



Jayoti Vidyapeeth Women's University **Jaipur (Rajasthan)**

Faculty of Physiotherapy & Diagnostics
Department of Physiotherapy

National Education Policy 2020

CURRICULUM FRAMEWORK FOR
FOUR-YEAR UNDER GRADUATE PROGRAM IN PHYSIOTHERAPY

Program Name: BACHELOR OF PHYSIOTHERAPY (BPT)

Duration: 4 & ½ YEARS

With Effect from
Academic Session 2023-2024



National Educational Policy 2020:

The approval of the National Education Policy (NEP) by the Ministry of Human Resource Development, Government of India has been well deliberated the NEP is designed to contemplate the current skill requirements. The Indian education system with its earlier policies on education has greatly led to creation of fragmented system of education. However, bringing the whole system into one large umbrella remains a key issue. The current NEP has attempted to cure the same by getting rid of standalone institutions and institutions of affiliated nature and proposed formation and up gradation of institutions to offer multidisciplinary education. Multidisciplinary education system with inbuilt flexibility for both undergraduate as well as post graduate and research level is a key highlight of the NEP. It focuses on promoting and building vocational skills/skill enhancement courses, right from the school level, which can ease the burden on the employment opportunities and supply of proficient/talented workforce. As the experts rightly put it as the syllabi which academia develops should be student centric rather than teacher centric, which used to be so far. As already the Union Cabinet has approved the NEP 2020, it aims to pave way for transformational reforms in higher education systems in the country. This policy will replace the 34- year-old National Policy on Education (NPE), 1986.

Vision of the National Education Policy 2020

- An education system that contributes to an equitable and vibrant knowledge society, by providing high-quality education to all.
- Develops a deep sense of respect towards the fundamental rights, duties and Constitutional values, bonding with one's country, and a conscious awareness of one's role and responsibilities in a changing world.
- Instills skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen.

This National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental aspirations of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirations & goals of 21st century education, including SDG4, while building upon India's traditions and value systems. NEP aims for India to have an education system by 2040 that is second to none, with equitable access to the highest-quality education for all learners regardless of social or economic background and seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" by 2030." The whole of the NEP policy is a medication to cure the shortcomings in the education system for the last 35 to 36 years. The failure or success of the NEP will rely completely on the implementation and its acceptance by the stakeholders. For which we need to join hands in strengthening the system.



EXECUTIVE SUMMARY

Higher Education is a vital contributor for Economic Development of the nation. It plays a major role in improving human well-being and developing Indian Economy, since it serve as a center for developing ideas and innovations. The Sustainable Development Goal 4 (SDGs4) also advocates the quality of education, which seeks to “ensure inclusive and equitable quality education and promotes lifelong learning opportunities for all” by 2030 for Inclusive Economic Development. **Jayoti Vidyapeeth Women’s University, Jaipur** proposed an idea of developing a Curriculum Framework based on New Education Policy guidelines for both Undergraduate and Postgraduate programs across the faculty disciplines. Department of Physiotherapy under Faculty of Physiotherapy & Diagnostics has adopted the Curriculum Framework for Four-Year under Graduate Program in Physiotherapy, Bachelor of Physiotherapy (B.P.T) given by the NEP Curriculum.



Need for Curriculum Development

As per the National Education Policy initiatives, it is intended to formulate Curriculum to eliminate the disparities among the students studying in different Universities/Institutes. In addition to above the Members of the Committee also identified the need for the Development of Curriculum framework for Commerce Education:

1. **Indian Business Environment:** Due to LPG of Indian Economy, industry has undergone a lot of changes, growing MSME sector and Khadi & Village Industries, Non-profit and Social Enterprises, Emerging Entrepreneurship, State and Central Government initiatives, there are lot of opportunities for young people, the Curriculum helps the students to explore and utilize the opportunities created by the present business environment.
2. **Credit Disparities:** The Choice Based Credit System is not introduced in true sense as well there is credit disparity from one University to another/One Institute to another. To remove this credit disparities, which was burdening the students, Curriculum Framework is developed, which helps the BOS of the Universities/Institutes to develop their own Scheme of Teaching and Evaluation as per the Curriculum Credit Framework.
3. **Program Learning Outcomes (PLOs) and Sustainable Development Goals (SDGs):** In the New Curriculum, the courses would be mapped to identify their contribution towards PLOs and SDGs, which in turn help Universities/Institutes in their Accreditation and Ranking.
4. **Skill Development Courses:** The focus of existing Bachelor Programs in Physiotherapy is less on skill development. The New Curriculum has given more emphasis for the skill development by considering the need of the Fourth Industrial Revolution components namely Automation, Digital platforms, AI, Block Chain Technology, IOT, Spread Sheet, Analytics etc., which enables the students to acquire the specialized skills and applied competencies in the field of Commerce and Business.
5. **Discipline Specific Electives:** The existing Programs in Physiotherapy in many Universities/Institutes have limited number of Discipline Specific Electives and these are almost like core courses, hence wider choice of elective courses are proposed to introduce in the New Curriculum Framework.
6. **Multidisciplinary Courses:** New Curriculum helps the students to choose the courses of their choice from other streams/across faculty. Therefore, students will be capable of making a positive contribution to Commerce, Trade and Industry in the national and global context by drawing the knowledge from the different disciplines, which is socially desirable.



Outcomes of the Program

In addition to Conventional Time-Tested Lecture Method, the Members of the Curriculum Development suggest the following approaches:

Programme Outcome:

At the end of the Bachelor of Physiotherapy (BPT) Programme, graduates will be able to

- PO1** Recognize the role of Physiotherapy in the context of the health needs of the community and National priorities in the health sector.
- PO2** Demonstrate professional and ethical behavior appropriate to at least the minimum standard expected for a Physiotherapy Graduate.
- PO3** Ability to acquire knowledge on Basic Medical sciences, Human Movement Sciences, Various Medical Conditions and Surgical Treatments to identify Psychological, Social, Economical, Cultural aspects of diseases and its impact on community.
- PO4** Ability to perform a safe, systematic and appropriate physiotherapy assessment for various conditions.
- PO5** Identify, Define and Deal with problems of professional practice through logical, analytical and critical thinking.
- PO6** Ability to analyze and interpret physical assessment and diagnosis and set appropriate short and long term goals.
- PO7** Ability to choose, demonstrate intervention safely and document the progression appropriately.
- PO8** Communicate effectively across wide range of professional and personal contexts.
- PO9** An ability to work independently or collaboratively as a part of rehabilitation team.
- PO10** Ability to understand and conduct research activities.
- PO11** Engage in activities that contribute to the betterment of society and behave ethically and responsible in social environment.



Guidelines for Continuous Assessment and Semester End Examination

The Members of the BOS Committee deliberated on the framework of Continuous Assessment as well Semester End Examination for the courses. The CA and End Term Examination will carry 30% and 70% weight age each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CA and End Term Examination will be on the following parameters:

Sr.No.	Parameters for the Evaluation	Marks
1.	Internal Assessment	15 Marks
2.	Continuous Assessment	15 Marks
2.	Semester End Examinations	70 Marks
	Total	100 Marks

Continuous Assessment: The CA will carry a maximum of 15% weight age (15 marks) of total marks of a course.

- i. Individual Assignments
 - ii. Seminars/Class Room Presentations/ Quizzes
 - iii. Group Discussions /Class Discussion/ Group Assignments
 - iv. Case studies/Case lets
 - v. Participatory & Industry-Integrated Learning/ Filed visits
 - vi. Practical activities / Problem Solving Exercises
 - vii. Participation in Seminars/ Academic Events/Symposia, etc.
 - viii. Mini Projects/Capstone Projects
 - ix. Any other academic activity
- b. Internal Assessment Tests :The test will carry a maximum of 15% weight age (15 marks) of total marks of a course, under this component,

(Internal Test followed by Continuous Assessment has to be conducted in a semester for 30 marks each and the same is to be scaled down to 30 marks. Standard format is given below.



Template for Internal Assessment Test

Internal Assessment Test Bachelor of Physiotherapy (B.P.T)

Course Code:
Duration: 1 Hour

Name of the Course:
Total Marks: 30

SECTION-A

I. Answer any two of the following questions. Questions are asked on Remembering.
(4 x 2= 8)

- 1.
- 2.
- 3.

SECTION- B

II. Answer any two of the following questions. Questions are asked on Understanding and Applying.
(2 x5= 10)

- 4.
- 5.
- 6.

SECTION- C

III. Answer any one of the following questions. Questions are asked on analyzing and evaluating.
(1*12=12)

- 7.
 - 8.
-

II. Semester End Examination:

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. End Term Examination of the course shall be conducted after fulfilling the minimum attendance requirement as per the University norms. **Jayoti Vidyapeeth Women's University** BOS Committee for B.P.T has suggested the following Framework for End-Examination.



Proposed Model Question Paper for Semester End Examination
Semester B.P.T Examination, Month/Year
(New Syllabus 2023-24)

PHYSIOTHERAPY

Paper: _____

Time: 3 Hours

Max. Marks: 70

SECTION-A

1. Answer any Six of the following questions. Each Question Carries 2 Marks

(6x 3= 18)

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.

SECTION- B

Answer any four of the following questions. Each question carries 4 marks

(4 x4= 16)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

SECTION- C

Answer any three of the following questions. Each question carries 12 marks

(3x12=36)

- 7.
- 8.
- 9.
- 10.
- 11.



Learning Outcome Based Curriculum Framework

Programme Specific Outcome:

- PSO 1** Demonstrate sufficient understanding of knowledge in Physiotherapy.
- PSO 2** Able to integrate theoretical knowledge with clinical assessment.
- PSO 3** Develop the ability to collect history, perform relevant clinical assessment and frame appropriate electrotherapeutic and exercise therapy management for the patients.
- PSO 4** Demonstrate clinical decision making ability and provide appropriate patient care.
- PSO 5** Develop effective communication with patients, family, colleagues and students.
- PSO 6** Promote health education and improved quality of life through the practice of the profession.
- PSO 7** To carry out research and publications towards upliftment of the field of Physiotherapy.
- PSO 8** Actively engage in lifelong learning activities.
- PSO 9** Work effectively in various inter professional collaborative settings like hospitals, Rehabilitation Centers, Special Schools, Educational Institutions, Health and Fitness Centers, Geriatric Centers, Ergonomic Consultant in Corporate Sectors, Private Consultation, Home Care Services, Industrial Sectors, Sports Management, Fitness Consultant.



i. Generic Skills

The graduate will

PEO1 Graduates are prepared to be employed in industry, academia and research laboratories and by providing expected domain knowledge.

PEO2 Graduates are provided with practical training, hands-on and project experience to meet the industrial needs.

PEO3 Graduates are motivated in career and entrepreneurial skill development to become global leaders.

PEO4 Graduates are trained to demonstrate creativity, develop innovative ideas and to work in teams to accomplish a common goal.

PEO5 Graduates are addressed with social issues and guided to operate problems with solutions.

i. Graduate Attributes

Bachelor of Physiotherapy graduates will have the following attributes and skills:

(A) Academically excellent

- (1) Analysis and evaluation of evidence in the physiotherapy disciplines in support of an argument, proposition or solution to problems in organizations and in society.
- (2) Strategic and critical thinking in relation to health and fitness-related issues.

(B) Research Skills

- (3) The retrieval of information from variety of health and ailment/medical sources.
- (4) Knowledgeable across disciplines with a kaleidoscopic view.
- (5) Synthesis of knowledge across disciplines.
- (6) Problem solving through the application of appropriate and relevant theories principles and data.
- (7) Skilled in the use of computer systems and software used in medical through practical assignments, exercises and demonstrations.



C) Attuned to cultural diversity

- (8) Aware of Cultural difference and able to account for these in developing solutions to health and fitness-related problems.

D) Active global citizens

- (9) Effective communicators on matters related to health and fitness.
- (10) Participants in discussion and debate on national and international issues related to the disciplines of the faculty.

E) Leaders in communities

- (11) Effective decision makes in health and fitness through meaningful and impactful community engagement practices.
- (12) Ethical and collegial in professional practice.



PROGRAM STRUCTURE

Teaching & Evaluation for B.P.T (Bachelor of Physiotherapy) with Physiotherapy as Core subject

Sl. No.	NHEQF levels	Semester	CourseCode	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	I	VAD-008	English Communication	Multidisciplinary	2+0+0	70	30	100	2
2	06	I	UF-PT-003	General Biochemistry	Minor	3+0+0	70	30	100	3
3	06	I	UF-PT-013	Basics of Psychology	Minor	3+0+0	70	30	100	3
4	06	I	UF-PT-007	Human Anatomy-I	Major	4+0+0	70	30	100	4
5	06	I	UF-PT-008	Human Anatomy-I (Laboratory)	Major	0+0+2	70	30	100	1
6	06	I	UF-PT-009	Human Physiology-I	Major	4+0+0	70	30	100	4
7	06	I	UF-PT-010	Human Physiology-I (Laboratory)	Major	0+0+2	70	30	100	1
8	06	I	UF-PT-005	Fundamentals of Yoga-I	Minor	3+0+0	70	30	100	3
9	06	I	UF-PT-006	Fundamentals of Yoga-I (Laboratory)	Minor	0+0+2	70	30	100	1
10	06	I	UF-PT-011	Basic of computer and information technology	Minor	0+0+4	70	30	100	2
			Sub -Total (A)				700	300	1000	24



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	II	UF-PT-150	Sociology	Multidisciplinary	2+0+0	70	30	100	2
2	06	II	UF-PT-030	Exercise Therapy-I	Major	3+0+0	70	30	100	3
3	06	II	UF-PT-148	Biophysics	Minor	3+0+0	70	30	100	3
4	06	II	UF-PT-020	Human Anatomy-II	Major	4+0+0	70	30	100	4
5	06	II	UF-PT-021	Human Anatomy-II (Laboratory)	Major	0+0+2	70	30	100	1
6	06	II	UF-PT-022	Human Physiology-II	Major	4+0+0	70	30	100	4
7	06	II	UF-PT-023	Human Physiology-II (Laboratory)	Major	0+0+2	70	30	100	1
8	06	II	UF-PT-018	Fundamentals of Yoga-II	Minor	3+0+0	70	30	100	3
9	06	II	UF-PT-019	Fundamentals of Yoga-II (Laboratory)	Minor	0+0+2	70	30	100	1
10	06	II	UF-PT-149	Basic Nursing, Emergency & CPR (Laboratory)	Minor	0+0+4	70	30	100	2
11	06	II	UMC-001	Women Rights & Law	UMC	2+0+0	GRADE BASED			2
12	06	II	UMC-005	Gow Gyan Science	UMC	2+0+0				2
13	06	II	ECA-001	Extracurricular activities	ECA	2+0+0				2
14	06	II	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				700	300	1000	32



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	III	UF-PT-151	General Medicine & Surgery	Minor	3+0+0	70	30	100	3
2	06	III	UF-PT-053	Pharmacology	Minor	3+0+0	70	30	100	3
3	06	III	UF-PT-028	Electrotherapy - I	Major	3+0+0	70	30	100	3
4	06	III	UF-PT-029	Electrotherapy - I (Laboratory)	Major	0+0+2	70	30	100	1
5	06	III	UF-PT-034	Pathology & Microbiology	Minor	3+0+0	70	30	100	3
6	06	III	UF-PT-152	ENT, Ophthalmology & Dermatology	Minor	2+0+0	70	30	100	2
7	06	III	UF-PT-045	Exercise therapy- II	Major	3+0+0	70	30	100	3
8	06	III	UF-PT-046	Exercise therapy -II (Laboratory)	Major	0+0+2	70	30	100	1
9	06	III	UF-PT-153	Radio-diagnosis	Minor	2+0+0	70	30	100	2
Sub -Total (A)							680	270	950	22

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	IV	UF-PT-064	Orthopedics	Major	4+0+0	70	30	100	4
2	06	IV	UF-PT-075	Pediatrics	Major	3+0+0	70	30	100	3
3	06	IV	UF-PT-041	Electrotherapy - II	Major	4+0+0	70	30	100	4
4	06	IV	UF-PT-024	Biomechanics & Kinesiology-I	Major	4+0+0	70	30	100	4
5	06	IV	UF-PT-155	Research Methodology- I	Minor	4+0+0	70	30	100	4
6	06	IV	UF-PT-154	Sports Nutrition	Minor	2+0+0	70	30	100	2
7	06	IV	UF-PT-042	Electrotherapy - II (Laboratory)	Major	0+0+4	70	30	100	2
8	06	IV	VAD-003	Environmental studies & disaster management	UMC	2+0+0	GRADE BASED			2
9	06	IV	UMC-002	Military Science & Civil Defence	UMC	2+0+0				2
10	06	IV	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	IV	UMC-007	Community development activities	CDA	2+0+0				2
Sub -Total (A)										490



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	V	UF-PT-062	Neurology & Neurosurgery	Major	4+0+0	70	30	100	4
2	06	V	UF-PT-156	Cardio-diseases & Thoracic Surgery	Major	4+0+0	70	30	100	4
3	06	V	UF-PT-157	Manual Therapy	Major	4+0+0	70	30	100	4
4	06	V	UF-PT-158	Health, Fitness & Exercise Prescription	Minor	3+0+0	70	30	100	3
5	06	V	UF-PT-039	Biomechanics & Kinesiology -II	Major	4+0+0	70	30	100	4
6	06	V	UF-PT-159	Research Methodology- II	Minor	3+0+0	70	30	100	3
7	06	V	UF-PT-160	Manual Therapy (Laboratory)	Major	0+0+2	70	30	100	1
Sub -Total (A)							490	210	700	23

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VI	UF-PT-105	Gynecology & Obstetrics	Major	4+0+0	70	30	100	4
2	06	VI	UF-PT-081	Bio-Engineering	Major	4+0+0	70	30	100	4
3	06	VI	UF-PT-161	Psychiatry	Minor	3+0+0	70	30	100	3
4	06	VI	UF-PT-162	Ethics & Law (Medical/PT)	Minor	3+0+0	70	30	100	3
5	06	VI	UF-PT-163	Organization & Administration	Minor	2+0+0	70	30	100	2
6	06	VI	UF-PT-164	Human Ergonomics	Minor	2+0+0	70	30	100	2
7	06	VI	UF-PT-165	Therapeutic Massage	Major	3+0+0	70	30	100	3
8	06	VI	UF-PT-166	Therapeutic Massage (Laboratory)	Major	0+0+2	70	30	100	1
9	06	VI	UMC-003	Help Aid	UMC	2+0+0	GRADE BASED			2
10	06	VI	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	VI	UMC-007	Community development activities	CDA	2+0+0				2
Sub -Total (A)							560	240	800	28



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VII	UF-PT-167	Ortho Physiotherapy- I	Major	4+0+0	70	30	100	4
2	06	VII	UF-PT-168	Neuro Physiotherapy- I	Major	4+0+0	70	30	100	4
3	06	VII	UF-PT-169	Chest Physiotherapy- I	Major	3+0+0	70	30	100	3
4	06	VII	UF-PT-170	Sports Physiotherapy- I	Major	3+0+0	70	30	100	3
5	06	VII	UF-PT-171	General & Community Physiotherapy- I	Major	3+0+0	70	30	100	3
6	06	VII	UF-PT-172	Allied Therapy	Major	3+0+0	70	30	100	3
7	06	VII	UF-PT-173	Research Project- I	Major	0+0+6	100	-	100	3
8	06	VII	UF-PT-174	Allied Therapy (Laboratory)	Major	0+0+2	70	30	100	1
			Sub -Total (A)				590	210	800	24

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VIII	UF-PT-175	Ortho Physiotherapy - II	Major	4+0+0	70	30	100	4
2	06	VIII	UF-PT-176	Neuro Physiotherapy - II	Major	4+0+0	70	30	100	4
3	06	VIII	UF-PT-177	Chest Physiotherapy - II	Major	3+0+0	70	30	100	3
4	06	VIII	UF-PT-178	Sports Physiotherapy - II	Major	3+0+0	70	30	100	3
5	06	VIII	UF-PT-179	General & Community Physiotherapy - II	Major	3+0+0	70	30	100	3
6	06	VIII	UF-PT-180	Fundamentals of Therapeutic & Kinesio Taping	Major	4+0+0	70	30	100	4
7	06	VIII	UF-PT-181	Research Project - II	Major	0+0+6	100	-	100	3
8	06	VIII	UF-PT-182	Fundamentals of Therapeutic & Kinesio Taping (Laboratory)	Major	0+0+2	70	30	100	1
9	06	VIII	UMC-004	Gender Sensitization	UMC	2+0+0	GRADE BASED			2
10	06	VIII	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	VIII	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				590	210	800	31



Acronyms Expanded

- VAC : Value Added Course
- UMC : University Mission Course
- CC : Core Course
- SEC-SB/VB : Skill Enhancement Course-Skill Based/Value Based
- OEC : Open Elective Course
- DSE : Discipline Specific Elective
- L+T+P : Lecture+Tutorial+Practical(s)

Note: Practical Classes may be conducted in the Business Lab or in Computer Lab or in Class room depending on the requirement. 2 Hours of Practical Class is equal to 1 Hour of Teaching, however, whenever it is conducted for the entire class (i.e., more than 50 students) 2 Hours of Practical Class is equal to 2 Hours of Teaching.



First Semester Course Contents

Sl. No.	NHEQF levels	Semester	CourseCode	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	I	VAD-008	English Communication	Multidisciplinary	2+0+0	70	30	100	2
2	06	I	UF-PT-003	General Biochemistry	Minor	3+0+0	70	30	100	3
3	06	I	UF-PT-013	Basics of Psychology	Minor	3+0+0	70	30	100	3
4	06	I	UF-PT-007	Human Anatomy-I	Major	4+0+0	70	30	100	4
5	06	I	UF-PT-008	Human Anatomy-I (Laboratory)	Major	0+0+2	70	30	100	1
6	06	I	UF-PT-009	Human Physiology-I	Major	4+0+0	70	30	100	4
7	06	I	UF-PT-010	Human Physiology-I (Laboratory)	Major	0+0+2	70	30	100	1
8	06	I	UF-PT-005	Fundamentals of Yoga-I	Minor	3+0+0	70	30	100	3
9	06	I	UF-PT-006	Fundamentals of Yoga-I (Laboratory)	Minor	0+0+2	70	30	100	1
10	06	I	UF-PT-011	Basic of computer and information technology	Minor	0+0+4	70	30	100	2
			Sub -Total (A)				700	300	1000	24



Detailed Syllabus - 1st Semester

Credits= 02	English Communication	2+0+0 Total Lectures: 30
Objective:	Student will be given knowledge of functional grammar in order to develop effective reading and writing skills.	
Unit 1	Sentence Structure: Elements of a sentence (Subject, verb, object, complement and adjunct) Articles: Definite and Indefinite & omission of articles	6
Unit 2	Transformation of Sentence Structure: Active and Passive Voice (statement, negative, interrogative and imperative), Direct and indirect narration (statement, negative, interrogative and imperative)	6
Unit 3	Correct Usage of Language: Tenses (Present, Past and Future), Phrasal verbs, Modals (can, could, will, would, shall, should, may, might, must, ought to, need) Common Errors in Effective Communication: How to avoid common sentence – structural errors, vocabulary and pronunciation	6
Unit 4	Writing Skills: Theme (Paragraph) writing, Letter (formal letters) and application writing, report writing, résumé writing	6
Unit 5	Reading Comprehension: Efficient reading and note taking	6
Course Outcome: The student will be able to:		
1	Learn the essentials of English Grammar.	
2	Apply the rules of grammar to use flawless English in speech and writing.	
3	Analyze, identify and rectify the common errors in speech and writing.	
4	Student can read with ease and fluently, enrich vocabulary and enjoy reading and writing.	
5	Evaluate a piece of writing keeping in mind all the rules of grammar studied.	
6	Read and comprehend English	
Text Books:		
1	Wren & Martin: English Grammar & Composition, S.Chand & Co, Delhi (Latest edition)	
2	Hornby A.S.: A Guide to patterns and usage, Oxford University Press, Delhi, 1954.	
Reference Books:		
1	Murphy and Reynold: Essentials of English grammar, Cambridge University Press, 4th printing 2007.	
2	Leech Geoffery: English Grammar for today, Longman, Delhi, 1973.	
3	Quirk & Greenbaum: University English Grammar, Longman Publications, 1973.	
4	Sharma, R.C. & Krishna Mohan: Business Correspondence & Report writing; Tata McGraw Hill, New Delhi (Latest edition).	



Credits= 3	General Biochemistry	3+0+0 Total Lectures: 45
Objective:	To get acquainted for application of chemistry in biological sciences.	
Unit 1	Introduction to Biochemistry: Amino acids: Structure & Function. Structure and properties of Amino acids, Types of proteins and their classification. Different Level of structural organization of proteins, Protein Purification. Denaturation and renaturation of proteins. Fibrous and globular proteins. Carbohydrates: Structure, Function and properties Bacterial cell wall polysaccharides, Glycoprotein's and their biological functions.	9
Unit 2	Lipids: Structure, functions, Classification, properties of fatty acids, essential fatty acids. Nucleic acids : Structure and functions: Physical & chemical properties of Nucleic acids Double helical model of DNA structure, denaturation and renaturation of DNA.	9
Unit 3	Enzymes: Nomenclature , classification and function of Enzymes,	9
Unit 4	Enzyme specificity: Types & theories, Biocatalysts from extreme thermophilic and hyperthermophilic archaea and bacteria. Role of: NAD ⁺ , NADP ⁺ , FMN/FAD, coenzymes A, Thiamine pyrophosphate, Pyridoxal phosphate, lipoic-acid, Biotin vitamin B12, Tetrahydrofolate and metallic ions.	9
Unit 5	Carbohydrates Metabolism: Reactions, energetics and regulation. Glycolysis, Gluconeogenesis, Glycogenolysis and glycogen synthesis. TCA cycle, Electron Transport Chain, Oxidative phosphorylation. β -oxidation of fatty acids.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the various aspects of Biochemistry.	
3	Understanding the concepts of Biochemistry.	
Text Books:		
1	Bhardwaj Uma (2014). Biochemistry for Life Sciences. Dorling Kindersley (India) Pvt. Ltd, Pearson IN.	
2	Jain J L, Jain Supriya and Jain N (2005) Fundamentals of Biochemistry. S Chand and Compant Ltd. New Delhi	
Reference Books:		
1	Nelson, D.L., Cox, M.M. 2004 Lehninger Principles of Biochemistry, 4 Freeman and Company, New York, USA. edition, W.H.	



Credits= 3	Basics of Psychology	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the basics of Psychology.	
Unit 1	Introduction to Psychology- Definition, Aspects of Psychology :Natural Science and Social Science, Evolution of Psychology, Branches of Psychology.	9
Unit 2	Learning and Intelligence- Definition, Theories- Classical Conditioning, Operant Conditioning, Observational Learning , Nature and Theories of Intelligence: One Factor Theory, Two Factor Theory, Theory of Primary Mental Abilities, Hierarchical Model Theory, Structure of Intellect Model, Theory of Multiple Intelligence, PASS Theory.	9
Unit 3	Motivation and Emotion - Motives: Biogenic and Sociogenic, Maslow's Hierarchy of Need Emotions- Definition, nature of emotions, key emotions, Theories of emotions- James Lange ,Cannon Bard and Schachter Singer , Managing Negative Emotions and Enhancing Positive Emotions.	9
Unit 4	Personality- Nature and theories: Type approaches, Trait Approaches, Psychodynamic Approach, Neo- Freudians, Nature vs. Nurture Debate on Personality.	9
Unit 5	Stress- Nature, Symptoms, Sources, Methods to manage Stress.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the various aspects of Psychology	
3	Understanding the concepts basics to Psychology	
Text Books:		
1	Morgan, C. T. 2017, King, R. A., Weisz, J. R., & Schopler, J. Introduction to Psychology. 7th Edition, Tata McGraw-Hill, New Delhi.	
2	Baron, 2016, R. A. Psychology: The Essential Science. 5th Edition, Allyn &Bacon, New York.	
Reference Books:		
1	Zimbardo, P. G., & Weber, A. L.2017, Psychology, 7th Edition, Harper Collins College Publisher, New York.	



Credits= 4	Human Anatomy-I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Human Anatomy.	
Unit 1	General Anatomy: Histology - cell, tissues of the body, epithelium, connective tissue, cartilage, bone, blood, lymph, muscles & nerve. Embryology- ovum, spermatozoa, fertilization & formation of the firm layers & their directions. Development of the skin, fascia, blood vessels, lymphatics, bones, axial & appendicular skeleton & muscles, Neural tube, brain vessels & spinal cord, brain (brain stem) structures.	12
Unit 2	Organ Anatomy: Cardiovascular system-Heart, arteries, veins, collateral circulation, nervous control of circulation (details). Respiratory system -lungs, pleura, broncho-pulmonary segments (details). Digestive system (brief outline). Urinary system (brief outline). Male reproductive system (brief outline). Female reproductive system (details). Endocrine system (brief outline). Lymphatic system (brief outline). Radiological anatomy of thorax.	12
Unit 3	Neuro Anatomy: Organization of C.N.S - spinal nerves & autonomic nervous system mainly pertaining to cardiovascular, respiratory & urogenital systems. Cranial nerves. Peripheral nervous system- peripheral nerve, neuromuscular junction, sensory end organ.	12
Unit 4	CNS Anatomy: C.N.S- spinal cord segments & areas, brain stem, cerebellum, Inferior colliculi, Superior colliculi, diencephalon, the thalamus, the hypothalamus, the corpus stratum, the cerebral hemisphere, the lateral ventricles, the rhiencephelon, the blood supply of brain, the meninges, the visual radiation, internal capsule, thalami cortical radiation, the auditory radiation, basal ganglia, pons, medulla, the pyramidal system, extra pyramidal system, anatomic integration, intra cortical integration.	12
Unit 5	Skin Anatomy: Skin & appendages of skin (brief outline).	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Human Anatomy.	
3	Understanding the Human body in detail.	
Text Books:		
1	Chaurasia, B.D.(2017), Human Anatomy. Volume 1, 2 ,3 & 4th, 7th Edition,CBS Publishers & Distributers Pvt.Ltd.	
2	Singh Inderbir, (2004), Atlas of Human Anatomy, 1st Edition, Jaypee brothers Medical publishers.	
Reference Books:		
1	Singh inderbir, (2009), Textbook of Human osteology, 3rd Edition, Jaypee Bothers medical publishers.	
2	Drake.L. Richard, (2014), Gray's Anatomy,3rd Edition, Elsevier Health Sciences.	



Credits= 01	Human Anatomy-I (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Study of Cardiovascular organs.	3
2	Study of Respiratory Organs.	3
3	Study of Various Organs of the body	3
4	Study of Brain	3
5	Study of Medulla and CNS	3
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of human body.	
3	Demonstration of the practical aspects of human body.	



Credits= 4	Human Physiology-I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Human Physiology.	
Unit 1	Neuro muscular Physiology: Nerve & Muscle: Structure & function of muscle and nerve cells, Classification of muscle & nerve fibres, Cell Membranes, Ionic & potential gradients & transport action potential, Propagation of evoked potential, Factors affecting muscle tension, Neuromuscular transmission motor units, Synapse, Reflex physiology, degeneration & regeneration of the nerve fibres, Reaction of degeneration muscle, contraction mechanics, chemistry & biophysics.	12
Unit 2	CNS (DETAILS): Physiology of synapse, Physiology of receptors organs for general special sensation, Physiology of touch, pain & temperature sensations, Physiology of reflex action, classifications & properties of reflexes (excluding conditioned reflexes), Sensory & motor tracts of spinal cord & effects of complete & incomplete trans section of spinal cord at various levels, Cerebellum & basal ganglia, Sensory & motor cortex, Physiology of Labyrinthine, Regulation of equilibrium & posture.	12
Unit 3	Blood: Composition & functions of blood, Blood groups, Erythropoiesis, Coagulation.	12
Unit 4	DIGESTIVE SYSTEM: General Introduction, Organisational plan of digestive system, Composition, function & regulation of salivary, gastric, pancreatic, intestinal & biliary secretion, Movements of GI Tract.	12
Unit 5	KIDNEY: General Introduction- Structures and Functions of Kidney.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Human Physiology.	
3	Understanding the practical aspects of Human Physiology.	
Text Books:		
1	Chaudhuri,K,Sujit, (2016), Concise Medical Physiology, 7th Edition, NCBA Publishers	
2	Chatterjee CC, (2018), Human Physiology, Vol.1 & 2,12th Edition, CBS publishers & Distributors put.Ltd.	
Reference Books:		
1	Marieb.N.Elaine, (2006), Human Anatomy & Physiology, 6th Edition, Pearson Education, INC	



Credits= 01	Human Physiology-I (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Demonstration of Blood Group, coagulation	3
2	Learn and demonstrate the auscultation movements.	3
3	Learn and demonstrate the various sounds of heart.	3
4	Study the functioning of digestive system	3
5	Study the functioning of Kidney.	3
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of physiology.	
3	Demonstration of the practical aspects of human physiology.	



Credits= 3	Fundamentals of Yoga-I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Yogic sciences.	
Unit 1	General Introduction of Yoga: Brief about origin of Yoga, psychological aspects and Mythological concepts, History and development of Yoga: prior to the vedic period, Medieval period, modern era.	9
Unit 2	Definition of Yoga, aims and objectives of yoga, misconceptions of yoga, brief about stream of yoga, principles of yoga, meaning and Importance of yoga, Elements of Yoga.	9
Unit 3	Introduction to Asanas, Pranayama, Meditation and Yogic Kriyas and detail studies of each.	9
Unit 4	Yoga for concentration and related asanas (Sukhasana, Tadasana, Padmasana, Shashankasana), Relaxation techniques for improving concentration- Yognindra.	9
Unit 5	Procedure, benefits, contraindications for asanas in the following diseases: Obesity, Diabetes, Asthma, Hypertension, Back pain, Heart problems, constipation, Arthritis, Fever, Hernia etc.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Yoga	
3	Understanding the practical aspects of Yogic sciences.	
Text Books:		
1	Singh SP and Yogi Mukesh, (2010), Foundation of Yoga, Standard Publication, New Delhi.	
2	Lal Basant kumar, (2013), Contemporary Indian Philosophy, Motilal Banarsidas Publishers pvt.ltd. Delhi.	
Reference Books:		
1	Sharma VK, (2018), Health and Physical Education, New Saraswati House (India) Pvt.Ltd.	
2	Agarwal MM, (2010), Six systems of Indian Philosophy, Chow khambha vidya Bhawan, Varanasi.	



Credits= 01	Fundamentals of Yoga-I (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Learn and demonstrate the yogic asanas.	3
2	Learn and demonstrate the yogic kriyas.	3
3	Learn and demonstrate the yogic asanas.	3
4	Learn and demonstrate the Meditation technique	3
5	Learn and demonstrate the Pranayama.	3
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of yoga.	
3	Demonstration of the practical aspects of yoga on human body.	



Credits:-02	BASICS OF COMPUTER AND INFORMATION SCIENCES	0+0+4 Total Lectures: 30
Objective:	The objective of the course is to create awareness and understanding among the student about basics of computer.	
Unit 1	Basic Knowledge of Computer: its peripheral Devices. Introduction of Application Software. Introduction of Removable media: Flash Memory Device, DVD, CD. Knowledge and Installation of Software. Introduction of Malware and its consequences. Role of Digital media in current scenario, How to Create secure account in Digital world.	06
Unit 2	Operating System: Microsoft Windows- An Overview of different version of windows, File Management through Windows 7; Disk Cleanup and Disk Entertainment, Calculator, Note pad, Paint, WordPad, Recycle Bin, Windows Explorer, Creating Folder Icons.	06
Unit 3	Word Processing: Word Processing Concepts; Working with Documents- Create a New Document, Saving a Document, Working on Multiple Documents, Working with Text in Word-Selecting text, Editing Text, Finding and replacing text; Printing Documents; Formatting- Bullets in Word, Alignment, Layout, Editing and Proofreading, etc.; Working With Graphics-Inserting Clip Art Images, Moving Images in Word, Deleting images in Word, Text wrapping in Word, etc.	06
Unit 4	Presentation Package: Creating a New and Opening an Existing Presentation; Creating the look of your Presentation; Working with Slides- Adding and formatting Text, Formatting PowerPoint; Printing Handouts with Notes making; Images and Clip Art; Slide Shows.	06
Unit 5	Internet and Email: Definition about the World wide web & brief History; Use of Internet and Email- Internet, Email; Internet-Websites; The Mail Protocol; Using Search Engine and beginning Google search; Exploring the next using Internet Explorer and Navigator; Uploading and Downloading of Files and Images; E-mail ID creation- Opening the E-mailbox, Sending Messages, and Attaching Files in E-mails.	06
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of computers, their software, how to operate and use computer in the field of medical lab technology	
3	Understanding the practical aspects of computer and information sciences	
Text Books:		
1	Computer Fundamentals; Pradeep K. Sinha, Priti Sinha; BPB Publications	
2	A first course in Computer: Saxena, vikas publishing house	
Reference Books:		
1	Fundamentals of Computer Science- M. Afshar- Alam	
2	Fundamental of Information Technology by D.S. Yadav	



Second Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	II	UF-PT-150	Sociology	Multidisciplinary	2+0+0	70	30	100	2
2	06	II	UF-PT-030	Exercise Therapy-I	Major	3+0+0	70	30	100	3
3	06	II	UF-PT-148	Biophysics	Minor	3+0+0	70	30	100	3
4	06	II	UF-PT-020	Human Anatomy-II	Major	4+0+0	70	30	100	4
5	06	II	UF-PT-021	Human Anatomy-II (Laboratory)	Major	0+0+2	70	30	100	1
6	06	II	UF-PT-022	Human Physiology-II	Major	4+0+0	70	30	100	4
7	06	II	UF-PT-023	Human Physiology-II (Laboratory)	Major	0+0+2	70	30	100	1
8	06	II	UF-PT-018	Fundamentals of Yoga-II	Minor	3+0+0	70	30	100	3
9	06	II	UF-PT-019	Fundamentals of Yoga-II (Laboratory)	Minor	0+0+2	70	30	100	1
10	06	II	UF-PT-149	Basic Nursing, Emergency & CPR (Laboratory)	Minor	0+0+4	70	30	100	2
11	06	II	UMC-001	Women Rights & Law	UMC	2+0+0	GRADE BASED			2
12	06	II	UMC-005	Gow Gyan Science	UMC	2+0+0				2
13	06	II	ECA-001	Extracurricular activities	ECA	2+0+0				2
14	06	II	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				700	300	1000	32



Detailed Syllabus - 2nd Semester

Credits= 02	Sociology	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the basics of Sociology.	
Unit 1	Introduction: Meaning- Definition and scope of sociology. Its relation to Anthropology, Psychology, Social Psychology. Methods of Sociological investigations- Case study, social survey, questionnaire, Interview and opinion poll methods.	6
Unit 2	Social Factors in Health and disease situations: Meaning of social factors. Role of social factors in health and illness.	6
Unit 3	Socialization: Meaning and nature of socialization. Primary, Secondary and Anticipatory socialization. Agencies of socialization.	6
Unit 4	Family: The family, meaning and definitions. Functions of types of family. Changing family patterns. Influence of family on the individuals health, family and nutrition	6
Unit 5	Social Problems of disabled: Consequences of the following social problems in relation to sickness and disability, remedies to prevent these problems. Population explosion. Poverty and unemployment. Beggary. Juvenile delinquency. Prostitution. Alcoholism. Problems of women in employment. Geriatric problems. Problems of underprivileged.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Making a sense of the relation of Sociology with health sciences.	
3	Understanding the concepts basics to Sociology	
4	To make out the interdependence between man and society	
Text Books:		
1	Vidyabhushan and Sachdeva: 2005, An Introduction to Sociology, Allahabad, Kitab Mahal.	
2	Rao,C.N.S. : 2005, Sociology, New Delhi,S.Chand.	
Reference Books:		
1	Johnson, H. M.: 1995, Sociology: A Systematic Introduction, New Delhi, Allied Publishers.	
2	MacIver, R. M. and C. H. Page, 1965, Society: An Introductory Analysis, Macmillan.	



Credits= 3	Exercise Therapy-I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the basics of Exercise Therapy.	
Unit 1	Introduction: Introduction to exercise therapy, principles, technique and general areas of its application, Assessment & its importance. Description of fundamental starting position and derived position. Classification of movements - Describe the types, technique of application, indication, contraindications, effects and uses of the following-Active movement, Passive movement, Active assisted movement, Resisted movement, To study the principles, techniques of application indication, Contraindication & precaution.	9
Unit 2	Mechanics: Define the following terms and describe the principles involved with suitable examples, Force, Equilibrium, Gravity: Center of gravity, Line of gravity, Body Lever, Pulleys: Fixes, Movable, Springs: Series; Parallel, Tension, Elasticity: Hook's law, Axis and Planes, Definition of speed, Velocity, work, Energy, power, Acceleration, Momentum, Friction and Inertia.	9
Unit 3	Pelvic Tilt/Manual Muscle Testing/Goniometry: Describe the following: Normal pelvic tilt; alteration from normal, Anterior tilt (forward), posterior tilt (backward), Lateral tilt, Muscles responsible for alteration and pelvic rotation, Identification of normal pelvic tilt, pelvic rotation and altered tilt and their corrective measures. Principles and application techniques of Manual muscle testing, Goniometry and its types,	9
Unit 4	Motor Learning: Introduction to motor learning, Classification of motor skills, Measurement of motor performance. Introduction of motor control, Theories of motor control, Application, Learning Environment, Learning of skill, Instruction & augmented feed back, Practice condition.	9
Unit 5	Relaxation & Therapeutic Gymnasium: Describe relaxation, muscle fatigue, muscle spasm and tension (mental & physical), Factors contributing to fatigue & tension, Techniques of relaxation (local and general), Effects, uses & clinical application), Indication and contraindication. Therapeutic Gymnasium, Setup of a gymnasium & its importance,	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Exercise Therapy.	
3	Understanding the basic practical aspects of Exercise Therapy to human body.	
Text Books:		
1	Gardiner Deena.M, 2007, The Principles of Exercise therapy, 4th Edition, CBS Publishers.	
2	Kisner Carulyn, 2007, Therapeutic Exercise: Foundations & Techniques, 5th Edition, F.A. Davis Company.	
Reference Books:		
1	Kendall Peterson Florence, 1993, Muscles Testing & Functions, 6th Edition, Williams & Wilkins Publishers.	



Credits= 3	Biophysics	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Biophysics.	
Unit 1	MAIN SUPPLY: Production of electricity, types, distribution, earthing, types of plugs & switches, fuse. STATIC ELECTRICITY: Theories of electricity, production of electric charge, characteristics of charged body, potential & capacity, potential difference. CURRENT ELECTRICITY: EMF, resistance, intensity, ohm's law, DC & AC, resistance of series(parallel, devices for regulating intensity, types, construction & working of rheostat, Joule's law.	9
Unit 2	SHOCK: Types (Electric shock, Earth shock), definition, severity, causes & effects, precautions. CONDENSER: Principles, capacity (measurement & factors determining), types & construction, electric field, charging & discharging of the condenser, duration of discharge, discharge through inductance, capacity reactance. DC & AC, semiconductors & its types, diodes & transistors.	9
Unit 3	APPARATUS FOR MODIFICATION OF CURRENTS: Interruption of current-R timing circuit, multi vibrator circuits (wiring & functioning), current supplied to the patient, impulse type, surging(types & circuits). MAGNETISM: Nature & types, molecular theory of magnetism, properties of magnet, magnetic effects of electric currents- electromagnets, milliamp parameter & voltmeter (construction & working), meters for measuring AC.	9
Unit 4	ELECTROMAGNETIC INDUCTION: Principles (Faraday's/ Lenz's law), production, direction of induced EMF, strength of induced EMF, types(self & mutual induction), inductive reactance, Eddy currents, dynamo & transformers, choke coil (types & function). ELECTRICAL SKIN RESISTANCE: Electrodes used. Electrode gel.	9
Unit 5	PHYSIOLOGY OF PAIN, ELECTROMAGNETIC SPECTRUM: Electromagnetic radiation, laws governing EMR, laws of reflection-refraction, absorption, attenuation, cosine law, inverse square law, Grothus law.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of basic physics.	
3	Understanding the biomedical aspects of physics.	
Text Books:		
1	Forester Angela,2007, Clayton's electrotherapy, 8th Edition, CBS Publishers.	
2	Forester Angela, 1985, Clayton's electrotherapy (physiotherapy essentials), 9th Edition, Bailliere Tindall Publishers.	
Reference Books:		
1	Nelson.M. Rogar, 1999, Clinical Electrotherapy, 3rd Edition, Pearson Education Inc.	
2	Kahn Joseph, 2000, Principles & practice of Electrotherapy, 4th Edition, Churchill Livingstone Publishers.	



Credits= 4	Human Anatomy-II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Human Anatomy.	
Unit 1	General Anatomy: Anatomical positions of the body, axes & planes, common anatomical terminologies (groove, tuberosity, trochanter etc.), Fascia - hard connective tissue, Bones-composition & functions, classifications & types according to morphology & development.	12
Unit 2	Joints: definition, classification, structure of fibrous cartilaginous joints, movements of joints, blood supply & nerve supply.	12
Unit 3	Regional anatomy: Superior extremity- joints with extra articular structures, Osteology- bones of upper limb & hand. Soft parts- breast, pectoral region & muscles, fascia, ligaments, blood vessels, nerves with lymphatic drainage of the upper limb.	12
Unit 4	Inferior extremity and Trunk: Osteology- bones & joints with extra articular structures of lower limb, blood vessels & nerves, lymphatic drainage of leg, arches of the foot, skin of the foot. Trunk- osteology- all the bones of the spine	12
Unit 5	Bones of the skull & mandible/Thoracic: muscles of the face, extra ocular muscles, salient points about the eyeball & internal ear. Thoracic cage, respiratory muscles, muscles and mechanics of breathing, Radiological anatomy of musculoskeletal system.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Human Anatomy.	
3	Understanding the Human body in detail.	
Text Books:		
1	Chaurasia, B.D.,(2017), Human Anatomy. Volume 1, 2 ,3 & 4th, 7th Edition,CBS Publishers & Distributers Pvt.Ltd.	
2	Singh Inderbir, (2004), Atlas of Human Anatomy, 1st Edition, Jaypee brothers Medical publishers.	
Reference Books:		
1	Singh nderbir, (2009), Textbook of Human osteology, 3rd Edition, Jaypee Bothers medical publishers.	
2	Drake.L. Richard, (2014), Gray's Anatomy,3rd Edition, Elsevier Health Sciences.	



Credits= 1	Human Anatomy-II (Laboratory)	0+0+2 Total Lectures:15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Study the bones of Upper limbs	3
2	Study the bones of Lower limbs	3
3	Study the bones of Spine	3
4	Study the bones of Skull and mandible.	3
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of human body.	
3	Demonstration of the practical aspects of human body.	



Credits= 4	Human Physiology-II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Human Physiology.	
Unit 1	ENDOCRINE: Secretion, Regulation, Functions of pituitary, thyroid, adrenal, pancreas, parathyroid, Testis & Ovaries.	12
Unit 2	RESPIRATORY SYSTEM: Introduction, general organization. Mechanics of respiration, Pulmonary volumes & capacities, Transport of respiratory gases, Nervous and chemical, control of respiration, Pulmonary function tests.	12
Unit 3	CARDIOVASCULAR SYSTEM: Structure and properties of cardiac muscle, Cardiac cycle, Regulation of heart rate, Cardiac output, Blood pressure and its regulation, Regional circulation- coronary, skin, muscle, cerebral circulation, Cardio respiratory and cardiac performance changes during exercise, Normal ECG.	12
Unit 4	PHYSIOLOGY OF EXERCISE: Effects of acute and chronic exercise on, O ₂ transport, Muscle strength/power/endurance, B.M.R/R.Q, Hormonal and metabolic effect, Cardiovascular system, Respiratory system, Body fluids and electrolytes, Effect of gravity/Altitude/Acceleration/Pressure on Physical parameters.	12
Unit 5	Physiology of age.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Human Physiology.	
3	Understanding the practical aspects of Human Physiology.	
Text Books:		
1	Chaudhuri,K,Sujit, (2016), Concise Medical Physiology, 7th Edition, NCBA Publishers	
2	Chatterjee CC, (2018), Human Physiology, Vol.1 & 2,12th Edition, CBS publishers & Distributors put.Ltd.	
Reference Books:		
1	Marieb.N.Elaine, (2006), Human Anatomy & Physiology, 6th Edition, Pearson Education, INC	
2	Silverthorn Unglaube dee, (2016), Human Physiology, 6th Edition, Pearson Education, INC	



Credits= 01	Human Physiology-II (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Learn and Demonstrate the Physiological functioning of respiratory system	5
2	Learn and Demonstrate the various physiological tests in exercise.	5
3	Learn and Demonstrate the physiological functioning of cardiovascular system	5
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of physiology.	
3	Demonstration of the practical aspects of human physiology.	



Credits= 3	Fundamentals of Yoga-II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Yogic sciences.	
Unit 1	General Introduction: to Indian Philosophy and its relations with Yoga, Asanas as preventive measures, Definition of Yoga according to Patanjali yoga sutra, Bhagwat Gita and Yoga Vasishtha, Concepts of Yoga according to Upanishads and Puranas.	9
Unit 2	Meaning and Importance: of Physical Fitness, Wellness and Lifestyle. Components of Physical Fitness, Health related fitness and wellness. Concepts of positive Lifestyle, MUDRAS: Vipareetkarani Mudra, Kaki Mudra, BANDHAS: Mool, Uddiyana, Jalandhar, Tribandha, Brahmacharya - its meaning , benefits and practice methods.	9
Unit 3	Breathing Exercises and its types-Yogic Breathing-Naadi Shodhanand, Sheetal, Sheetakari, Bhramari, Ujjai, Bhastrika, Kapalbhathi, SuryaBheda, Bahyavritti, Mantra Japa	9
Unit 4	Stretching Exercises: and its benefits.	9
Unit 5	Concepts and advantages: of correct Posture, Causes of Bad Posture, Common Postural deformities, corrective measures and their yogic remedies.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Yoga	
3	Understanding the practical aspects of Yogic sciences.	
Text Books:		
1	Singh SP and Yogi Mukesh, (2010), Foundation of Yoga, Standard Publication, New Delhi.	
2	Lal Basant kumar, (2013), Contemporary Indian Philosophy, Motilal Banarsidas Publishers pvt.ltd. Delhi.	
Reference Books:		
1	Sharma VK, (2018), Health and Physical Education, New Saraswati House (India) Pvt.Ltd.	
2	Agarwal MM, (2010), Six systems of Indian Philosophy, Chow khambha vidya Bhawan, Varanasi.	



Credits= 01	Fundamentals of Yoga-II (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical aspects of the Human Body.	
1	Learn and Demonstrate the Mudras	3
2	Learn and Demonstrate the Stretching Exercises.	3
3	Learn and Demonstrate the Breathing Exercises	4
4	Learn and Demonstrate the Posture correction Asanas.	5
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of yoga.	
3	Demonstration of the practical aspects of yoga on human body.	



Credits= 02	Basic Nursing, Emergency & CPR (Laboratory)	0+0+4 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the Basic Nursing, Emergency & CPR.	
Unit 1	Introductory class: What is Nursing? Nursing principles, Interpersonal relationship, bandaging, basic turns, bandaging extremities, triangular bandages & their application.	6
Unit 2	Lifting & transporting patients: Lifting patients up in the bed, transferring from bed to wheel chair, transferring from bed to stretcher, Surgical dressing, First Aid & CPR.	6
Unit 3	Nursing position: Environment safety, bed making, prone, lateral, dorsal, dorsal recumbent, Fowler's positions, comfort measures, aids to rest & sleep, Care of rubber goods-Observation, reporting and recording temperature, respiration and pulse, simple aseptic technique, sterilisation and disinfection.	6
Unit 4	Components of physiotherapy profession: History of medical therapeutics, History of Physiotherapy- international, National & local, Professional & governmental licensing accreditation & educational standards.	6
Unit 5	Role of Physiotherapist in healthcare needs in India: Needs of physiotherapy versus demand, Physiotherapist as "Educator", Common problems & salvation.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Demonstrate the skills of basic nursing, CPR in Emergency.	
3	Understanding and demonstration of the Emergency procedure.	
Text Books:		
1	D.E.Raj Bhaskara, (2018), Text Book of Nursing Education, 2nd Edition, Emmess Medical Publishers.	
2	BT Basvanthappa, (2009), Nursing Education, 2nd Edition, Jaypee brothers Medical Publishers.	
Reference Books:		
1	Kaur Jaspreet, (2017), Text book of Nursing Education, 1st Edition, Jaypee Brothers Medical Publishers.	



Credits= 2	Women Rights and Law	2+0+0 Total Lectures:
Objective:	The paper aims at creating awareness as to importance and role of women in society through the medium of law. It also focuses on women welfare laws.	
1	Introduction of Women Rights And Law: Definition of women, awareness about women rights, appeal for remedies	
2	Global Status of Women: Civil and Political Rights ii. Social and Cultural rights, Participation in Panchayat and Municipalities,	
3	Rights and awareness of marriage and divorce : Marriage Conditions, Ceremonies, Registration, ,Void & Voidable Marriages, Legitimacy of Children of Void & Voidable Marriages, Punishment of Bigamy	
4	Divorce: Divorce Common Grounds for Divorce, No Petition for divorce within 1year of marriage, Divorced Person when may marry again	
5	Rights on maintenance: Maintenance: Wife, widowed daughter-in-law, Children, Amount of Maintenance , Interim Maintenance, Maintenance Provisions under Cr.PC,	
6	Rights of Adoption: Adoption: Requisites of a valid adoption, Capacity of a male Hindu to take in adoption, Capacity of a female Hindu to take in adoption	
7	Persons capable of giving in adoption, Persons who may be adopted, Effects of Adoption,.	
8	Rights of private defence: Right of Private defence for body and property	
9	Crime against women: Dowry Death, Cruelty by Husband or Relatives of Husband, Sex Selection & Causing Miscarriage, Outraging the modesty of a woman, Offences regarding Prostitution, Rape, Bigamy, Adultery, Domestic Violence,	
10	Sexual harassment of women: Sexual harassment in home, society and work place	
11	Medical termination Pregnancy act 1971: Liberalizing the provisions relating to abortion	
12	The Pre-Conception and Pre-Natal Diagnostic Techniques Act, 1994: Pre-Natal Diagnostics test and oath	
13	Surrogacy : Commercial Surrogacy in India & its regulation,	
14	Women empowerment: Role of Enforcement Machineries (Reform through judicious interventions)	
15	Role for national women commission for women	



Credits= 2	Gow Gyan Science	2+0+0 Total Lectures:
Objective:	The paper aims at creating awareness as to importance and role of Gow Gyan in society.	
1	Fundamentals of Gau with special reference to ancient Indian literature Unit-I Introduction to Gau. Verities (Gau vansh) of Cows in India. Unit-II (Gau in ancient Indian literature) Description of Gau in various ancient Indian literatures.	
2	Significance of Gau in current scenario Unit-I Economical importance Unit-II General, medicinal and spiritual importance	
3	Anatomy of Gau Unit-I General structure and anatomy of Gau Unit-II Effect of various factors on the quality of Gau-products.	
4	Gau milk and its significance Unit-I Physical and chemical properties of milk. Unit-II Biological significance of milk. Milk as medicine. Research prospective of milk.	
5	Gaumutra and its significance Unit-I Physical and chemical characteristics of milk. Unit-II Biological significance of Gaumutra. Gaumutra as medicine. Research prospective of cow urine.	
6	Cow dung and its significance Unit-I Physical and chemical characteristics of cow dung. Unit-II Cow dung in medicine. Research prospective of cow dung	



Third Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	III	UF-PT-151	General Medicine & Surgery	Minor	3+0+0	70	30	100	3
2	06	III	UF-PT-053	Pharmacology	Minor	3+0+0	70	30	100	3
3	06	III	UF-PT-028	Electrotherapy - I	Major	3+0+0	70	30	100	3
4	06	III	UF-PT-029	Electrotherapy - I (Laboratory)	Major	0+0+2	70	30	100	1
5	06	III	UF-PT-034	Pathology & Microbiology	Minor	3+0+0	70	30	100	3
6	06	III	UF-PT-152	ENT, Ophthalmology & Dermatology	Minor	2+0+0	70	30	100	2
7	06	III	UF-PT-045	Exercise therapy- II	Major	3+0+0	70	30	100	3
8	06	III	UF-PT-046	Exercise therapy -II (Laboratory)	Major	0+0+2	70	30	100	1
9	06	III	UF-PT-153	Radio-diagnosis	Minor	2+0+0	70	30	100	2
			Sub -Total (A)				680	270	950	22



Detailed Syllabus - 3rd Semester

Credits= 3	General Medicine & Surgery	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the General Medicine.	
Unit 1	Infection and Poisoning: Effects, Pathology, source and spread of infection, vaccinations, generalized infections, rashes and infection, food poisoning and gastroenteritis sexually transmitted diseases, HIV infections and Aids. Poisoning: Clinical features, general management, common agents in poisoning , pharmaceutical agents, drugs of misuse.	9
Unit 2	Surgical procedures and preparations: Physiological responses of the body for surgical stress (cardiopulmonary, metabolic), Blood Transfusion, Wounds, surgical sinuses and tropic ulcers, principles of treatments, Hemorrhage, shock, water and electrolyte balance, Principles of surgical management.	9
Unit 3	Diseases of Digestive and Endocrine system: Common presenting symptoms of Endocrine diseases, common classical disease presentations, clinical features and its management, Diabetes Mellitus, Etiology, clinical features, diagnosis, complications and treatment of the following conditions : Reflux Oesophagitis, Achalasia Cardia, Carcinoma of Oesophagus, GI bleeding, Peptic Ulcer disease, Carcinoma of Stomach, Pancreatitis, Malabsorption Syndrome, Ulcerative Colitis, Peritonitis, Viral Hepatitis, Wilson's Disease, Alpha1-antitrypsin deficiency, Tumours of the Liver, Gall stones, Cholecystitis.	9
Unit 4	Burns- classifications, causes and clinical features, early and late complications (cardiac, pulmonary, metabolic, renal, skin, musculoskeletal), management and complications.	9
Unit 5	Pediatrics: Problems and management of LBW infants, Perinatal, Congenital abnormalities, Respiratory conditions of childhood, Cerebral Palsy, Spina Bifida, Epilepsies: types, diagnosis and treatment, Orthopedic and Neuromuscular disorders in childhood, Sensory disorders: problems resulting from loss of vision and hearing.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Medicine & Surgery.	
3	To understand the diseases and its management.	
Text Books:		
1	Innes Alastair J, 2015, Davidson's Essentials of Medicine, 2nd Edition, Elsevier Health-UK.	
2	Das S, (2018), A concise textbook of Surgery, 10th Edition, Dr Somen das Publishers, Kolkata..	
Reference Books:		
1	Fauci Jameson, 2018, Harrison's Principles of Internal Medicine, Vol.1&2, 20th Edition, McGraw Hill Education.	



Credits= 3	Pharmacology	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Pharmacology.	
Unit 1	General Pharmacology and ANS: Introduction, Definitions, Classification of drugs, Sources of drugs, Routes of drug administration, Distribution of drugs, Metabolism and Excretion of drugs, Pharmacokinetics, Pharmacodynamics, Factors modifying drug response, Adverse effects. Autonomic Nervous system, The Sympathetic and Parasympathetic Systems, Receptors, Somatic Nervous System, Cholinergic and Anti-Cholinergic drugs, Adrenergic and Adrenergic blocking drugs, Peripheral muscle relaxants.	9
Unit 2	Cardiovascular Pharmacology: Drugs used in the treatment of heart failure, Antihypertensive Drugs, Anti-arrhythmic Drugs, Vascular Disease, Homeostasis Lipid-Lowering agents, Antithrombotics, Anticoagulants and Thrombolytics Ischemic Heart Disease – Nitrates, Beta-Blockers, Calcium Channel Blockers, Cerebral Ischaemia Peripheral Vascular Disease.	9
Unit 3	Neuropharmacology: Sedative-Hypnotic Drugs: Barbiturates, Benzodiazepines, Anti-anxiety Drugs: Benzodiazepines, Other Anxiolytics Drugs Used in Treatment of Mood Disorders: Monoamine Oxidase Inhibitors, Tricyclic Antidepressants, Atypical Antidepressants, Lithium, Antipsychotic drugs. Drugs used in Treatment of Parkinson's disease, Anti epileptic Drugs, Spasticity and Skeletal Muscle Relaxants.	9
Unit 4	Inflammatory/Immune Diseases: Non-narcotic Analgesics and Non steroidal, Anti-Inflammatory Drugs: Acetaminophen, NSAIDs, Aspirin, Non aspirin NSAIDs, drug Interactions with NSAIDs, Glucocorticoids, Rheumatoid Arthritis, Osteoarthritis, Gout, Myasthenia gravis, Idiopathic Inflammatory Myopathies, systemic lupus Erythematosus, Scleroderma, Demyelinating Disease, Obstructive Airway Diseases, Allergic Rhinitis, Peptic Ulcer Disease, Constipation, Diarrhoea, Diabetes Mellitus.	9
Unit 5	Geriatrics- Adverse effects of special concern in the Elderly, Dementia, Postural hypotension. Antibiotics: Definition, choice of agents, resistance, prophylactic groups, Very brief introduction of drugs name, mechanism, uses and specific toxicity.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Drugs.	
3	To understand the effects of drugs on human body.	
Text Books:		
1	Tripathi KD, 2018, Essential of Medical Pharmacology, 8th Edition, Jaypee brothers Medical Publishers.	
2	Uday kumar P, 2017, Text book of Medical Pharmacology, 5th Edition, CBS Publishers.	
Reference Books:		
1	Reznik Jacqueline, 2017, Pharmacology Handbook for Physiotherapists, 2nd Edition, Elsevier	



Credits= 3	Electrotherapy - I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Electrotherapy.	
Unit 1	Currents: Basic types of current: Direct Current: types, physiological & therapeutic effects, Alternating Current, Types of Current used in Therapeutics, Modified D.C: Faradic Current, Galvanic Current, Modified A.C: Sinusoidal Current, Dia dynamic Current, HVPGS-Parameters & its uses.	9
Unit 2	Ionisation / Iontophoresis: Techniques of Application of Iontophoresis, Indications, Selection of Current, Commonly used Ions (Drugs) for pain, hyperhydrosis, wound healing. Cathodal/Anodal galvanism. Micro Current & Macro Current.	9
Unit 3	Types of Electrical Stimulators: NMES- Construction component, Neuro muscular diagnostic stimulator- construction component. Components and working Principles. Principles of Application: Electrode tissue interface, Tissue Impedance, Types of Electrode, Size & Placement of Electrode – Water bath, Unipolar, Bi-polar, Electrode coupling, Current flow in tissues, Lowering of Skin Resistance.	9
Unit 4	Nerve Muscle Physiology: Action Potential, Resting membrane potential, Propagation of Action Potential, Motor unit, synapse, Accommodation, Stimulation of Healthy Muscle, Stimulation of Denervated Muscle, Stimulation for Tissue Repair.	9
Unit 5	Pain: Define Pain, Theories of Pain (Outline only), Pain Gate theory in detail.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Electrotherapy.	
3	To understand the effects of electrotherapy on human body.	
Text Books:		
1	Forester Angela, 2007, Clayton's electrotherapy, 8th Edition, CBS Publishers.	
2	Forester Angela, 1985, Clayton's electrotherapy (physiotherapy essentials), 9th Edition, Bailliere Tindall Publishers.	
Reference Books:		
1	Nelson.M. Rogar, 1999, Clinical Electrotherapy, 3rd Edition, Pearson Education Inc.	
2	Kahn Joseph, 2000, Principles & practice of Electrotherapy, 4th Edition, Churchill Livingstone Publishers.	



Credits= 01	Electrotherapy-I (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical basics of Exercise Therapy.	
1	Learn and Demonstrate the Various Currents.	3
2	Learn and Demonstrate the various equipments.	4
3	Learn and Demonstrate the understanding of pain patterns	4
4	Learn and Demonstrate the functioning of pain equipments	4
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Electrotherapy.	
3	Demonstration of the practical aspects of various equipments.	



Credits= 3	Pathology & Microbiology	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the basics of Pathology and Microbiology.	
Unit 1	Inflammation and Repair: Acute and chronic inflammation, Repair, Wound healing by primary and secondary union, factors promoting and delaying the process. Healing in specific site including bone healing. Pneumonia, Bronchitis, Bronchiectasis, Asthma, Tuberculosis, Carcinoma of lungs, Occupational lung diseases.	9
Unit 2	Stomach: Gastritis, Ulcer & Tumours, Jaundice: Types, aetio-pathogenesis and diagnosis, Hepatitis: Acute, Chronic, neonatal, Alcoholic liver disease, Cirrhosis: Post necrotic, Alcoholic, Metabolic and Portal hypertension Liver abscesses; Pyogenic.	9
Unit 3	Infectious diseases: Pyogenic, Diphtheria, Gram negative infection, Bacillary dysentery, Poliomyelitis, Herpes, Rabies, Measles, Ricktsia, Chlamydial infection, HIV infection, Malaria, Filaria, Amoebiasis, Kala-azar, Cysticercosis, Hydatid cyst, Anaemia, Vascular and Platelet disorders & lab diagnosis, Leukocytosis, Leukopenia, Leukemoid reaction.	9
Unit 4	General Microbiology: Definitions: infections, parasite, host, vector, fomites, contagious disease, infectious disease, epidemic, endemic, pandemic, Zoonosis, Epizootic, Attack rate, Normal flora of the human body, Routes of infection and spread; endogenous and exogenous infections; source at reservoir of infections, Sterilisation, disinfection and universal precautions in relation to patient care and disease prevention. Bacteriology: Morphology, classification according to pathogenicity, mode of transmission, methods of prevention, collection and transport of samples for laboratory diagnosis, interpretation of laboratory reports of major common bacteria.	9
Unit 5	Clinical/Applied Microbiology: Streptococcal infections: Rheumatic fever and Rheumatic heart disease, Meningitis, Tuberculosis, leprosy, Sexually transmitted diseases, Hepatitis, Urinary tract infections, Wound infection, Filariasis, Meningitis, Anaerobic Infections, Respiratory Tract Infections.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Pathology and Microbiology.	
3	Understanding the clinical aspects of Pathology and Microbiology.	
Text Books:		
1	Baveja CP, 2017, Textbook of Microbiology for Physiotherapy, Edition, Arya Publications.	
2	Kanungo Reba, 2017, Paniker's Textbook of Microbiology, 10th Edition Universities Press.	
3	Harsh Mohan (2019) Textbook of Pathology, 8th Edition, Jaypee brothers Medical publishers.	
Reference Books:		
1	Tortora J Gerard, 2015, Microbiology: A introduction, 12th Edition, Global Edition Pearson.	



Credits= 02	ENT, Ophthalmology and Dermatology	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the basics of ENT, Ophthalmology and Dermatology.	
Unit 1	Introduction to ENT: Describe pathophysiology, signs and symptoms, clinical features, examination and management of diseases of ENT conditions: Anatomy and physiology of hearing, General introduction to diseases of E.N.T., emphasis on otitis media, facial palsy classification, medical and surgical management of lower motor neuron type of facial palsy, sinusitis, rhinitis.	6
Unit 2	ENT Surgical Conditions: Mastoid surgery. Larynx and associated functional paralysis with tracheostomy and care of tracheostomy. Causes of hearing loss, Conservative and surgery intervention including types and availability of hearing aids.	6
Unit 3	Ophthalmology: Describe pathophysiology, signs and symptoms, clinical features, examination and management of diseases of Ophthalmic conditions: Ophthalmologic surgical conditions, Refractions, Conjunctivitis, Glaucoma, Corneal ulcer, Iritis, Cataract, Retinitis, Detachment of retina, Defects of extra-ocular muscles-surgical management.	6
Unit 4	Dermatology: Describe pathophysiology, signs & symptoms, clinical features, examination and management of diseases of Skin conditions: Leprosy, Pigmentary anomalies, Vasomotor disorders, Tropic Ulcers and their classification and management, Dermatitis, Coccal and fungal parasitic and viral infections.	6
Unit 5	Skin diseases: related to Rheumatology, Tropical skin diseases.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of ENT, Ophthalmology and Dermatology.	
3	Understanding the clinical aspects of ENT, Ophthalmology and Dermatology.	
Text Books:		
1	Khurana AK, 2019, Comprehensive Ophthalmology, 7th Edition, Jaypee Brothers Medical Publishers.	
2	Shah N, 2016, Clinical ENT, 2nd Edition, CBS Publishers.	
3	Burge Susan, 2016, Oxford Handbook of Medical Dermatology, 2nd Edition, OUP Oxford.	
Reference Books:		
1	Ko.J. Christine, 2016, Dermatology, 2nd Edition, Elsevier Publishers.	
2	Walker.R.Brian, 2014, Davidson's Principles & Practice of Medicine, 22nd Edition, Churchill Livingstone.	



Credits= 3	Exercise Therapy-II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the basics of Exercise Therapy.	
Unit 1	Training Exercises: Proprioceptive Neuromuscular Facilitation, Strengthening, Stability: Alternating isometric, rhythmic stabilization, Skill: timing for emphasis, resisted progression Endurance: slow reversals, agonist reversal. Functional Re-education, Isotonic: De Lormes, Oxford, Mac Queen, Circuit weight training, Isometric: BRIME (Brief Resisted Isometric Exercise), Multiple Angle, Isometrics, Isokinetic regimens.	9
Unit 2	Walking Aids: Types, Principles and gait training with walking aids, Pre-crutch training, Individual and Group Exercises: Advantages and Disadvantages, Organization of Group exercises, Recreational Activities and Sports, Trick movements, Use of apparatuses/equipments in Exercise Therapy.	9
Unit 3	Aerobic Exercise: Definition and key terms; Physiological response, Examination and evaluation, Exercise Testing, Determinants of an Exercise Program, The Exercise Program, Normal and abnormal response to acute aerobic exercise, Physiological changes that occur with training, Aerobic conditioning program, Breathing exercises, Stretching, Types of Contracture, Tissue response towards immobilization and elongation,	9
Unit 4	Balance: Balance, Co-ordination Exercise, Definitions: Co-ordination, In co-ordination Causes for In co-ordination, Test for co-ordination: equilibrium test, non-equilibrium test Principles of co-ordination exercise. Frenkel's Exercises.	9
Unit 5	Posture and Hydrotherapy: Definition, Types, Postural Mechanism, Patterns of Posture, Factors influencing Posture, Principles of re-education: corrective methods and techniques, Patient education. Crawling exercises: principles, types, effects and uses of Clapp's crawl. Hydrotherapy in detail.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Exercise Therapy.	
3	Understanding the basic clinical aspects of Exercise Therapy to human body.	
Text Books:		
1	Gardiner Dena.M, 2007, The Principles of Exercise therapy, 4th Edition, CBS Publishers.	
2	Kisner Caruly, 2007, Therapeutic Exercise: Foundations & Techniques, 5th Edition, F.A. Davis Company.	
Reference Books:		
1	Kendall Peterson Florence, 1993, Muscles Testing & Functions, 6th Edition, Williams & Wilkins Publishers.	
2	Norkin.c.Cynthia, 2017, Measurement of joint motion, 5th Edition, Jaypee Brothers Medical Publishers.	



Credits= 01	Exercise Therapy-II (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical basics of Exercise Therapy.	
1	Learn and Demonstrate the Movements and patterns	4
2	Learn and Demonstrate the Stretching Exercises.	4
3	Learn and Demonstrate the Walking aids	3
4	Learn and Demonstrate the Posture	4
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Exercises.	
3	Demonstration of the practical aspects of Exercise Therapy.	



Credits= 02	Radio-diagnosis	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the Radio-diagnosis.	
Unit 1	IMAGE INTERPRETATION: History, A New Kind of Ray, How a Medical Image Helps, What Imaging Studies Reveal, Radiography (x-rays), Fluoroscopy, Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Ultrasound, Endoscopy.	6
Unit 2	Radiography: Interpretation of X-ray films, MRI, CT scan and ultrasound in common conditions.	6
Unit 3	COMPUTED TOMOGRAPHY (CT): What is Computed Tomography?, Equipment used for Computed Tomography, Indications and Contra indications, How it helps in diagnosis, The Findings in Computed Tomography, Benefits versus Risks and Costs.	6
Unit 4	MAGNETIC RESONANCE IMAGING (MRI): What is MRI? Equipment used for MRI, Indications and Contra indications, How it helps in diagnosis, The Findings in MRI, Benefits versus Risks and Costs, Functional MRI.	6
Unit 5	SONOGRAPHY: What is Ultrasound?, Equipment used for Ultrasound, Indications and Contra indications d.How it helps in diagnosis, The Findings in Ultrasound, Benefits versus Risks and Costs.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Radiological findings.	
3	To understand the clinically about the investigation procedures.	
Text Books:		
1	Sutton David, 2003, Text book of Radiology & imaging, Vol. 1 and 2, 7th Edition, Elsevier Publications.	
2	Grainger & Allison, 2016, Diagnostic Radiology, Vol. 1 and 2, 6th Edition, Elsevier Publications.	
Reference Books:		
1	Curry, 1990, Christensen's Physics of Diagnostic Radiology, 4th Edition, Wolters Kluwer India Pvt. Ltd	



Fourth Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	IV	UF-PT-064	Orthopedics	Major	4+0+0	70	30	100	4
2	06	IV	UF-PT-075	Pediatrics	Major	3+0+0	70	30	100	3
3	06	IV	UF-PT-041	Electrotherapy - II	Major	4+0+0	70	30	100	4
4	06	IV	UF-PT-024	Biomechanics & Kinesiology-I	Major	4+0+0	70	30	100	4
5	06	IV	UF-PT-155	Research Methodology- I	Minor	4+0+0	70	30	100	4
6	06	IV	UF-PT-154	Sports Nutrition	Minor	2+0+0	70	30	100	2
7	06	IV	UF-PT-042	Electrotherapy – II (Laboratory)	Major	0+0+4	70	30	100	2
8	06	IV	VAD-003	Environmental studies & disaster management	UMC	2+0+0	GRADE BASED			2
9	06	IV	UMC-002	Military Science & Civil Defence	UMC	2+0+0				2
10	06	IV	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	IV	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				490	210	700	31



Detailed Syllabus - 4th Semester

Credits= 4	Orthopedics	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Orthopedics.	
Unit 1	Introduction to orthopedics. Clinical examination in an Orthopedic patient. Common investigative procedures. Radiological and Imaging techniques in Orthopedics. Inflammation and repair, Soft tissue healing.	12
Unit 2	Fractures: definition, types, signs and symptoms. Fracture healing. Complications of fractures. Fractures of cervical spine, thoracic and lumbar regions, rib cage and sternum. Conservative and surgical management. Principles of management—reduction (open/closed, immobilization etc). Subluxation/ dislocations — definition, signs and symptoms, management (conservative and operative).	12
Unit 3	Soft Tissue Injuries and Deformities - Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis. Mechanism of injury, clinical features, managements- conservative and surgical of the common soft tissue injuries of muscles, joints, tendon, bursae, ligaments. Common deformities of musculoskeletal system- congenital and acquired.	12
Unit 4	Inflammatory and Degenerative Conditions: causes, clinical feature, complications, deformities, radiological features, management- conservative and surgical for the common conditions. Eg: Arthritis etc. Syndromes. Eg: Thoracic outlet syndrome etc. Pathologies, Eg: PIVD etc.	12
Unit 5	Common Regional Conditions: Definition, Clinical features and management of the following regions: Shoulder, Elbow, Wrist, Pelvis and Hip, Knee, Ankle.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Orthopedics.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Maheshwari J, (2012), Essentials Orthopedics, 4th Edition, Jaypee Brothers Medical Publishers (P)Ltd. New Delhi.	
2	Ebnezar John, (2012), Essentials of Orthopedics for Physiotherapists, 2nd Edition, Jaypee Brothers Medical Publishers (P)Ltd, New Delhi.	
Reference Books:		
1	Natarajan MV, (2018), Textbook of Orthopedics and Traumatology, 8th Edition, Wolters Kluwer India Private Limited.	



Credits= 03	Pediatrics	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Pediatrics.	
Unit 1	Development of child and Milestones: Normal Development and maturation, Factors affecting Neuro development, Assessment and early intervention, Birth trauma, pre-maturity, intrauterine and early infancy conditions.	9
Unit 2	Neuromuscular conditions: Congenital, hereditary, peripheral conditions- Muscular dystrophy, Down's syndrome, Brachial plexus injury, Mental retardation- Aetio-pathology, management, inborn errors of metabolism, Mixed connective tissue Disease (MCTD)	9
Unit 3	Deficiency and Infections: Malnutrition and vitamin deficiencies. Eg: Rickets, CNS involvement in children. Eg: Meningitis, Infections of CNS. Eg: Poliomyelitis, Endocrinal disorders in children, Childhood obesity and its complications, Juvenile arthritis, Still's disease (juvenile rheumatoid arthritis).	9
Unit 4	Respiratory conditions and their management: Asthma, Tuberculosis, Bronchiectasis, Acute paediatric respiratory distress syndrome, Intensive neonatal: paediatric, paediatric surgical unit care.	9
Unit 5	Congenital cardiovascular and their management: Rheumatic fever, ASD, VSD, Tetralogy of Fallot.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Paediatrics.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Ghai OP, (2018), Essentials paediatrics, 8th Edition, CBS Publishers and Distributors(P)Ltd. New Delhi.	
2	Mclaren, (1991), Textbook of Paediatric Nutrition, 3rd Edition, Churchill Livingstone publishers.	
Reference Books:		
1	Kliegman M Robert, (2015), Text book of Paediatrics, Volume 1 and 2, 20th Edition, Elsevier Publishers.	



Credits= 04	Electrotherapy - II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Electrotherapy.	
Unit 1	Low frequency and EMG: TENS: Definition, types, Dosage parameters, Physiological & Therapeutic effects, Indications & Contraindications. Electro-diagnosis:FG Test, SD Curve: Methods of Plotting SD Curve, Apparatus selection, Characteristics of Normally innervated, Partially Denervated Muscle and completely denervated Muscle, Chronaxie & Rheobase, Nerve conduction velocity studies, EMG: Construction of EMG equipment, Bio-feed back.	12
Unit 2	Medium Frequency: Definition, Principle of Production, Types, Methods, Dosage Parameters, Physiological & Therapeutic effects, Indications & Contraindications of IFT, LASER, MWD, IRR, UVR. Russian Current: Rebox type Current, SCENAR,PEMF	12
Unit 3	High Frequency: Definition, Frequency & Wavelength, Principle of Production, Methods of Heat Production of treatment, Types of Electrode, Placement & Spacing of Electrodes, Tuning, Testing of Apparatus, Physiological & Therapeutic effects, Indications & Contraindications, Dangers, Dosage parameters of SWD and MWD. Thermo & Actinotherapy (High Frequency Currents): Electro Magnetic Spectrum.	12
Unit 4	Ultrasound and Phonophoresis: Definition, Frequency, Piezo Electric effects, Production of US, Treatment Dosage parameters: Continous & Pulsed mode, Intensity, US Fields, Attenuation, Coupling Media, Thermal effects, Non- thermal effects, Uses of US, Indications & Contraindications, Dangers of Ultrasound. Phonophoresis: Define Phonophoresis, Methods of application, Commonly used drugs, Uses.	12
Unit 5	Superficial modalities: Physiological & Therapeutics effects, Techniques of Applications, Indications & Contraindications, Dangers, Methods of application with dosages of Wax therapy, Moist heat therapy, Cryotherapy, Whirlpool and contrast bath.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Electrotherapy.	
3	To understand the effects of electrotherapy on human body.	
Text Books:		
1	Forester Angela, 2007, Clayton's electrotherapy, 8th Edition,CBS Publishers.	
2	Forester Angela, 1985, Clayton's electrotherapy (physiotherapy essentials), 9th Edition, Bailliere Tindall Publishers.	
Reference Books:		
1	Nelson.M. Rogar, 1999, Clinical Electrotherapy, 3rd Edition, Pearson Education Inc.	
2	Kahn Joseph, 2000, Principles & practice of Electrotherapy, 4th Edition, Churchill Livingstone Publishers.	



Credits= 04	Biomechanics & Kinesiology-I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Biomechanics and Kinesiology.	
Unit 1	Basic Concepts in Biomechanics: Kinematics and Kinetics, Definition of Forces, Force of Gravity, Reaction forces, Equilibrium, Objects in Motion, Force of friction, Concurrent force systems, Parallel force systems, Work, Moment arm of force, Force components, Equilibrium of levers.	12
Unit 2	Joint structure and Function, Analysis of Posture: Static and dynamic posture, control, kinetics and kinematics of posture, ideal posture analysis, effects of posture on age, pregnancy, occupation and recreation.	12
Unit 3	Muscle structure and function: Mobility and stability functions of muscles, Elements of muscle structure, Muscle function, Effects of immobilisation, injury and aging. Gait- General features, kinematics and kinetics, kinematics and kinetics of the trunk, upper extremities in relation, stair case climbing and running, effects of various factors, injuries and mal alignment, ADL activities.	12
Unit 4	Biomechanics of the Thorax and Chest wall: General structure and function, Rib cage and the muscles associated with the rib cage, Ventilatory motions: its coordination and integration, Developmental aspects of structure and function, Changes in normal structure and function in relation to pregnancy, scoliosis and COPD.	12
Unit 5	Biomechanics of the vertebral column: General structure and function, Regional structure and function – Cervical region, thoracic region, lumbar region, sacral region, Muscles of the vertebral column, General effects of injury and aging.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Biomechanics and Kinesiology.	
3	To understand the clinical aspects of Kinesiology.	
Text Books:		
1	Levangie K Pamela, (2019), Joint Structure and Function – A comprehensive Analysis, 6th Edition, JP Bros Medical Publishers, New Delhi.	
2	Houglum A Peggy, (2012), Brunnstrom's Clinical Kinesiology, 6th Edition, JP Bros Medical Publishers, Bangalore.	
Reference Books:		
1	Lippert S Lynn, (2010), Clinical Kinesiology and Anatomy, 5th Ed, FA Davis Company.	



Credits= 04	Research Methodology-I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Research.	
Unit 1	Introduction to Research methodology: Meaning of research, objectives, Motivation, Types of research & research approaches, Research methods vs methodology, Criteria for good research, Research problem: Statement, Statement of purpose and objectives, Necessity of defining the problem, Research design: Meaning, Need, Features for good design, Different types, basic principles.	12
Unit 2	Sampling Design: Criteria for selecting sampling procedure, Implications for sample design, steps in sampling design, characteristics of good sample design, Different types of sample design. Measurement & scaling techniques: Measurement in research- Measurement scales, sources of error in measurement, Technique of developing measurement tools, Meaning of scaling, its classification. Important scaling techniques.	12
Unit 3	Methods of data collection: collection of primary data, collection data through questionnaires & schedules, Difference between questionnaires & schedules.	12
Unit 4	Sampling fundamentals and Processing & analysis of data: need for sampling & some fundamental definitions, Important sampling distributions. Processing operations, problems in processing, Types of analysis, Statistics in research, Measures of central tendency, Dispersion, Asymmetry, relationship.	12
Unit 5	Testing of hypothesis: What is hypothesis? Basic concepts concerning testing of hypothesis, Procedure of hypothesis testing, measuring the power of hypothesis test, Tests of hypothesis, limitations of the tests of hypothesis	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Research and its methods.	
3	To understand the practical implementations of Research.	
Text Books:		
1	Kothari RC, (2019), Research Methodology, 4th Edition, New age international publishers.	
2	Goyal CR, (2013), Research Methodology for Health professionals, 1st Edition, Jaypee Bros Medical Publishers.	
Reference Books:		
1	Haynes O Williams, (2008), Understanding Research, 1st Edition, Pearson Publishers.	



Credits= 02	Sports Nutrition	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the Sports Nutrition.	
Unit 1	Introduction to Sports Nutrition	6
Unit 2	Energy Yielding Nutrients: Utilisation of Carbohydrates, Fats, Proteins in energy production and metabolism.	6
Unit 3	Estimation of Energy requirements: Field Assessment of Physical Activity and Energy Expenditure among Athletes.	6
Unit 4	Body Weight regulations and energy needs.	6
Unit 5	Influence of Dietary Fibers on Body Weight Regulation.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the nutrition in sports	
3	To understand the clinical problems in sports and its management with nutrition.	
Text Books:		
1	Wolinsky Ira, 2008, Sports Nutrition, 1st Edition, CRC Press.	
2	Benardot Dan, 2011, Advanced Sports Nutrition, 2nd Edition, Human Kinetics Publishers	
Reference Books:		
1	Clark Nancy, 2013, Nancy Clark's Sports Nutrition Guidebook, 5th Edition, Human Kinetics Publishers	



Credits= 02	Electrotherapy-II (Laboratory)	0+0+4 Total Lectures: 30
Objective:	The objective of the course is to create awareness and demonstrate among the student about the practical basics of Exercise Therapy.	
1	Learn and Demonstrate the Various Currents.	7
2	Learn and Demonstrate the various equipments.	7
3	Learn and Demonstrate the understanding of pain patterns	8
4	Learn and Demonstrate the functioning of pain equipments	8
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the basic concepts of Electrotherapy.	
3	Demonstration of the practical aspects of various equipments.	



Credits= 02	ENVIRONMENTAL SCIENCE AND DISASTER MANAGEMENT	2+0+0 Total Lectures:
Objective:	To enable students to aware about the Environmental Science for sustainable development and also about the Disaster Management for precautionary as well as rescue purpose.	
1	Introduction -Environment	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
2	Natural Resources	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
3	Ecosystem	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
4	Ecological pyramids	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
5	Pollution	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
6	Waste Disposal	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
7	Green Technology ,Carbon footprint, Global Warming	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
8	Water conservation and Rain water harvesting,	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
9	Disasters	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr
10	Disaster Management	Theory: 1 Hr Practice: 1Hr Case Study: 1 Hr



Credits= 02	Military Science & Civil Defense	2+0+0 Total Lectures:
Objective:	This course intends to enhance the knowledge and skills of the students with the historical aspects of Indian art of warfare.	
1	Importance of Military Science	
2	Concept and Evolution of Military Science	
3	Need of Military Studies today	
4	Armed Forces	
5	Special Forces	
6	Para Military Forces	
7	Geo-Strategy	
8	Maritime Security	
9	Biological Warfare	
10	Armed Forces in Peacekeeping	
11	Armed forces in Disaster Management	
12	Importance of Civil Defence	
13	Role Of Women in Military Science & Defence	
14	Role of Civil defense	
15	Organization	



Fifth Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	V	UF-PT-062	Neurology & Neurosurgery	Major	4+0+0	70	30	100	4
2	06	V	UF-PT-156	Cardio-diseases & Thoracic Surgery	Major	4+0+0	70	30	100	4
3	06	V	UF-PT-157	Manual Therapy	Major	4+0+0	70	30	100	4
4	06	V	UF-PT-158	Health, Fitness & Exercise Prescription	Minor	3+0+0	70	30	100	3
5	06	V	UF-PT-039	Biomechanics & Kinesiology -II	Major	4+0+0	70	30	100	4
6	06	V	UF-PT-159	Research Methodology- II	Minor	3+0+0	70	30	100	3
7	06	V	UF-PT-160	Manual Therapy (Laboratory)	Major	0+0+2	70	30	100	1
		Sub -Total (A)					490	210	700	23



Detailed Syllabus - 5th Semester

Credits= 04	Neurology & Neurosurgery	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Neurology and Neurosurgery.	
Unit 1	Cerebrovascular diseases and Head Injury: Define stroke, TIA, RIA, stroke in evolution, multi infarct dementia and Lacunar infarct. Classification of stroke – Ischemic, hemorrhagic, venous infarcts. Risk factors, causes of stroke, stroke syndrome, investigations, differential diagnosis, medical and surgical management. Head injury	12
Unit 2	Movement and coordination disorders: Definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Parkinson’s disease, Dystonia, Chorea, Ballism, Athedosis, Myoclonus and Wilson’s disease, Congenital ataxia, Friedreich’s ataxia, Ataxia talangiectasia, Metabolic ataxia, Hereditary cerebellar ataxia, Tabes dorsalis and Syphilis.	12
Unit 3	Motor neuron diseases: - Etiology, patho physiology, classification, clinical signs and symptoms, investigations, differential diagnosis, medical management, and complications of following disorders - Amyotrophic lateral sclerosis, Spinal muscular atrophy, Hereditary bulbar palsy, Neuromyotonia and Post-irradiation lumbosacral poly radiculopathy, Multiple sclerosis.	12
Unit 4	Spinal cord disorders: Functions of tracts, definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders: Spinal cord injury, Compression by IVD prolapse, Spinal epidural abscess, Transverse myelitis, Viral myelitis, Syringomyelia, Spina bifida, Sub acute combined degeneration of the cord, Bladder & bowel dysfunction,	12
Unit 5	Brain and spinal pathologies: Tumours-Classification, clinical features, investigations, medical and surgical management. Infections: Aetiology, pathophysiology, classification, clinical signs & symptoms, investigations, differential diagnosis, medical management, surgical management and complications of following disorders – Meningitis, Encephalitis, Poliomyelitis and Post-polio syndrome, Septic encephalopathy, AIDS, Rheumatic fever, Brucellosis, Tetanus, and Pertussis.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to brain and nervous system.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	J.Golwalla F Aspi,(2017), Medicine for students, 25th Edition, Jaypee Brothers Medical Publishers.	
2	Bannister Roger Sir, (1992), Brain and Bannister’s clinical neurology. 7th Edition, Oxford Medical Publishers.	
Reference Books:		
1	O’Sullivan Schmitz, (1994), Physical Rehabilitation Assessment and Treatment, 3rd Edition, FA Davis Company.	



Credits= 04	Cardio-diseases & Thoracic Surgery	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Cardio-diseases & Thoracic Surgery.	
Unit 1	Cardiac conditions: Principle of management of the following conditions: Thrombosis, Embolism, Burger's diseases, Arteriosclerosis, Thrombophlebitis, Phlebitis, Gangrene, Congestive Heart failure, Hypertension, Hypotension, Aneurysm.	12
Unit 2	Cardiac and Thoracic Surgery: Outline indications, Contra-indication, site and type of incision, pre and post operative management and complications of the following-Valvotomy and Valve Replacement, Open Heart Surgery/ Cardiac By pass Surgery, Surgery on Pericardium, Operations in congenital disorders, Heart transplantation, Pacemaker, Coronary Angioplasty, Balloon Angioplasty and Vascular Surgery (Outline surgery of Artery and veins), Lobectomy, Pneumonectomy, Segmentectomy, Pleuro-pneumonectomy, thoracoplasty, Decortication, Tracheostomy.	12
Unit 3	Thoracic Injuries and Tumour: Outline clinical features and management of the following: fracture of ribs, Flail chest, stove in chest, Pneumothorax, Lung Contusion and Laceration and injury to Vessels and Bronchus, carcinoma of lung.	12
Unit 4	Principles and Procedures: Management of Endotracheal tube, Tracheal suction, weaning the patient from ventilator, Extubation and Post-extubation care. Describe the principles of Cardio-pulmonary Resuscitation, Cardiac massage, artificial Respiration, Defibrillators and their uses.	12
Unit 5	Investigations and tests: Exercise tolerance Testing - Cardiac & Pulmonary, Radiographs, PFT, ABG, ECG, Haematological and Biochemical Tests.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to Heart and Thorax.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Cash E Joan, (1987), Cash textbook of Chest, Heart and Vascular Disorders for physiotherapists, 4th Edition, Mosby Publishers.	
2	Hillegass A Ellen, (2001), Essentials of Cardiopulmonary physical therapy, 2nd Edition, WB Saunders Co	
Reference Books:		
1	Smith Mandy, (1992), Cardiovascular Respiratory physiotherapy, 1st Edition, Mosby Publishers.	



Credits= 04	Manual Therapy	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Manual Therapy.	
Unit 1	Mobilisation techniques: Concepts, Principles, Techniques, Effects, Contraindications, Red flags of peripheral joints of the musculoskeletal system.	12
Unit 2	Manipulative therapy: Introduction to various schools of thoughts in manual therapy- Cyriax, Maitland, McKenzie, Mulligan, Kaltenborn	12
Unit 3	Neuro physiological Techniques:- Brief Concepts, Principles, Techniques, Effects of following- NDT, PNF, Vojta therapy, Rood's Sensory motor Approach, Sensory Integration Approach, Brunnstorm movement therapy, Motor relearning program, Contemporary task oriented approach, Muscle re-education approach and Constraint induced movement therapy.	12
Unit 4	Osteopathic manipulative techniques: soft tissue, counter strain, visceral, fascial, lymphatic, High-velocity, low amplitude, articular and combined techniques.	12
Unit 5	Other manual techniques: Palpation techniques, Muscle energy techniques (MET), Myofascial release techniques (MRT), Myofascial trigger points release (MTPR), Facilitated positional release.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Manual Therapy.	
3	To understand the clinically about the manual techniques.	
Text Books:		
1	Nicolas S Alexander, (2012), Atlas of Osteopathic techniques, 2nd Edition, Lippincott Williams and Wilkins.	
2	Gyer Giles, (2017), Osteopathic and Chiropractic techniques for Manual therapists, 1st Edition, Singing Dragon publishers.	
Reference Books:		
1	Davis M Carol, (2018), Complementary therapies in Rehabilitation, 2nd Edition, SLACK Incorporated.	



Credits= 03	Health, Fitness & Exercise Prescription	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Health, Fitness and Exercise Prescription.	
Unit 1	Introduction: Anatomy and Physiology of stretching, types, the stretch reflex, how to stretch, flexibility and its types, elements of a good stretch, exercise order, indications, contraindications, uses of stretch, fitness, types of fitness- physical, physiological, psychological, social, spiritual.	9
Unit 2	Fitness, Diet and Nutrition: Elements of fitness, methods to improve fitness, role of carbohydrates, fats, protein, vitamins, minerals, roughage, water in human nutrition, fitness diet.	9
Unit 3	Exercise prescription and training: Introduction to exercise, components, benefits, types, general guidelines, borg ratings, metabolic equivalents, energy pathways, principles and laws of training, interval training, adaptability, SAID principle, altitude, specificity. .	9
Unit 4	Exercise prescription for special population: Design exercise regime for advanced age, pulmonary disease, diabetes, obesity, maternity, osteoporosis, coronary artery disease, arrhythmia, post myocardial infarction, hypertension.	9
Unit 5	Pilates and Plyometrics: Introduction, Principles, Concepts, Techniques and Mat Programs.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the various techniques of health and fitness.	
3	To understand the clinical applications and its management.	
Text Books:		
1	Nelson G Arnold, (2007), Stretching Anatomy, 3rd edition, Human Kinetics, USA	
2	Kisner Caruly, (2007), Therapeutic Exercise: Foundations & Techniques, 5th Edition, F.A. Davis Company.	
Reference Books:		
1	Isachowitz Real, (2011), Pilates Anatomy, 2nd Edition, Human Kinetics , USA	



Credits= 04	Biomechanics & Kinesiology-II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Biomechanics and Kinesiology.	
Unit 1	Biomechanics of Shoulder complex: Structure and components of the shoulder complex and their integrated function.	12
Unit 2	Biomechanics of Elbow complex: Structure and function of the elbow joint – humero-ulnar and humero-radial articulations, superior and inferior radioulnar joints; mobility and stability of the elbow complex; the effects of immobilisation and injury.	12
Unit 3	Biomechanics of Wrist and Hand complex: Structural components and functions of the wrist complex; structure of the hand complex; prehension; functional position of the the wrist and hand.	12
Unit 4	Biomechanics of Hip and Knee complex: Structure and function of the hip joint; hip joint pathology-arthrosis, fracture, bony abnormalities of the femur. Knee complex: Structure and function of the knee joint: tibiofemoral joint and patellofemoral joint; effects of injury and disease.	12
Unit 5	Biomechanics of Ankle and Foot complex: Structure and function of the ankle joint, subtalar joint, talocalcaneonavicular joint, transverse tarsal joint, tarsometatarsal joints, metatarsophalangeal joints, interphalangeal joints, structure and function of the plantar arches, muscles of the ankle and foot, deviations from normal structure and function – Pes Planus and Pes Cavus	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Biomechanics and Kinesiology.	
3	To understand the clinical aspects of Kinesiology.	
Text Books:		
1	Levangie K Pamela, (2019), Joint Structure and Function – A comprehensive Analysis, 6th Edition, JP Bros Medical Publishers, New Delhi.	
2	Houglum A Peggy, (2012), Brunnstrom's Clinical Kinesiology, 6th Edition, JP Bros Medical Publishers, Bangalore.	
Reference Books:		
1	Lippert S Lynn, (2010), Clinical Kinesiology and Anatomy, 5th Ed, FA Davis Company.	



Credits= 03	Research Methodology-II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Research especially Biostatistics.	
Unit 1	Introduction to Biostatistics: Meaning, definition, characteristics of statistics., Importance of the study of statistics, Branches of statistics, Statistics and health science including physiotherapy, Parameters and Estimates, Descriptive and inferential statistics, Variables and their types, Measurement scales.	9
Unit 2	Tabulation of Data: Basic principles of graphical representation, Types of diagrams – histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve., Normal probability curve.	9
Unit 3	Measure of Central Tendency: Need for measures of central Tendency, Definition and calculation of mean – ungrouped and grouped, Meaning, interpretation and calculation of median ungrouped and grouped., Meaning and calculation of mode, Comparison of the mean, median and mode, Guidelines for the use of various measures of central tendency.	9
Unit 4	Probability and Standard Distributions: Meaning of probability of standard distribution, The binomial distribution, The normal distribution, Divergence from normality – skew ness, kurtosis.	9
Unit 5	Sampling techniques and ANOVA: Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors, Sampling variation and tests of significance. Analysis of variance & covariance: Analysis of variance (ANOVA), what is ANOVA? Basic principle of ANOVA, ANOVA technique, Analysis of Co variance (ANACOVA).	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Research and its methods.	
3	To understand the practical implementations of Research.	
Text Books:		
1	Sunder Rao.P.S.S, (2012), Introduction to Biostatistics and Research Methods, 5th Edition, PHI Learning Pvt. Ltd.	
2	Singh Inderbir, (1990), Elementary Statistics for Medical workers, 1st Edition, Jaypee Bros Medical Publishers.	
Reference Books:		
1	Poli L Denise F. And Hungler, (1994), Nursing Research: Principles and Methods, 5th Edition, Lippincott Williams and Wilkins Publishers.	



Credits= 01	Manual Therapy (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness among the student about the clinical conditions of Dermatology.	
1	Learn and Demonstrate the various Mobilization techniques.	4
2	Learn and Demonstrate the various Manipulative techniques.	4
3	Learn and Demonstrate the various manual techniques.	4
4	Learn and Demonstrate the various osteopathic techniques.	3
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Manual Therapy.	
3	To understand the clinically about the manual techniques.	



Sixth Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VI	UF-PT-105	Gynecology & Obstetrics	Major	4+0+0	70	30	100	4
2	06	VI	UF-PT-081	Bio-Engineering	Major	4+0+0	70	30	100	4
3	06	VI	UF-PT-161	Psychiatry	Minor	3+0+0	70	30	100	3
4	06	VI	UF-PT-162	Ethics & Law (Medical/PT)	Minor	3+0+0	70	30	100	3
5	06	VI	UF-PT-163	Organization & Administration	Minor	2+0+0	70	30	100	2
6	06	VI	UF-PT-164	Human Ergonomics	Minor	2+0+0	70	30	100	2
7	06	VI	UF-PT-165	Therapeutic Massage	Major	3+0+0	70	30	100	3
8	06	VI	UF-PT-166	Therapeutic Massage (Laboratory)	Major	0+0+2	70	30	100	1
9	06	VI	UMC-003	Help Aid	UMC	2+0+0	GRADE BASED			2
10	06	VI	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	VI	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				560	240	800	28



Detailed Syllabus - 6th Semester

Credits= 04	Gynecology & Obstetrics	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Gynecology and Obstructics.	
Unit 1	Anatomy and physiology: of the female reproductive organs. Puberty dynamics, Physiology of menstrual cycle-ovulation cycle, uterine cycle, Cx cycle, duration, amount, Hormonal regulation of menstruation, Hormonal disorders of females-obesity and female hormones. Pregnancy-Diagnosis of pregnancy, Abortion, Physiological changes during pregnancy, Importance of antenatal care exercise, High risk pregnancy, prenatal common complications: investigation and management, Musculoskeletal disorders during pregnancy.	12
Unit 2	Surgical procedures involving child birth: Definition, Indications and Management of the following surgical procedures – pelvic repair, caesarian section, nephrectomy, Hysterosalphyngography, Dilatation and Curettage, Laparoscopy, Colposcopy, Hysterectomy. Carcinoma of female reproductive organs – surgical management in brief Mastectomy – Simple, radical. Hysterectomy.	12
Unit 3	Child Labor: Multiple child birth, Normal labor complications, investigation and management, Child birth, Normal puerperium, lactation and importance of post-natal exercises, Family planning. Medical termination of pregnancy, Infection of female genital tract including sexually transmitted diseases, low backache, Prolapse of uterus and vagina.	12
Unit 4	Principle: of common gynaecological operations – hysterectomy, D&C, D&E, Pop smear, Menopause: Its effect on emotions and musculoskeletal system, Urogenital dysfunction – pre and post-natal condition, Sterility: Pathophysiology, investigations, management, Malnutrition and deficiencies in females.	12
Unit 5	Incontinence – Types, Causes, Assessment and Management.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to Women's health.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Polden M, 1990, Physiotherapy in Obstetrics and Gynaecology, 1st Edition, Butterworth-Heinemann Ltd	
2	Madhuri GB, 2007, Textbook of Physiotherapy for Obstetrics and Gynecological Conditions, 1st Edition, Jaypee Brothers Medical Publishers	
Reference Books:		
1	Konar Hiralal, 2020, DC Dutta's Textbook of Gynaecology, 8th Edition, Jaypee Brothers Medical Publishers	



Credits= 04	Bio-Engineering	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Rehabilitation.	
Unit 1	Philosophy and need of rehabilitation- Principles of physical medicine.	12
Unit 2	Principles of Orthotics and prosthetics:- Lower extremity Orthotics, Spinal Orthotics, Upper Extremity Orthotic, Lower Extremity Prosthetics, Upper Extremity Prosthetics.	12
Unit 3	Principle of Management of Communication: Impairment- Speech production, Communication disorders secondary to brain damage, Evaluating Language, Aphasia and its treatment, Dysarthria and its treatment, Non- aphasic Language disorders.	12
Unit 4	Principles in management of social problem: Social needs of the patient, rehabilitation center environment, the social worker as a member of the rehabilitation team, contribution on social work, community resources, vocational problems and occupational therapy, vocational evaluation, vocational goals for the severely disabled.	12
Unit 5	The Evaluation Process: Principles of prescription writing.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the Principles of Rehabilitation.	
Text Books:		
1	Sunder S, (2019), Textbook of Rehabilitation, 4th Edition, JP brothers Publishers and Distributors (P) Ltd. New Delhi.	
2	Pramanik Rajesh, (2017), Physical medicine and rehabilitation digest 1st Edition, JP brothers Publishers and Distributors (P) Ltd. New Delhi.	
Reference Books:		
1	Nagar Bhushan Satya, (2017), Essentials of community based rehabilitation, 1st Edition, JP brothers Publishers and Distributors (P) Ltd. New Delhi.	



Credits= 03	Psychiatry	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Psychiatry.	
Unit 1	Psychiatric Disorders: Classifications, Causes, Clinical manifestations and treatment methods used in Psychiatry.	9
Unit 2	Modalities: of psychiatric treatment, Psychiatric illness and physiotherapy, Brief description of Etio-pathogenesis, manifestations, and management of psychiatric illnesses -. Anxiety neurosis, Depression, Obsessive compulsive neurosis, Psychosis, Maniac-depressive psychosis, Post-traumatic stress disorder, Psychosomatic reactions: Stress and Health, theories of Stress – Illness.	9
Unit 3	Other Disorders: Etio-pathogenesis, manifestations, and management of psychiatric illness: Drug dependence and alcoholism, Somato form and Dissociate Disorders – conversion reactions, Somatization, Dissociate Amnesia, and Dissociate Fugue, Personality disorders.	9
Unit 4	Child psychiatry: manifestations, and management of childhood disorders-attention deficit syndrome and behavioural disorders.	9
Unit 5	Geriatric psychiatry: Common disorders of old age.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to brain and psychology.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Ahuja Neeraj, 2011, A Short Textbook of Psychiatry, 7th Edition, JP brothers Publishers and Distributors(P)Ltd. New Delhi.	
2	Sadock, 2008, Kaplan & Sadock's Concise Textbook of Clinical Psychiatry, 3rd Edition, Wolters Kluwer India Pvt. Ltd.	
Reference Books:		
1	Harrison.P, 2017, Shorter Oxford Textbook of Psychiatry, 7th Edition, OUP Oxford.	



Credits= 03	Ethics & Law (Medical/PT)	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Medical law and Ethics	
Unit 1	Medical ethics versus medical law: Definition, Goal, Scope. Introduction to Code of conduct, Basic principles of medical ethics – Confidentiality, Malpractice and negligence - Rational and irrational drug therapy, Autonomy and informed consent - Right of patients.	9
Unit 2	Medicolegal aspects: Organ transplantation, Medical diagnosis versus physiotherapy diagnosis.	9
Unit 3	Records: Medico legal aspects of medical records, Medico legal case and types, Records and document related to MLC, ownership of medical records, Confidentiality.	9
Unit 4	Communications: Privilege communication, Release of medical information, Unauthorized disclosure, retention of medical records, other various aspects. Professional Indemnity insurance policy	9
Unit 5	Development of standardised protocol: to avoid near miss or sentinel events, Obtaining an informed consent. Biomedical ethical principles, Code of ethics for physiotherapists, Ethics documents for physiotherapists, Laws affecting physiotherapy practice.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the Medical Law and Ethics.	
3	To understand the ethical aspects of the clinical practice.	
Text Books:		
1	Gupta Rimpi, 2020, CM Francis Medical Ethics, 4th Edition, JP brothers Publishers and Distributors (P)Ltd. New Delhi.	
2	Francis CM, 2017, Medical ethics, 3rd Edition, JP brothers Publishers and Distributors (P)Ltd. New Delhi.	
Reference Books:		
1	Gopalakrishnan Bismi, 2016, Reflections on Medical Law and Ethics in India, 1st Edition, Eastern Law House	



Credits= 02	Organization & Administration	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the Organization and Administration.	
Unit 1	Introduction: Branches of administration, Nature and scope of administration, How to be an effective administrator, Planning hospital administration as part of a balanced health care program. Principles of hospital administration and its applications to physiotherapy.	6
Unit 2	Planning and organization: Planning cycle, Principles of organisational charts, Resource and quality management, Planning change-innovation. Financial issues including budget and income generation. Hospital administration: Organization, Staffing, Information, Communication, Coordination, Cost of services, Monitoring and evaluation.	6
Unit 3	Organization of physiotherapy department: Planning, Space, Manpower, Other basic resources. Organising meetings, committees, and negotiations, Personnel management: Personnel performance appraisal system, Quality care delivery from the staff. National health policy and health care system in India.	6
Unit 4	Quality assurance: Hospital acquired infection, Quality assurance through record review and medical audit. Public relations in hospital and human resource management.	6
Unit 5	Concepts of teaching and learning: Curriculum development, Principles and methods of academic and clinical teaching, Measurement and evaluation, Guidance and counselling, Faculty development program, Administration in clinical setting, Use of A-V aids in teaching, Taxonomy of education.	6

Course Outcome: The student will:

1	Develop an understanding of the subject.
2	Understanding the Organization structure.
3	To learn the Administrative and teaching skills.

Text Books:

1	Francis CM, 2004, Hospital administration, 3rd Edition, JP brothers Publishers and Distributors (P)Ltd. New Delhi.
2	Sakharkar BM, 2009, Principles Of Hospital Administration And Planning, 2nd Edition, JP brothers Publishers and Distributors (P)Ltd. New Delhi.

Reference Books:

1	Zetler J, 2011, Essentials of Law, Ethics, and Professional Issues, 1st Edition, Churchill Livingstone Australia.
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Credits= 02	Fundamentals of Human Factors and Ergonomics	2+0+0 Total Lectures: 30
Objective:	The objective of the course is to create awareness among the student about the Human Ergonomics.	
Unit 1	Ergonomics and Human Factors: History, Introduction to Ergonomic risk, Basic anatomy & muscle physiology as it applies to human abilities and limitations.	6
Unit 2	Physiology of Work: MVC, fatigue, mechanisms of injury, work rest cycles. Introduction to common physical risk measurement tools.	6
Unit 3	Posture and Common Musculoskeletal disorders: Posture, Common disorders occurs commonly due to bad ergonomics, Basic Epidemiology Overview.	6
Unit 4	Environmental factors: that affect risk, Physiology of Night/Shift work: circadian rhythm, extended shifts, Introduction to workflow concepts, Psychosocial factors that affect risk.	6
Unit 5	Cognitive Ergonomics: Introduction to cognitive ergonomics, Root cause analysis of identified risks, Controls and displays.	6
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to occupational Health.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Bernard and Dul Jan, 2008, Ergonomics for Beginners- A Quick Reference for Beginners, 3rd Edition.CRC Press.	
2	Stanton Neville, 2004, Handbook of Human Factors and Ergonomics Methods, 1st Edition, CRC Press.	
Reference Books:		
1	Salvendy G, 2006, Handbook of Human Factors and Ergonomics, 3rd Edition, John Wiley & Sons.	



Credits= 03	Therapeutic Massage	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Therapeutic massage.	
Unit 1	Introduction to Therapeutic Massage: History of massage, manipulations, time of the day for treatment, comfort and support of the patient draping, bolstering and positioning. Therapist's stance, use of body weight, contact and continuity, Techniques, Indications and contra indications.	9
Unit 2	Physiological effects of massage on various systems of body: Effects on excretory system, circulatory system, Muscular system, nervous and metabolic system.	9
Unit 3	Manipulative massage techniques: Define and describe the various manipulation techniques used in massage- Stroking manipulations: Effleurage, Stroking. Pressure manipulations: Kneading, Squeezing, Stationary, Circular Ironing (reinforced Kneading) Finger Kneading, Petrissage (Picking up, wringing, rolling), Frictions. Percussion manipulations- Tapotement, Hacking, Clapping, beating and pounding. Shaking manipulations: Vibration, Shaking.	9
Unit 4	Regional Massage (Upper and Lower limb): Define and describe the technique effects and uses and contra indications of the following manipulations. Massage for upper limb: Scapular region, shoulder joint, upper arm, elbow joint, forearm, wrist joint, hand. Massage for lower limb: Thigh, knee joint, leg, foot (including ankle Joints and toes).	9
Unit 5	Regional Massage (Face and Back): Define and describe the technique effects and uses and contra indications of the following manipulations. Massage for back: Neck and upper back, middle and lower back, gluteal region. Massage for the face.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Therapeutic massage.	
3	To understand the clinically about the massage techniques.	
Text Books:		
1	Sinha AGK, (2010), Principles and Practice of Therapeutic Massage, Research Methodology, 2nd Edition, Jaypee Bros Medical Publishers.	
2	Hollis Margaret, (1987), Massage for Therapists, 2nd Edition, Wiley-Blackwell Publishers.	
Reference Books:		
1	Kisner Carolyn,(2007), Therapeutic Exercise: Foundations & Techniques, 5th Edition, F.A. Davis Company.	



Credits= 01	Therapeutic Massage (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness among the student about the Therapeutic massage.	
1	Learn and demonstrate the various massage techniques.	5
2	Learn and demonstrate the various manipulative massage techniques.	5
3	Learn and demonstrate the various regional massage techniques.	5
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of Therapeutic massage.	
3	To understand the clinically about the massage techniques.	



Credits= 02	Help Aid	2+0+0 Total Lectures:
Objective:	To provide the citizen responder with the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until professional medical help arrives.	
1	Introduction- How it is related with UMC	Theory- 15 Min
2	First aid kit & An emergency health information card	Theory: 45 Min. Practical: 1Hr Practice: 1 Hr
3	Help Aid In Burns	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
4	Help Aid in Poisoning and Insect Bit	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
5	Help Aid In Injuries	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
6	First Aid for Respiratory, diabetic emergencies	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
7	Help Aid In Female First aid for Dehydration	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
8	Help Aid in Cardio-vascular Emergencies	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
9	First Aid for Infants	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
10	Help Aid in geriatric care	Theory: 1 Hr Practical: 1Hr Practice: 1 Hr
11	First Aid for central nervous system emergencies.	Theory: 45 Min. Practical: 1Hr Practice: 1 Hr
12	Implementation of Help-Aid to serve society	Theory- 15 Min



Seventh Semester Course Contents

Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VII	UF-PT-167	Ortho Physiotherapy- I	Major	4+0+0	70	30	100	4
2	06	VII	UF-PT-168	Neuro Physiotherapy- I	Major	4+0+0	70	30	100	4
3	06	VII	UF-PT-169	Chest Physiotherapy- I	Major	3+0+0	70	30	100	3
4	06	VII	UF-PT-170	Sports Physiotherapy- I	Major	3+0+0	70	30	100	3
5	06	VII	UF-PT-171	General & Community Physiotherapy- I	Major	3+0+0	70	30	100	3
6	06	VII	UF-PT-172	Allied Therapy	Major	3+0+0	70	30	100	3
7	06	VII	UF-PT-173	Research Project- I	Major	0+0+6	100	-	100	3
8	06	VII	UF-PT-174	Allied Therapy (Laboratory)	Major	0+0+2	70	30	100	1
			Sub -Total (A)				590	210	800	24



Detailed Syllabus - 7th Semester

Credits= 04	Ortho Physiotherapy - I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Orthopedic physiotherapy.	
Unit 1	PT assessment for Orthopaedic conditions: SOAP format. Documentation of case records, and follow up.	12
Unit 2	Fractures: types, classification, signs and symptoms, complications. Fracture healing, immobilization. PT management in complications, Physiotherapy assessment in fracture cases. Aims of PT management in fracture cases - short and long term goals. Principles of PT management in fractures - Guidelines for fracture treatment during and after the period of immobilisation. PT assessment and management of upper limb, lower limb including pelvis, spinal fractures and dislocations.	12
Unit 3	Degenerative, Infective and Inflammatory conditions: Definition, signs and symptoms, clinical features, path physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for the following conditions – Osteoarthritis - emphasis mainly on knee, hip and hand, Rheumatoid Arthritis, Ankylosing spondylitis, Gout, Perth's disease, Periarthritic shoulder, Osteomyelitis – acute and chronic, Septic arthritis, Pyogenic arthritis, TB spine and major joints - knee and hip.	12
Unit 4	Abnormalities and Deformities: Define, review the postural abnormalities of spinal column, clinical features, deformities, medical and surgical management. Describe PT assessment and management and home program. Deformities: Review in detail the causes, signs and symptoms, radiological features, medical and surgical management. Describe the PT assessment and management of the following conditions : Congenital : CTEV, CDH, Torticollis, pes planus, pes cavus and other common deformities. Acquired: scoliosis, kyphosis, coxa vara, genu varum, valgum and recurvatum.	12
Unit 5	Spinal conditions: Review the causes, signs and symptoms, investigations, radiological features, neurological signs. PT assessment, aims, and management and home program of the following conditions: Cervical spondylosis, Lumbar spondylosis, Spondylolisthesis, Spinal canal stenosis, Spondylolysis, Sacro-iliac joint dysfunction, Sacralisation, Lumbarisation, Intervertebral disc prolapse, Coccydynia, Spina bifida occulta. Effects of spinal traction, types of traction, modes of application, indications for spinal traction, contraindications, precautions, limitations of traction.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to musculoskeletal system.	
3	To understand the clinical conditions and its physiotherapy management.	
Text Books:		
1	Cash E Joan, 1992, Cash's Textbook of Orthopaedics and Rheumatology for Physiotherapists, 1st Edition, Mosby	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Brotzman, 2003, Clinical Orthopaedic Rehabilitation, 2nd Edition, Mosby.	



Credits= 04	Neuro Physiotherapy - I	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Neurological physiotherapy.	
Unit 1	Neurological Assessment: Required materials for examination, Complete Neurological assessment, Special tests, Balance and coordination examination, Gait analysis: Kinetics & Kinematics (Quantitative & Qualitative analysis), Functional Analysis, Assessment tools & Scales – Modified Ash worth scale, Berg balance scale, FIM, Barthel index, Glasgow coma scale, Mini mental state examination, Rancho Los Amigos Scale for Head injury, APGAR score, ASIA scale, Reflex Grading, Differential diagnosis.	12
Unit 2	Paediatric Neurology: Paediatric Examination, Developmental milestones, developmental reflexes, Neuro developmental screening tests, Evaluation & Management, List of Problems & Complications, short & Long Term goals, Management of systemic complications, Management of Mechanical Complications	12
Unit 3	Use of various Neurophysiological approaches & Modalities in Risk babies, Minimum brain damage, Developmental disorders, Cerebral palsy, Autism, Down's Syndrome, Hydrocephalus, Chorea, Spina bifida, and syringomyelia.	12
Unit 4	Evaluation and Management of Brain and Spinal Cord Disorders: Assessment and examination, List of Problems & Complications, short & Long Term goals, Management of systemic complications, Management of Mechanical Complications, Use of various Neurophysiological approaches and Modalities in Cerebro vascular Accident, Meningitis, Encephalitis, Head Injury, Brain Tumours, Perceptual disorders, Amyotrophic lateral sclerosis, and Multiple sclerosis.	12
Unit 5	Applied Yoga in Neurological conditions	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to CNS.	
3	To understand the clinical conditions and its physiotherapy management.	
Text Books:		
1	Downie, 1993, Cash's Textbook Of Neurology For Physiotherapists, 4th Edition, Jaypee Brothers Medical Publishers	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	O'Sullivan Schmitz, (1994), Physical Rehabilitation Assessment and Treatment, 3rd Edition, FA Davis Company.	



Credits= 03	Chest Physiotherapy - I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Chest Physiotherapy.	
Unit 1	Assessment and Tests: Bedside assessment of the patient-Adult and Paediatric, Investigations and tests – Exercise tolerance Testing – Cardiac & Pulmonary, Radiographs, PFT, ABG, ECG, Haematological and Biochemical Tests.	9
Unit 2	Physiotherapy techniques to increase lung volume – controlled mobilization, positioning, breathing exercises, Neurophysiological Facilitation of Respiration, Mechanical aids - Incentive Spirometry, CPAP, IPPB. Physiotherapy techniques to decrease the work of breathing – Measures to optimize the balance between energy supply and demand, positioning, Breathing re-education – Breathing control techniques, mechanical aids – IPPB, CPAP, BiPAP.	9
Unit 3	Physiotherapy techniques to clear secretions: Hydration, Humidification & Nebulisation, Mobilization and Breathing exercises, Postural Drainage, Manual techniques: Percussion, Vibration and Shaking, Rib Springing, ACBT, Autogenic Drainage, Mechanical Aids: PEP, Flutter, IPPB, Facilitation of Cough and Huff, Nasopharyngeal Suctioning, Drug therapy: Drugs to prevent and treat inflammation, Drugs to treat Bronchospasm, Drugs to treat Breathlessness, Drugs to help sputum clearance, Drugs to inhibit coughing, Drugs to improve ventilation, Drugs to reduce pulmonary hypertension, Drug delivery doses, Inhalers and Nebulisers.	9
Unit 4	Neonatal and Paediatric Physiotherapy: Chest physiotherapy for children, The neonatal unit, Modifications of chest physiotherapy for specific neonatal disorders, Emergencies in the neonatal unit.	9
Unit 5	Pulmonary Rehabilitation	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to Chest	
3	To understand the clinical conditions and its Physiotherapy management.	
Text Books:		
1	Cash E Joan, (1987), Cash textbook of Chest, Heart and Vascular Disorders for physiotherapists, 4th Edition, Mosby Publishers.	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Smith Mandy, (1992), Cardiovascular Respiratory physiotherapy, 1st Edition, Mosby Publishers.	



Credits= 03	Sports Physiotherapy - I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Sports Physiotherapy.	
Unit 1	Fundamentals and Principles: Assessment and examination of sports injuries, various Fundamentals and Principles.	9
Unit 2	Fitness and Healing: Physical fitness. Stages of soft tissue healing. Treatment guidelines for soft tissue injuries- Acute, Sub acute and chronic stages. Repair of soft tissues- rupture of muscle, tendon and Ligamentous tears.	9
Unit 3	Recovery and Soft tissue injuries	9
Unit 4	Neck, Face, Head Problems: Definition, signs and symptoms, clinical features, patho physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for Head, Face and Neck injuries and problems arises due to sports.	9
Unit 5	Shoulder Problems: Definition, signs and symptoms, clinical features, patho physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for shoulder injuries.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the injuries related to various sports.	
3	To understand the clinical problems and its physiotherapy management.	
Text Books:		
1	Khan Karim, 2009, Clinical Sports Medicine, 3rd Edition, McGraw-Hill Education	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Zuluaga Marie, 1995, Sports Physiotherapy: Applied Science and Practice, 1st Edition, Churchill Livingstone	



Credits= 03	General & Community Physiotherapy - I	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the General Physiotherapy.	
Unit 1	Introduction to Community Based Rehabilitation: Definition, Historical review, Concept of CBR, Need for CBR, Difference between Institution based and Community based Rehabilitation, Objectives of CBR, Scope of CBR, Members of CBR team, Models of CBR.	9
Unit 2	Management of wound ulcers: Care of ulcers and wounds - Care of surgical scars-U.V.R and other electro therapeutics for healing of wounds, prevention of Hyper granulated Scars Keloids, Electrotherapeutic measures for relief of pain during mobilization of scars tissues.	9
Unit 3	Planning and management: of CBR Programmes, Ownership and Governance, Decentralisation and CBR, Programmed sustainability, Communication and Coordination, Community participation, mobilization and awareness, CBR programme influence on promoting and developing public policies. Disability: Definition of Impairment, Handicap and Disability, Difference between impairment, handicap and disability, Causes of disability, Types of disability, Prevention of disability, Disability in developed countries, Disability in developing countries. Disability Surveys: Demography. Screening: Early detection of disabilities and developmental disorders, Prevention of disabilities- Types and levels	9
Unit 4	Burns management: Role of physiotherapy in the management of burns, post grafted cases-Mobilization and Musculoskeletal restorative exercises following burns.	9
Unit 5	Management of Amputations: following Diabetes, PVD - Prosthesis in amputations of lower limbs following ulcers and gangrenes.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to general health.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Cash E Joan, (1987), Cash textbook of General Medicine and surgical for physiotherapists, 4th Edition, Mosby Publishers.	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	O'Sullivan Schmitz, (1994), Physical Rehabilitation Assessment and Treatment, 3rd Edition, FA Davis Company.	



Credits= 03	Allied Therapy	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Allied Therapies.	
Unit 1	Trigenics and Dry Needling: Definition, Principles, Techniques, Physiological and Therapeutic effects, Indications and Contra indications.	9
Unit 2	Introduction to Blood Flow Restriction (BFR) and Magneto-therapy: Principles of application. Indications and Uses.	9
Unit 3	Acupressure: Definition, Principles, Techniques, Physiological and Therapeutic effects, Indications and Contra indications.	9
Unit 4	Ortho-bionomy: Definition, Principles, Techniques, Physiological and Therapeutic effects, Indications and Contra indications.	9
Unit 5	Cupping Therapy: Definition, Principles, Techniques, Physiological and Therapeutic effects, Indications and Contra indications.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of various allied therapy techniques.	
3	To understand the clinical concepts.	
Text Books:		
1	Overmyer Luann, 2009, Ortho-bionomy, 1st Edition, North Atlantic Books.	
2	Kolster B, 2007, The Acupressure Atlas, Translation Edition, Simon & Schuster.	
Reference Books:		
1	Chaitow Leon, 1984, The Acupuncture Treatment of Pain: Safe and Effective Methods for Using Acupuncture in Pain Relief, 2nd Edition, Healing Arts Press	



Credits= 01	Allied Therapy (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness among the student about the Allied Therapies.	
1	Demonstrate the various Trigenics techniques in common conditions	3
2	Demonstrate the various orthobionomy techniques in common conditions	4
3	Demonstrate the various cupping techniques in common conditions	4
4	Demonstrate the various BFR, dry needling techniques in common conditions	4
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of various allied therapy techniques.	
3	To demonstrate the clinical concepts.	



Eight Semester Course Contents

Eight Semester Course Contents										
Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	VIII	UF-PT-175	Ortho Physiotherapy - II	Major	4+0+0	70	30	100	4
2	06	VIII	UF-PT-176	Neuro Physiotherapy - II	Major	4+0+0	70	30	100	4
3	06	VIII	UF-PT-177	Chest Physiotherapy - II	Major	3+0+0	70	30	100	3
4	06	VIII	UF-PT-178	Sports Physiotherapy - II	Major	3+0+0	70	30	100	3
5	06	VIII	UF-PT-179	General & Community Physiotherapy - II	Major	3+0+0	70	30	100	3
6	06	VIII	UF-PT-180	Fundamentals of Therapeutic & Kinesio Taping	Major	4+0+0	70	30	100	4
7	06	VIII	UF-PT-181	Research Project - II	Major	0+0+6	100	-	100	3
8	06	VIII	UF-PT-182	Fundamentals of Therapeutic & Kinesio Taping (Laboratory)	Major	0+0+2	70	30	100	1
9	06	VIII	UMC-004	Gender Sensitization	UMC	2+0+0	GRADE BASED			2
10	06	VIII	ECA-001	Extracurricular activities	ECA	2+0+0				2
11	06	VIII	UMC-007	Community development activities	CDA	2+0+0				2
			Sub -Total (A)				590	210	800	31



Detailed Syllabus - 8th Semester

Credits= 04	Ortho Physiotherapy - II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Orthopaedic physiotherapy.	
Unit 1	Amputations: Definition, levels, indications, types, PT assessment, aims, management pre and post operatively. Pre and post prosthetic training, checking out prosthesis, complications of amputations and its management.	12
Unit 2	Osteoporosis: causes, predisposing factors, investigations and treatment.	12
Unit 3	Orthopedic surgeries: Pre and post operative PT assessment, goals, precautions and PT management of following surgeries such as : Arthrodesis, Osteotomy, Arthroplasty-partial and total - Excision arthroplasty, excision arthroplasty with implant, inter-positional arthroplasty and total replacement; Tendon transplant, Soft tissue release-tenotomy, myotomy, lengthening; Arthroscopy, Spinal stabilisation, Re-attachment of limbs, External fixators, Synovectomy.	12
Unit 4	Upper Limb Joints: Pre and post operative physiotherapy management of- Shoulder joint : Shoulder instabilities, TOS, RSD, Impingement syndrome, Total shoulder replacement and Hemi replacement. - AC joint injuries, Elbow and forearm: Excision of radial head, Total elbow arthroplasty, Wrist and Hand: Total wrist arthroplasty. Repair of ruptured extensor tendons. Carpal tunnel syndrome. Flexor and extensor tendon lacerations.	12
Unit 5	Lower Limb Joints: Pre and post operative physiotherapy management of- Hip: Joint surgeries - hemi and total hip replacement, Tendonitis and bursitis, Knee: Lateral retinacular release, chondroplasty- Post operative management. Realignment of extensor mechanism. ACL and PCL reconstruction surgeries. Meniscectomy and meniscal repair, Plica syndrome, patellar dysfunction and Hoffa's syndrome. TKR- rehabilitation protocol. Patellar tendon ruptures and Patellectomy, Ankle and foot: Ankle instability. Ligamentous tears.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to musculoskeletal system.	
3	To understand the clinical conditions and its physiotherapy management.	
Text Books:		
1	Cash E Joan, 1992, Cash's Textbook of Orthopaedics and Rheumatology for Physiotherapists, 1st Edition, Mosby	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Brotzman, 2003, Clinical Orthopaedic Rehabilitation, 2nd Edition, Mosby.	



Credits= 04	Neuro Physiotherapy - II	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Neurological physiotherapy.	
Unit 1	Evaluation and Management of Cerebellar, Spinal Cord and Muscle Disorders: in Ataxia, Sensory Ataxia, Parkinson's disease, Muscular dystrophy (DMD), Myasthenia Gravis, Eaton-Lambert Syndrome, Spinal tumours, Spinal cord injury, Transverse myelitis, Bladder & Bowel Dysfunction, Spinal muscular atrophies, Poliomyelitis, Post Polio Syndrome.	12
Unit 2	Evaluation and Management of Peripheral Nerve Injuries and Disorders : in Hereditary motor sensory neuropathy, Guillain-Barre syndrome, Brachial plexus palsy, Thoracic outlet syndrome, Lumbosacral plexus lesions, Phrenic & intercostals nerve lesions, Median nerve palsy, Ulnar nerve palsy, Radial nerve palsy, Musculocutaneous nerve palsy, Anterior & Posterior interosseous nerve palsy, Axillary nerve palsy, Long thoracic nerve palsy, Suprascapular nerve palsy, sciatic nerve palsy, Tibial nerve palsy, Common peroneal nerve palsy, Femoral nerve palsy, Obturator nerve palsy, and Pudental nerve palsy.	12
Unit 3	Assessment and management of Neurological gaits: Quantitative and Qualitative (Kinetic & Kinematics) analysis, List of Problems, short & Long Term goals, Management of following Neurological Gaits - Hemiplegic gait, Parkinson gait, High step gait, Hyperkinetic gait, Hypokinetic gait, Waddling gait, Scissoring gait, Spastic gait, Choreaform Gait, Diplegic Gait, and Myopathic Gait.	12
Unit 4	Pre and Post surgical assessment and treatment following conditions - Spinal disc herniation, Spinal stenosis, Spinal cord trauma, Head trauma, Brain tumors, Tumors of the spine, Spinal cord and peripheral nerves, Cerebral aneurysms, Subarachnoid hemorrhages, epilepsy, Parkinson's disease, Chorea, Hemiballism, Psychiatric disorders, Malformations of the nervous system, Carotid artery stenosis , Arteriovenous malformations, and Spina bifida.	12
Unit 5	Applied Yoga in Neurological conditions	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to CNS.	
3	To understand the clinical conditions and its physiotherapy management.	
Text Books:		
1	Downie, 1993, Cash's Textbook Of Neurology For Physiotherapists, 4th Edition, Jaypee Brothers Medical Publishers	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	O'Sullivan Schmitz, (1994), Physical Rehabilitation Assessment and Treatment, 3rd Edition, FA Davis Company.	



Credits= 03	Chest Physiotherapy - II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Chest Physiotherapy.	
Unit 1	Physiotherapy Management: in Obstructive lung conditions, Restrictive lung conditions, breathlessness.	9
Unit 2	Physiotherapy following Lung surgeries, Respiratory failure – Oxygen Therapy and Mechanical Ventilation.	9
Unit 3	Introduction to ICU: ICU monitoring–Apparatus, Airways and Tubes used in the ICU - Physiotherapy in the ICU – Common conditions in the ICU – Tetanus, Head Injury, Lung Disease, Pulmonary Oedema, Multiple Organ Failure, Neuromuscular Disease, Smoke Inhalation, Poisoning, Aspiration, Near Drowning, ARDS, Shock; Dealing with an Emergency Situation in the ICU.	9
Unit 4	Physiotherapy management following cardiac surgeries.	9
Unit 5	Cardiac Rehabilitation	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to Chest	
3	To understand the clinical conditions and its Physiotherapy management.	
Text Books:		
1	Cash E Joan, (1987), Cash textbook of Chest, Heart and Vascular Disorders for physiotherapists, 4th Edition, Mosby Publishers.	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Smith Mandy, (1992), Cardiovascular Respiratory physiotherapy, 1st Edition, Mosby Publishers.	



Credits= 03	Sports Physiotherapy - II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the Sports Physiotherapy.	
Unit 1	Upper limb injuries: Definition, signs and symptoms, clinical features, patho physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for upper limb muscles, Elbow, Wrist, Hand, Fingers injuries.	9
Unit 2	Thorax and Back Injuries: Definition, signs and symptoms, clinical features, patho physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for Thorax and Back muscles and injuries.	9
Unit 3	Lower limb Injuries: Definition, signs and symptoms, clinical features, patho physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for lower limb muscles, Hip, knee, ankle and foot injuries.	9
Unit 4	Management of Medical Problems: Emergency medicine care and management of athletes with common conditions such as diabetes and epilepsy.	9
Unit 5	Exercise prescription for improving health: in those with common medical conditions: Sport and exercise-associated emergencies: On-site management, Cardiovascular symptoms during exercise, Respiratory symptoms during exercise, Gastrointestinal symptoms during exercise, Common sports-related infections, The tired athlete, Exercise in the heat – major update by Noakes, Exercise at the extremes of cold and altitude.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the injuries related to various sports.	
3	To understand the clinical problems and its physiotherapy management.	
Text Books:		
1	Khan Karim, 2009, Clinical Sports Medicine, 3rd Edition, McGraw-Hill Education	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	Zuluaga Marie, 1995, Sports Physiotherapy: Applied Science and Practice, 1st Edition, Churchill Livingstone	



Credits= 03	General & Community Physiotherapy - II	3+0+0 Total Lectures: 45
Objective:	The objective of the course is to create awareness among the student about the General Physiotherapy.	
Unit 1	Physiotherapy intervention in the management of Medical, Surgical and Radiation Oncology Cases.	9
Unit 2	Geriatrics: Physiology of Aging /degenerative changes-Musculoskeletal /Neuromotor /cardio – respiratory-/Metabolic, Endocrine, Cognitive, Immune systems. Role of Physio Therapy in Hospital based care, Half-way homes, Residential homes, Meals on wheels etc. Home for the aged, Institution based Geriatric Rehabilitation. Few conditions:- Alzheimer’s disease, Dementia, Parkinson’s Disease, Incontinence, Iatrogenic drug reactions, etc. Ethics of Geriatric Rehabilitation.	9
Unit 3	Treatment, Response to exercise and Implications of Physiotherapy in the following disease conditions: Hypertension, Diabetes, Renal Failure and Obesity.	9
Unit 4	Abdominal Surgeries: Physiotherapy Management of Pulmonary Restorative Dysfunction following Surgical procedures on Abdomen and Thorax.	9
Unit 5	Applied Yoga in general conditions.	9
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the diseases related to general health.	
3	To understand the clinical conditions and its management.	
Text Books:		
1	Cash E Joan, (1987), Cash textbook of General Medicine and surgical for physiotherapists, 4th Edition, Mosby Publishers.	
2	Porter, 2013, Tidy's Physiotherapy, 15th Edition, Elsevier Health.	
Reference Books:		
1	O'Sullivan Schmitz, (1994), Physical Rehabilitation Assessment and Treatment, 3rd Edition, FA Davis Company.	



Credits=04	Fundamentals of Therapeutic & Kinesio Taping	4+0+0 Total Lectures: 60
Objective:	The objective of the course is to create awareness among the student about the Therapeutic and Kinesio Taping.	
Unit 1	Anatomy and biomechanics of muscles and assessment for taping.	12
Unit 2	Rigid Taping: Taping in common conditions, Principles, Techniques, methods, Physiological and Therapeutic effects, Indications and Contra indications.	12
Unit 3	On Field Taping: Taping in common conditions, Principles, Techniques, methods, Physiological and Therapeutic effects, Indications and Contra indications.	12
Unit 4	Kinesio Taping: Taping in common conditions, Principles, Techniques, Physiological and Therapeutic effects, Indications and Contra indications.	12
Unit 5	Types: Taping in common conditions, Different types of taping, Principles, Techniques, methods, Physiological and Therapeutic effects, Indications and Contra indications.	12
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of various taping techniques.	
3	To understand the clinical concepts.	
Text Books:		
1	Kase Kenzo, 2003, Illustrated Kinesio Taping, 4th Edition, Ken I Kai Information.	
2	Macdonald Rose, 2010, Pocket book of taping techniques, 1st Edition, Elsevier.	
Reference Books:		
1	Kumbrink, 2015, K-taping in Paediatrics, 1st Edition, Springer.	



Credits= 01	Fundamentals of Therapeutic & Kinesio Taping (Laboratory)	0+0+2 Total Lectures: 15
Objective:	The objective of the course is to create awareness among the student about the Allied Therapies.	
1	Demonstrate the various rigid taping techniques in common conditions.	5
2	Demonstrate the various sports taping techniques in common conditions.	5
3	Demonstrate the various types and Kinesio taping techniques in common conditions.	5
Course Outcome: The student will:		
1	Develop an understanding of the subject.	
2	Understanding the concepts of various taping techniques.	
3	To demonstrate the clinical concepts.	



Credits= 02	Gender Sensitization	2+0+0 Total Lectures:
Objective:	The objective of the course is to create awareness among the student about the Gender sensitization.	
1	Introduction, Meaning , Definition, Nature ,Scope and Evolution of Gender Equality and Gender Sensitization.	Theory- 1Hr
2	Understanding : Femininity and Masculinity ,Feminism and Patriarchy	Theory: 1Hr
3	Constitutional Perspectives of Gender Sensitization	Theory: 1 Hr
4	Legal Perspectives of Gender Sensitization	Theory: 1 Hr
5	PCPNDT & Janani Suraksha Yojana, NHRM, under this scheme, pregnant women are provided with better food, Cash assistance during pregnancy and care during child birth,	Theory: 1 Hr
6	Sukanya Samridhi Yojana-is a saving scheme for the girl child,a sukanya account can be opened any time before girlchild turns 10 years old.	Theory: 1 Hr
7	Balika samridhi Yojana-the purpose of this yojana is to change negative attitude towards girl child among community and family members retaining girl children	Theory: 1 Hr
8	Help the girl child to take part in activities for income generation.	Theory: 1 Hr
9	One Stop Centre scheme-onr stop centres (OSC),shall set up for offering immediate response, emergency help, medical support, legal and psychological assistance to affected women	Theory: 1 Hr
10	Feminist Movements.	Theory: 1 Hr
11	Mahila-E-Haat-A shout out to the entire community of women leaders	Theory: 1 Hr
12	Plan emphasis on empowering women entrepreneurs	Theory: 1 Hr
13	Gender related Emerging Issues and Challenges	Theory: 1 Hr
14	Gender related Challenges	Theory: 1 Hr
15	Aspiring Personalities	Theory: 1 Hr
16	Play and skit on girl Education	Case study: 1Hr
17	Nukkad Natak on girl child on her rights	Case study: 1Hr
18	Interaction with students and villagers on girl child on government policies	Case study: 1Hr
19	Gender Based Violence : Nature, victims, causes, Impact	Case study: 1Hr
20	Scheme for Universalisation of various government and Helplines to provide 24 hrs	Case study: 1Hr
21	Workshop /Seminar on Gender Sensitization	Practice: 1 Hr
22	Rally on awareness regarding BETI BACHAO BETI PADAO	Practice: 1 Hr
23	Gender Sensitization at work and home , at adopted villages	Practice: 1 Hr
24	Prevention and Precautions : Crowded places, buses, trains, transport,	Practice: 1 Hr
25	Safe place, abusive language (feminish words etc.).	Practice: 1 Hr



Sl. No.	NHEQF levels	Semester	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	End Term	CA	Total Marks	Credits
1	06	IX		06 months Compulsory Clinical Rotatory Internship from 100 bedded and above government or private hospital for minimum 1200 hours. After submission of Internship completion certificate BPT degree will be awarded.		-	-	-	-	-