health care delivery
   ▪ National health programs
   ▪ World health organizations

II. Disability evaluation
   ▪ Overview
   ▪ Neurological disorders
   ▪ Orthopedic disorders
   ▪ Cardio respiratory
   ▪ Disability acts

III. Disaster management
   ▪ Overview
   ▪ Team role of physiotherapist
   ▪ Disaster assessment
   ▪ Advances in disaster management
   ▪ DM agencies and their operations

IV. Community pediatric
   ▪ Overview
   ▪ Indications
   ▪ Equipments
   ▪ Intervention/Methods
   ▪ Rehabilitation
V. Community geriatric
- Overview
- Indications
- Equipments
- Intervention/Methods
- Rehabilitation

VI. Community neuro
- Overview
- Indications
- Equipments
- Intervention/Methods
- Rehabilitation

VII. Community ortho
- Overview
- Indications
- Equipments
- Intervention/Methods
- Rehabilitation

VIII. Community based rehabilitation
- Rehabilitation team & role & principles
- IBR & CBR differences
- Cancer rehabilitation
- Burns rehabilitation
- Industrial rehabilitation & ergonomics

IX. Obstetrics & gynecology community Physiotherapy
- Overview
- Indications
- Equipments
- Intervention/Methods
- Rehabilitation

X. Cardio-pulmonary community Physiotherapy
- Overview
- Indications
- Equipments
- Intervention/Methods
Rehabilitation

Practical contents

1. Screening for health problems
2. Ergonomic assessment and interventions
3. Fitness program for workers
4. Stress management
5. Home modifications
6. Fitness program for geriatrics
7. Gait training for geriatrics
8. Disability evaluation
9. Antenatal and postnatal Physiotherapy
10. Exercise prescription for different health problems

Suggested reading

7. Jane Singleton, Susan Mclaren: Ethical foundations of health care responsibilities in decision making, Mosby Elsevier
8. Demeter, Anderson, Smit: Disability evaluation, Mosby Elsevier
10. Rebecca Dutton: Clinical reasoning in physical disabilities, Lippincott Williams & Wilkins, USA
GENERAL PHYSIOTHERAPY
(Subject Code: PU1116)
Teaching Hours: 200 hours (Theory: 100 hours and Practical: 100 hours)
Maximum Marks: 200 (Theory: 100 and Practical: 100)
Assessment: Written, Oral and Practical, Internal and University examinations
Internal Examination: 20 marks Theory and 10 marks Practical
University Examination: 80 marks Theory, 90 marks Practical and viva – voce
Objectives: The objective is to enable the student to understand, analyze and interpret the theoretical and practical concepts of General Physiotherapy.

Theory Contents

I. Burns & skin graft
   - Overview
   - Types
   - Assessment
   - Interventions
   - Rehabilitation

II. Wounds, ulcers and skin conditions
   - Overview
   - Classifications
   - Phases of healing
   - Assessments
   - Interventions

III. Cancer
   - Overview
   - Classifications
   - Assessment
   - Interventions
   - Rehabilitation

IV. Clinical reasoning, functional diagnosis & evidence based practice
   - Overview
   - Need
   - Models/theories
   - Implications
   - Limitations

V. Exercise prescription for health problems
   - Overview
   - Principles
- Prescription kits
- Exercise adherence
- Special population

VI. Stress management
- Overview
- Signs & symptoms
- Psychosomatic problems
- Measurement
- Interventions

VII. Pain
- Overview
- Theories
- Classifications
- Measurement
- Interventions

VIII. Functional capacity
- Overview
- Indications
- Equipments
- Measurements
- Implications

IX. Women's health and abdominal surgeries
- Overview
- Indications
- Assessments
- Interventions
- Postoperative Physiotherapy

X. Miscellaneous
- Physiotherapy in PVD
- Physiotherapy in ENT conditions
- Physiotherapy in Ophthalmology
- Renal rehabilitation
- Physiotherapy in Endocrine disorders

Practical contents
1. Evaluation and management of burns
2. Cancer management and post operative Physiotherapy techniques
3. Application of various therapeutic modalities
4. Evaluation and management of various surgical conditions
5. Observation of diagnostic procedures
6. Exercise prescription for various conditions
7. Evaluation and management of gynecological conditions
8. Evaluation and management of wounds, ulcers
9. Familiarization with concept of quality of life
10. Home program and patient education

Suggested reading
