MOHAN BABU UNIVERSITY

Sree Sainath Nagar, Tirupati – 517 102

SCHOOL OF PARAMEDICAL, ALLIED AND HEALTH CARE SCIENCES

Master of Physiotherapy - Neurology

CURRICULUM AND SYLLABUS

(From 2022-23 Admitted Batches)

FULLY FLEXIBLE CHOICE BASED CREDIT SYSTEM (FFCBCS)

MOHAN BABU UNIVERSITY

Vision

To be a globally respected institution with an innovative and entrepreneurial culture that offers transformative education to advance sustainability and societal good.

Mission

- Develop industry-focused professionals with a global perspective.
- Offer academic programs that provide transformative learning experience founded on the spirit of curiosity, innovation, and integrity.
- Create confluence of research, innovation, and ideation to bring about sustainable and socially relevant enterprises.
- Uphold high standards of professional ethics leading to harmonious relationship with environment and society.

SCHOOL OF PARAMEDICAL, ALLIED AND HEALTH CARE SCIENCES

Vision

To be the global center of excellence for paramedical and allied health science education, research, innovation, incubation, consultancy and public service.

Mission

- Inspire the experts of paramedical and allied health sciences of tomorrow to take on the public health challenges of our society.
- Train the students with fundamental knowledge of paramedical and allied health sciences, skills set and positive attitude for creating innovative solutions to serve industry and community through congenial learning environment with contemporary academic programs, state of the art infrastructure facilities and community health programs.
- Facilitate budding paramedical and allied health science experts with the best research-innovation-incubation-start-up ecosystem to realize their fullest potential for sustainable businesses.
- Encourage faculty and staff to excel in their respective domains of expertize and demonstrate the best of their abilities by way of continuing education, research support and consultancy.

Master of Physiotherapy - Neurology

PROGRAM EDUCATIONAL OBJECTIVES

After few years of graduation, the graduates of MPT will:

PEO1. Evolve as an entrepreneur or be employed in physiotherapy practice.

PEO2. Pursued research studies in the field of physiotherapy and allied areas.

PEO3. Continued to learn and to adapt evolving concepts and technologies in the core or allied Physiotherapy.

PROGRAM OUTCOMES

On successful completion of the Program, the graduates of MPT Program will be able to:

PO1. **Knowledge:** Apply evidence-based concepts of physiotherapy and its therapeutic procedures.

PO2. **Analysis:** Analyze, evaluate and diagnose various problems using research-based knowledge and research methods in Physiotherapy practice.

PO3. **Tools & Techniques:** Identify appropriate strategies and rehabilitative approaches to restore normal activities of daily living.

PO4. **Ethics and Society:** Apply the ethical principles of health care practices for sustainable development of society

PO5. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and multidisciplinary settings.

PO6. **Effective Communication:** Communicate effectively on Paramedical & allied Health care activities with the treating patient, community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO7. **Project and Finance Management**: Demonstrate knowledge and understanding the management principles and apply these to one's own work to manage projects in multidisciplinary health care system.

PO8. **Life-long learning:** Adapt to the changes and advancements in technology and engage in independent and lifelong learning

PROGRAM SPECIFIC OUTCOMES

On successful completion of the Program, the graduates of MPT-neurology program will be able to:

PSO1. Analyze and apply appropriate neurology treatment plan with clinical reasoning.

PSO2. Analyze the problem and advice suitable diagnosis for clinical neurological conditions.

PSO3. Demonstrate appropriate scales and tests in neurology treatment plan.

Master of Physiotherapy - Neurology

Basket Wise - Credit Distribution

S. No.	Basket	Credits (Min. - Max.)
1	SCHOOL CORE	48-50
2	PROGRAM CORE	29-32
3	PROGRAM ELECTIVE	20-26
4	UNIVERSITY ELECTIVE	3-6
	TOTAL CREDITS	**Min. 100**

SCHOOL CORE (48-50 Credits)

Course Code	Title of the Course	Lecture	Tutorial	Practical	Project Based Learning	Credits	Pre-requisite
		L	T	P	S	C	
22PT201001	Research Methodology for Biostatistics	4	-	-	-	4	-
22EE201002	Innovation and Intellectual Property Rights	2	-	-	-	2	-
22PT211001	Clinical Training-I	-	-	-	-	6	-
22PT211002	Clinical Training-II	-	-	-	-	6	-
22PT211003	Clinical Training-III	-	-	-	-	8	-
22PT211004	Clinical Training-IV	-	-	-	-	8	Clinical Training-III
22PT211005	Literature Review and Teaching –I	-	-	-	-	1	-
22PT211006	Literature Review and Teaching –II	-	-	-	-	1	Literature Review and Teaching –I
22PT211007	Literature Review and Teaching –III	-	-	-	-	1	Literature Review and Teaching –II
22PT211008	Literature Review and Teaching –IV	-	-	-	-	1	Literature Review and Teaching –III
22AB211001	Community Camp I	-	-	-	-	1	-
22AB211002	Community Camp II	-	-	-	-	1	Community Camp I
22PT211009	Dissertation	-	-	-	-	10	-
22PT201007	Research Methodology and Biostatistics	4	-	-	-	4	-
Mandatory Courses (Min. 4 Credits to be earned, Earned Credits will not be considered for CGPA)							
22MG207601	Project Management	2	-	-	-	2	-
22PT201008	Essentials of Business Etiquettes	2	-	-	-	2	-
22CE201701	Disaster Management	3	-	-	-	3	-
22CM207601	Essentials of Leadership	2	-	-	-	2	-

Note: Clinical Training-I & II - 3 Hours/day; Clinical Training-III & IV -5 Hours/day;

PROGRAM CORE (29-32 Credits)

Course Code	Title of the Course	Lecture	Tutorial	Practical	Project Based Learning	Credits	Pre-requisite
		L	T	P	S	C	
22PT201002	Principles of Physiotherapy Practice	2	-	-	-	2	-
22PT202001	Exercise Physiology and Nutrition	4	-	2	-	5	-
22PT202002	Clinical Electrophysiology	5	-	2	-	6	-
22PT202003	Clinical Biomechanics and Kinesiology	4		2	-	5	-
22PT202004	Advanced Physiotherapeutic-I	3	-	2	-	4	-
22PT202005	Advanced Physiotherapeutic-II	2	-	2	-	3	-
22PT202006	Physiotherapy Diagnosis and Clinical Decision Making	3	-	2	-	4	-
22PT201003	Sports for Fitness, Prosthetics and Orthotics	4	-	-	-	4	-

PROGRAM ELECTIVE (20-26 Credits)

Course Code	Title of the Course	Lecture	Tutorial	Practical	Project Based Learning	Credits	Pre-requisite
		L	T	P	S	C	
22PT202016	Basic Science - Neurology	4	-	2	-	5	-
22PT201013	Clinical Neurology	5	-	-	-	5	-
22PT202019	Neurology Assessment and Evaluation	4	-	2	-	5	Clinical Neurology
22PT202018	Neuro Physiotherapy interventions	4	-	2	-	5	-
22PT201005	Geriatrics Physiotherapy	2	-	-	-	2	-

UNIVERSITY ELECTIVE (3-6 Credits)

Course Code	Title of the Course	Lecture	Tutorial	Practical	Project based Learning	Credits	Pre-requisite
		L	T	P	S	C	
22CB101703	Forensic Science	3	-	-	-	3	-
22EC101701	AI in Healthcare	3	-	-	-	3	-
22SS201701	Value Education	3	-	-	-	3	-
22SS201702	Pedagogy Studies	3	-	-	-	3	-
22LG201701	Personality Development	3	-	-	-	3	-

Note:

1. If any student has chosen a course or equivalent course from the above list in their regular curriculum then, he/she is not eligible to opt the same course/s under University Elective.

2. The student can choose courses from other disciplines offered across the schools of MBU satisfying the pre-requisite other than the above list.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT201001	**RESEARCH METHODOLOGY FOR BIOSTATISTICS**	4	-	-	-	4

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: The course is developed for the students to understand the underlying concepts of research methodology and a systematic approach for carrying out research in the domain of interest. The course is emphasised on developing skills to recognise and reflect the strength and limitation of different types of research; data collection methods, methods of Processing and analysing data. The course also emphasises on interpreting the findings and research articulating skills.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the underlying concepts of research methodology, types of research and the systematic research process and philosophy of research design.

CO2. Demonstrate the philosophy of formulation of research problem, methods of data collection, review of literature and formulation of working hypothesis.

CO3. Demonstrate the philosophy of biostatistics and its relevance to research methodology for carrying research in the domain.

CO4. Analyze various data processing & techniques and their significance in research.

CO5. Develop skills to interpret the findings and research articulating skills along with the ethics of research.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	3	-	-
CO2	3	2	1	-	-	-	-	-	3	-	-
CO3	3	1	-	-	-	-	-	-	3	-	-
CO4	3	3	2	-	-	-	-	-	3	-	-
CO5	3	2	1	-	-	3	-	1	3	-	-
Course Correlation Level	**3**	**2**	**2**	**-**	**-**	**3**	**-**	**1**	**3**	-	-

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

COURSE CONTENT

Module 1: INTRODUCTION TO RESEARCH METHODOLOGY ***(10 Periods)***

Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research and Scientific Method, Research Process, Criteria of Good Research. Research design—Basic Principles, Need of research design, Features of good design, Basic principles of experimental designs,

Module 2: RESEARCH PROBLEM FORMULATION ***(10 Periods)***

Defining and formulating the research problem - Selecting the problem - Necessity of defining the problem - Importance of literature review in defining a problem – Data collection – Primary and secondary sources; Critical literature review – Identifying gap areas from literature review, Development of working hypothesis.

Module 3: INTRODUCTION TO BIOSTATISTICS ***(12 Periods)***

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.

Module 4: STATISTICAL ANALYSIS OF DATA ***(18 periods)***

Need for measures of central Tendency: mean, median and mode, Guidelines for the use of various measures of central tendency, Standard deviation; Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors; Correlation and Regression; Analysis of variance (ANOVA):Basic principle of ANOVA, ANOVA technique; Normal distribution.

Module 5: INTERPRETATION AND REPORT WRITING ***(10 Periods)***

Interpretation: Meaning of interpretation; Techniques of interpretation; Precautions in Interpretation.

Report Writing:

Significance, Different Steps, Layout, Types of reports, Mechanics of Writing a Scientific Research Reports and journals, Precautions in Writing Reports-Plagiarism, Critics in the research.

Total Periods: 60

EXPERIENTIAL LEARNING

1. Conduct a survey based on a hypothesis, analyze the data collected and draw the inferences from the data.
2. Review the literature on the given topic and should identify the scope/gaps in the literature and develop a research hypothesis.
3. Study a case, formulate the hypothesis and identify an appropriate testing technique for the hypothesis.
4. Study an article and submit a report on the inferences and should interpret the findings of the article.

BOOKS:

1. C.R. Kothari, *Research Methodology: Methods and Techniques*, New Age International Publishers, 2nd revised edition, New Delhi, 2004.
2. Mahajan: methods in biostatistics for medical students & research workers. Jaypee Brothers Medical Publishers; 9th edition (28th February 2018)
3. R. Panneerselvam, *Research Methodology*, PHI learning Pvt. Ltd., 2009.
4. Carolyn M. Hicks: Research methodology for clinical therapist. Churchill Livingstone; 5th edition (7th August 2009)

VIDEO LECTURES:

1. https://nptel.ac.in/courses/121106007
2. https://onlinecourses.nptel.ac.in/noc22_ge08/preview
3. https://www.youtube.com/watch?v=VK-rnA3-41c

WEB RESOURCES:

1. https://www.scribbr.com/category/methodology/
2. https://leverageedu.com/blog/research-design/
3. https://prothesiswriter.com/blog/how-to-formulate-research-problem
4. https://www.formpl.us/blog/hypothesis-testing
5. https://www.datapine.com/blog/data-interpretation-methods-benefits-problems/
6. https://leverageedu.com/blog/report-writing/

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211001	**CLINICAL TRAINING-I**	-	-	-	-	6

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides assessing & evaluating the patient and advising appropriate treatment.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Assess the patient illness by proper examination.

CO2. Identify the patient clinical condition and advise appropriate physiotherapy treatment.

CO3. Work individually and in teams following ethical practice.

CO4. Record the clinical studies for future advancements.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	-	-	-	-	-	3	-	-
CO2	3	1	3	-	-	-	-	-	-	3	3
CO3	-	-	-	3	3	-	-	-	-	-	-
CO4	3	1	-	-	3	3	-	2	-	-	-
Course Correlation Mapping	**3**	**2**	**2**	**3**	**3**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Clinical Training-I -**6 Credits**;

Clinical Training-I - 3 Hours/day.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211002	CLINICAL TRAINING-II	-	-	-	-	6

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides assessing & evaluating the patient and advising appropriate treatment.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Assess the patient illness by proper examination.

CO2. Identify the patient clinical condition and advise appropriate physiotherapy treatment.

CO3. Work individually and in teams following ethical practice.

CO4. Record the clinical studies for future advancements.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	-	-	-	-	-	3	-	-
CO2	3	1	3	-	-	-	-	-	-	3	3
CO3	-	-	-	3	3	-	-	-	-	-	-
CO4	3	1	-	-	3	3	-	2	-	-	-
Course Correlation Mapping	**3**	**2**	**2**	**3**	**3**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Clinical Training-II –**6 Credits**.

Clinical Training-II -3 Hours/day.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211003	**CLINICAL TRAINING-III**	-	-	-	-	8

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides assessing & evaluating the patient and advising appropriate treatment.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Assess the patient illness by proper examination.

CO2. Identify the patient clinical condition and advise appropriate physiotherapy treatment.

CO3. Work individually and in teams following ethical practice.

CO4. Record the clinical studies for future advancements.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	-	-	-	-	-	3	-	-
CO2	3	1	3	-	-	-	-	-	-	3	3
CO3	-	-	-	3	3	-	-	-	-	-	-
CO4	3	1	-	-	3	3	-	2	-	-	-
Course Correlation Mapping	**3**	**2**	**2**	**3**	**3**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Clinical Training-III -**8 Credits**;

Clinical Training-III - 5 Hours/day.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211004	**CLINICAL TRAINING-IV**	-	-	-	-	8

Pre-Requisite - 22PT21103- Clinical Training-III

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides assessing & evaluating the patient and advising appropriate treatment.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Assess the patient illness by proper examination.

CO2. Identify the patient clinical condition and advise appropriate physiotherapy treatment.

CO3. Work individually and in teams following ethical practice.

CO4. Record the clinical studies for future advancements.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	1	-	-	-	-	-	3	-	-
CO2	3	1	3	-	-	-	-	-	-	3	3
CO3	-	-	-	3	3	-	-	-	-	-	-
CO4	3	1	-	-	3	3	-	2	-	-	-
Course Correlation Mapping	**3**	**2**	**2**	**3**	**3**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Clinical Training-IV -**8 Credits**;

Clinical Training-IV - 5 Hours/day.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211005	LITERATURE REVIEW AND TEACHING-I	-	-	-	-	1

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with presentations on recent advancements and teaching for under-graduate students.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Formulate problem based on the review program specific literature on a chosen topic.

CO2. Demonstrate teaching capabilities on discipline specific topics at under graduate level.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	-	-	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Applicable to Literature Review and Teaching–I-1 Credit.

Literature Review and Teaching–I- 1 Hour/Week

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211006	LITERATURE REVIEW AND TEACHING-II	-	-	-	-	1

Pre-Requisite - 22PT211005- Literature Review And Teaching-I

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with presentations on recent advancements and teaching for under-graduate students.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO3. Formulate problem based on the review program specific literature on a chosen topic.

CO4. Demonstrate teaching capabilities on discipline specific topics at under graduate level.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	-	-	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Applicable to Literature Review and Teaching–II-1 Credit.

Literature Review and Teaching–II- 1 Hour/Week

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211007	**LITERATURE REVIEW AND TEACHING-III**	-	-	-	-	1

Pre-Requisite - 22PT21106- Literature Review And Teaching-II

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with presentations on recent advancements and teaching for under-graduate students.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Formulate problem based on the review program specific literature on a chosen topic.

CO2. Demonstrate teaching capabilities on discipline specific topics at under graduate level.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	-	-	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Applicable to Literature Review and Teaching–III-1 Credit.

Literature Review and Teaching–III- 1 Hour/Week

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT211008	**LITERATURE REVIEW AND TEACHING-IV**	-	-	-	-	1

Pre-Requisite - 22PT21107- Literature Review And Teaching-III

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with presentations on recent advancements and teaching for under-graduate students.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO5. Formulate problem based on the review program specific literature on a chosen topic.

CO6. Demonstrate teaching capabilities on discipline specific topics at under graduate level.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	-	-	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

Note:

Applicable to Literature Review and Teaching–IV-1 Credit.

Literature Review and Teaching–IV- 1 Hour/Week

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22AB211001	**COMMUNITY CAMP – I**	-	-	-	-	1

Pre-Requisite -
Anti-Requisite -
Co-Requisite -

COURSE DESCRIPTION: This course deals with community physiotherapy includes community-based rehabilitation for disabled, incorporating physical activity and education for people with chronic conditions, women's health, geriatric health. Awareness on physiotherapy in enhancing quality of life.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Understand the importance of physiotherapy at community level in enhancing the quality of life.

CO2. Knowledge on prevention and health promotion of communicable diseases.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	1	1	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

Note: Applicable to Literature Review and Teaching–I & II.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22AB211002	**COMMUNITY CAMP – II**	-	-	-	-	1

Pre-Requisite - 22AB211001- Community Camp – I

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with community physiotherapy includes community-based rehabilitation for disabled, incorporating physical activity and education for people with chronic conditions, women's health, geriatric health. Awareness on physiotherapy in enhancing quality of life.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO3. Understand the importance of physiotherapy at community level in enhancing the quality of life.

CO4. Knowledge on prevention and health promotion of communicable diseases.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	3	-	2	3	3	3
CO2	3	1	1	1	1	3	-	2	3	3	3
Course Correlation Mapping	**3**	**2**	**2**	**1**	**1**	**3**	**-**	**2**	**3**	**3**	**3**

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

Note: Applicable to Literature Review and Teaching–II & III.

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22PT201007	**RESEARCH METHODOLOGY AND BIOSTATISTICS**	4	-	-	-	4

Pre-Requisite -

Anti-Requisite - 22PT201001- Research Methodology For Biostatistics

Co-Requisite -

COURSE DESCRIPTION: The course is developed for the students to understand the underlying concepts of research methodology and a systematic approach for carrying out research in the domain of interest. The course is emphasised on developing skills to recognise and reflect the strength and limitation of different types of research; data collection methods, methods of Processing and analysing data. The course also emphasises on interpreting the findings and research articulating skills.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the underlying concepts of research methodology, types of research and the systematic research process and philosophy of research design.

CO2. Demonstrate the philosophy of formulation of research problem, methods of data collection, review of literature and formulation of working hypothesis.

CO3. Demonstrate the philosophy of biostatistics and its relevance to research methodology for carrying research in the domain.

CO4. Analyze various data processing & techniques and their significance in research.

CO5. Develop skills to interpret the findings and research articulating skills along with the ethics of research.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	3	-	-
CO2	3	2	1	-	-	-	-	-	3	-	-
CO3	3	1	-	-	-	-	-	-	3	-	-
CO4	3	3	2	-	-	-	-	-	3	-	-
CO5	3	2	1	-	-	3	-	1	3	-	-
Course Correlation Level	**3**	**2**	**2**	**-**	**-**	**3**	**-**	**1**	**3**	-	-

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

COURSE CONTENT

Module 1: INTRODUCTION TO RESEARCH METHODOLOGY ***(10 Periods)***

Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research and Scientific Method, Research Process, Criteria of Good Research. Research design—Basic Principles, Need of research design, Features of good design, Basic principles of experimental designs,

Module 2: RESEARCH PROBLEM FORMULATION ***(10 Periods)***

Defining and formulating the research problem - Selecting the problem - Necessity of defining the problem - Importance of literature review in defining a problem – Data collection – Primary and secondary sources; Critical literature review – Identifying gap areas from literature review, Development of working hypothesis.

Module 3: INTRODUCTION TO BIOSTATISTICS ***(12 Periods)***

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.

Module 4: STATISTICAL ANALYSIS OF DATA ***(18 periods)***

Need for measures of central Tendency: mean, median and mode, Guidelines for the use of various measures of central tendency, Standard deviation; Need for sampling - Criteria for good samples, Application of sampling in community, Procedures of sampling and sampling designs errors; Correlation and Regression; Analysis of variance (ANOVA): Basic principle of ANOVA, ANOVA technique; Normal distribution.

Module 5: INTERPRETATION AND REPORT WRITING ***(10 Periods)***

Interpretation: Meaning of interpretation; Techniques of interpretation; Precautions in Interpretation.

Report Writing:

Significance, Different Steps, Layout, Types of reports, Mechanics of Writing a Scientific Research Reports and journals, Precautions in Writing Reports-Plagiarism, Critics in the research.

Total Periods: 60

EXPERIENTIAL LEARNING

5. Conduct a survey based on a hypothesis, analyze the data collected and draw the inferences from the data.
6. Review the literature on the given topic and should identify the scope/gaps in the literature and develop a research hypothesis.
7. Study a case, formulate the hypothesis and identify an appropriate testing technique for the hypothesis.
8. Study an article and submit a report on the inferences and should interpret the findings of the article.

BOOKS:

1. C.R. Kothari, *Research Methodology: Methods and Techniques*, New Age International Publishers, 2nd revised edition, New Delhi, 2004.
2. Mahajan: methods in biostatistics for medical students & research workers. Jaypee Brothers Medical Publishers; 9th edition (28th February 2018)
3.
4. R. Panneerselvam, *Research Methodology*, PHI learning Pvt. Ltd., 2009.
5. Carolyn M. Hicks: Research methodology for clinical therapist. Churchill Livingstone; 5th edition (7th August 2009)

VIDEO LECTURES:

1. https://nptel.ac.in/courses/121106007
2. https://onlinecourses.nptel.ac.in/noc22_ge08/preview
3. https://www.youtube.com/watch?v=VK-rnA3-41c

Web Resources:

1. https://www.scribbr.com/category/methodology/
2. https://leverageedu.com/blog/research-design/
3. https://prothesiswriter.com/blog/how-to-formulate-research-problem
4. https://www.formpl.us/blog/hypothesis-testing
5. https://www.datapine.com/blog/data-interpretation-methods-benefits-problems/
6. https://leverageedu.com/blog/report-writing/

MANDATORY COURSES

Course Code	Course Title	L	T	P	S	C
22MG201401	**PROJECT MANAGEMENT**	2	-	-	-	2

Pre-Requisite -

Anti-Requisite -

Co-Requisite

COURSE DESCRIPTION: To understand the importance of decision-making while implementing any project and interpret and discuss the results of qualitative and quantitative analysis

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1 Understand the basic introduction to project management

CO2 Apply the methods of project identification and selection.

CO3 Understand project allocation methods and evaluation.

CO4 Analyse the techniques for project time, review, and cost

CO5 Understand the factors of risk and quality of a project.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes								
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	2	1	2	1	-	-	-	-	-
CO2	1	1	2	2	-		2		1
CO3	2	2	1	2	1	-	-	1	-
CO4	3	1	2	2	1	-	-	-	-
CO5	2	2	1	2	1	1	-	-	-
Course Correlation Mapping	**2**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**1**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction ***(05 Periods)***

Concept of project management, project definition and key features of projects, project life cycle phases, typical project management issues, basic project activities

Module 2: Project Identification and Selection ***(06 Periods)***

Identification and screening (brainstorming, strength and weakness in the system, environmental opportunities and threats), Project evaluation methods- Payback period, Net present value, Internal rate of return and project evaluation under uncertainty.

Module 3: Project Resource Management ***(07 Periods)***

Scheduling resources, resource allocation methods, project crashing and resource leveling, working of systems, design of systems, project work system design, project execution plan, project procedure manual project control system, planning scheduling and monitoring

Module 4: Time and Cost Management ***(05 Periods)***

Time Management-Network diagram, forward and backward pass, critical path, PERT and CPM, AOA and AON methods, tools for project network, Cost management-earned value method

Module 5: Risk and Quality Management ***(07 Periods)***

Risk identification, types of risk, risk checklist, risk management tactics, risk mitigation and contingency planning, risk register, communication management, Quality assurance and quality control, quality audit, methods of enhancing quality

Total Periods: 30

EXPERIENTIAL LEARNING

1. Refer to any video lecture on project evaluation methods and give a brief seminar using PPT

2. Select any company wherein you will get the details of activities and time and draw the project network diagram and submit a report.

3.

Activity	Predecessor Activity	Normal Time (Weeks)	Crash Time (Weeks)	Normal Cost (Rs.)	Crash Cost (Rs.)
A	-	4	3	8,000	9,000
B	A	5	3	16,000	20,000
C	A	4	3	12,000	13,000
D	B	6	5	34,000	35,000
E	C	6	4	42,000	44,000
F	D	5	4	16,000	16,500
G	E	7	4	66,000	72,000
H	G	4	3	2,000	5,000

Determine a crashing scheme for the above project so that the total project time is reduced by 3 weeks

4. Collect any case study that discusses the process of probability calculation of success of the project and submit a report

RESOURCES

TEXT BOOKS:

1. R.Panneerselvam and P.Senthil Kumar (2013), Project Management, PHI Learning Private Limited.
2. Prasanna Chandra (2014), Projects: Planning, Analysis, Selection, Financing, implementation, and Review.

REFERENCE BOOKS:

1. A Guide to the Project Management Body of Knowledge: (PMBOK Guide) by Project Management Institute, 2013.
2. Gopala Krishnan & Rama Murthy, A Text book of Project Management, McMillan India.
3. S. Choudhary (2004), Project Management, Tata McGraw Hill Publication.

VIDEO LECTURES:

1. https://onlinecourses.nptel.ac.in/noc19_mg30/preview
2. https://archive.nptel.ac.in/courses/110/104/110104073/

Web Resources:

1. https://www.pmi.org/about/learn-about-pmi/what-is-project-management
2. https://www.manage.gov.in/studymaterial/PM.pdf

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22MG207601	**PROJECT MANAGEMENT**	2	-	-	-	2

Pre-Requisite -

Anti-Requisite -

Co-Requisite

COURSE DESCRIPTION: To understand the importance of decision-making while implementing any project and interpret and discuss the results of qualitative and quantitative analysis

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1 Understand the basic introduction to project management

CO2 Apply the methods of project identification and selection.

CO3 Understand project allocation methods and evaluation.

CO4 Analyse the techniques for project time, review, and cost

CO5 Understand the factors of risk and quality of a project.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes								
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	2	1	2	1	-	-	-	-	-
CO2	1	1	2	2	-		2		1
CO3	2	2	1	2	1	-	-	1	-
CO4	3	1	2	2	1	-	-	-	-
CO5	2	2	1	2	1	1	-	-	-
Course Correlation Mapping	**2**	**2**	**2**	**2**	**1**	**1**	**2**	**1**	**1**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction ***(05 Periods)***

Concept of project management, project definition and key features of projects, project life cycle phases, typical project management issues, basic project activities

Module 2: Project Identification and Selection ***(06 Periods)***

Identification and screening (brainstorming, strength and weakness in the system, environmental opportunities and threats), Project evaluation methods- Payback period, Net present value, Internal rate of return and project evaluation under uncertainty.

Module 3: Project Resource Management ***(07 Periods)***

Scheduling resources, resource allocation methods, project crashing and resource leveling, working of systems, design of systems, project work system design, project execution plan, project procedure manual project control system, planning scheduling and monitoring

Module 4: Time and Cost Management ***(05 Periods)***

Time Management-Network diagram, forward and backward pass, critical path, PERT and CPM, AOA and AON methods, tools for project network, Cost management-earned value method

Module 5: Risk and Quality Management ***(07 Periods)***

Risk identification, types of risk, risk checklist, risk management tactics, risk mitigation and contingency planning, risk register, communication management, Quality assurance and quality control, quality audit, methods of enhancing quality

Total Periods: 30

EXPERIENTIAL LEARNING

1. Refer to any video lecture on project evaluation methods and give a brief seminar using PPT

2. Select any company wherein you will get the details of activities and time and draw the project network diagram and submit a report.

3.

Activity	Predecessor Activity	Normal Time (Weeks)	Crash Time (Weeks)	Normal Cost (Rs.)	Crash Cost (Rs.)
A	-	4	3	8,000	9,000
B	A	5	3	16,000	20,000
C	A	4	3	12,000	13,000
D	B	6	5	34,000	35,000
E	C	6	4	42,000	44,000
F	D	5	4	16,000	16,500
G	E	7	4	66,000	72,000
H	G	4	3	2,000	5,000

Determine a crashing scheme for the above project so that the total project time is reduced by 3 weeks

4. Collect any case study that discusses the process of probability calculation of success of the project and submit a report

RESOURCES

TEXT BOOKS:

1. R.Panneerselvam and P.Senthil Kumar (2013), Project Management, PHI Learning Private Limited.
2. Prasanna Chandra (2014), Projects: Planning, Analysis, Selection, Financing, implementation, and Review.

REFERENCE BOOKS:

1. A Guide to the Project Management Body of Knowledge: (PMBOK Guide) by Project Management Institute, 2013.
2. Gopala Krishnan & Rama Murthy, A Text book of Project Management, McMillan India.
3. S. Choudhary (2004), Project Management, Tata McGraw Hill Publication.

VIDEO LECTURES:

1. https://onlinecourses.nptel.ac.in/noc19_mg30/preview
2. https://archive.nptel.ac.in/courses/110/104/110104073/

WEB RESOURCES:

1. https://www.pmi.org/about/learn-about-pmi/what-is-project-management
2. https://www.manage.gov.in/studymaterial/PM.pdf

MANDATORY COURSES

	Course Title	L	T	P	S	C
22PT201008	ESSENTIALS OF BUSINESS ETIQUETTES	2	-	-	-	2

Pre-Requisite

Anti-Requisite

Co-Requisite -

COURSE DESCRIPTION: This course is designed for learners who desire to improve their Business etiquette and professionlaism.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. learn the principles of business etiquettes and professional behavior

CO2. understand the etiquettes for making business correspondence effective

CO3. Develop awareness of dining and multicultural etiquettes

CO4. Demonstrate an understanding of professionalism in terms of workplace behaviors and workplace relationships.

CO5. Understand attitudes and behaviors consistent with standard workplace expectations.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	-	-	-	1	-	-	-	-	-	-
CO2	1	1	2	1	-	1	-	-	-	-	-	-
CO3	2	-	2	-	1	-	-	-	-	2	-	-
CO4	1	2	-	1	-	-	-	-	-	2	-	-
CO5	1	2	1	-	-	-	-	-	-	2	2	-
Course Correlation Mapping	**2**	**2**	**2**	**1**	**1**	**1**	**-**	**-**	-	**2**	**2**	**-**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Business Etiquettes- An Overview ***(06 Periods)***

Significance of Business Etiquettes in 21st Century- Professional Advantage; Need and Importance of Professionalism; Workplace Etiquette: Etiquette for Personal Contact- Personal Appearance, Gestures, Postures, Facial Expressions, Eye-contact, Space distancing

Module 2: Communication Skills ***(06 Periods)***

Understanding Human Communication, Constitutive Processes of Communication, Language as a tool of communication, Barriers to Effective communication, and Strategies to Overcome the Barriers.

Module 3: Teamwork and Leadership Skills ***(06 Periods)***

Concept of Teams; Building effective teams; Concept of Leadership and honing Leadership skills. Personality: Meaning & Definition, Determinants of Personality, Personality Traits, Personality and Organisational Behaviour Motivation: Nature & Importance, Herzberg's Two Factor theory, Maslow's Need Hierarchy theory, Alderfer's ERG theory

Module 4: Interview Skills ***(06 Periods)***

Interview Skills: in-depth perspectives, Interviewer and Interviewee, Before, During and After the Interview, Tips for Success. Meeting Etiquette: Managing a Meeting-Meeting agenda, Minute taking,; Duties of the chairperson and secretary; Effective Meeting Strategies - Preparing for the meeting, Conducting the meeting, Evaluating the meeting

Module 5: Decision-Making and Problem-Solving Skills ***(06 Periods)***

Decision-Making and Problem-Solving Skills: Meaning, Types and Models, Group and Ethical Decision-Making, Problems and Dilemmas in application of these skills. Conflict Management: Conflict - Definition, Nature, Types and Causes; Methods of Conflict Resolution.

Total Periods:30

EXPERIENTIAL LEARNING

LIST OF EXPERIMENTS:

1. Collect the case studies related to successful leaders and their traits.
2. Conduct a mock interview showcasing interview skills.
3. The case studies will be collected as Assignments and the same will be evaluated.

RESOURCES

TEXT BOOKS:

1. Barbara Pachter, Marjorie Brody. Complete Business Etiquette Handbook. Prentice Hall, 2015.
2. Mahanand, Anand. English for Academic and Professional Skills. Delhi: McGraw, 2013. Print.

REFERENCE BOOKS:

1. Pease, Allan and Barbara Pease. The Definitive Book of Body Language. New Delhi: Manjul Publishing House, 2005.
2. Rani, D Sudha, TVS Reddy, D Ravi, and AS Jyotsna. A Workbook on English Grammar and Composition. Delhi: McGraw, 2016.

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=NqlfZOPMqjA
2. http://www.nitttrc.edu.in/nptel/courses/video/109104107/L24.html

Web Resources:

1. http://elibrary.gci.edu.np/bitstream/123456789/685/1/BM-783%20The%20Essential%20Guide%20to%20Business%20Etiquette%20by%20Lillian%20H.%20Chaney%2C%20Jeanette%20S.%20Martin.pdf
2. The Essentials of Business Etiquette: How to Greet, Eat, and Tweet Your Way to Success by Barbara Pachter (Ebook) - Read free for 30 days (everand.com)

MANDATORY COURSES

Course Code	Course Title	L	T	P	S	C
22CE201701	**DISASTER MANAGEMENT**	3	-	-	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion on disaster prone areas in India, repercussions of disasters and hazards, disaster preparedness and management, risk assessment and disaster management.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Analyze the vulnerability of an area to natural and man-made disasters/hazards as per the guidelines to solve complex problems using appropriate techniques ensuring safety, environment and sustainability.

CO2. Analyze the causes and impacts of disasters using appropriate tools and techniques and suggest mitigation measures ensuring safety, environment and sustainability besides communicating effectively in graphical form.

CO3. Suggest the preparedness measures using appropriate tools and techniques and suggest mitigation measures ensuring safety, environment and sustainability.

CO4. Analyze the Risk Assessment using appropriate tools and techniques and suggest mitigation measures ensuring safety, environment and sustainability.

CO5. Design disaster management strategies to solve pre, during and post disaster problems using appropriate tools and techniques following the relevant guidelines and latest developments ensuring safety, environment and sustainability besides communicating effectively in graphical form.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	-	2	2	2	2	2	-	-	-	-
CO2	3	3	-	2	2	2	2	-	-	2	-	-
CO3	3	3	-	2	2	2	2	-	-	-	-	-
CO4	3	3	-	3	2	2	2	-	-	-	-	-
CO5	3	2	3	2	2	2	1	2	-	1	3	2
Course Correlation Mapping	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**-**	**2**	**3**	**2**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module1: DISASTER PRONE AREAS IN INDIA ***(09 Periods)***

Introduction: Disaster: Definition, Factors and Significance; Difference Between Hazard and Disaster; Natural and Manmade Disasters: Difference, Nature, Types And Magnitude. **Disaster Prone Areas:** Study Of Seismic Zones; Areas Prone To Floods And Droughts, Landslides And Avalanches; Areas Prone To Cyclonic And Coastal Hazards With Special Reference To Tsunami; Post-Disaster Diseases And Epidemics.

Module2: REPERCUSSIONS OF DISASTERS AND HAZARDS ***(09 Periods)***

Economic Damage, Loss of Human and Animal Life, Destruction of Ecosystem. Natural Disasters: Earthquakes, Volcanisms, Cyclones, Tsunamis, Floods, Droughts And Famines, Landslides And Avalanches, Man-made disaster: Nuclear Reactor Meltdown, Industrial Accidents, Oil Slicks And Spills, Outbreaks Of Disease And Epidemics, War And Conflicts.

Module3: DISASTER PREPAREDNESS AND MANAGEMENT ***(11 Periods)***

Preparedness: Monitoring Of Phenomena Triggering A Disaster Or Hazard; Evaluation Of Risk: Application Of Remote Sensing, Data From Meteorological And Other Agencies, Media Reports: Governmental And Community Preparedness.

Module4: RISK ASSESSMENT ***(08 Periods)***

Disaster Risk: Concept and Elements, Disaster Risk Reduction, Global and National Disaster Risk Situation. Techniques of Risk Assessment, Global Co-Operation In Risk Assessment And Warning, People's Participation In Risk Assessment. Strategies for Survival.

Module5: DISASTER MANAGEMENT ***(08 Periods)***

Disaster management organization and methodology, Disaster management cycle, Disaster management in India – Typical cases and Cost–benefit analysis, Disaster management programs implemented by NGOs and Government of India, Usage of GIS and Remote sensing techniques in disaster management, Leadership and Coordination in Disaster management, Emerging trends in disaster management.

Total Periods: 45

EXPERIENTIAL LEARNING

1. Perform hazard assessment and vulnerability analysis for any nearby town/city and prepare a detailed report of possible impacts of various disasters on environment, infrastructure and development.
2. Prepare a detailed report on the causes and effects of Tsunami that was occurred in the year 2004. Also discuss various advancements in Tsunami warning systems.
3. Identify the major causes of urban floods in cities like Chennai, Hyderabad & Mumbai. Also list various mitigation strategies to reduce the impact of floods.
4. Prepare a detailed report on how various man-made activities are directly/indirectly related to the occurrence of landslides that occurred in recent days in India.
5. Visit AP State Disaster Response and Fire Services Department and record about various methods used by them in mitigating disasters and their management.

RESOURCES

TEXT BOOKS:

1. Sharma V. K., *Disaster Management, MedTech Publishing, 2nd Edition, 2013*.
2. Anand S. Arya, Anup Karanth, and Ankush Agarwal, *Hazards, Disasters and Your Community: A Primer for Parliamentarians*, GOI–UNDP Disaster Risk Management Programme, Government of India, National Disaster Management Division, Ministry of Home Affairs, New Delhi, Version 1.0, 2005

REFERENCE BOOKS:

1. Donald Hyndman and David Hyndman, *Natural Hazards and Disasters*, Cengage Learning, USA, 5th Edition, 2015.
2. *Disaster Management in India,* A Status Report, Ministry of Home Affairs, Govt. of India, May 2011.
3. Rajendra Kumar Bhandari, *Disaster Education and Management: A Joyride for Students, Teachers, and Disaster Managers*, Springer India, 2014.
4. Singh R. B., *Natural Hazards and Disaster Management*, Rawat Publications, 2009.
5. R. Nishith, Singh AK, *Disaster Management in India: Perspectives, issues and strategies,* New Royal book Company.
6. Sahni, PardeepEt.Al. (Eds.), *Disaster Mitigation Experiences And Reflections*, Prentice Hall of India, New Delhi.
7. Goel S. L. , *Disaster Administration And Management Text And Case Studies*, Deep &Deep Publication Pvt. Ltd., New Delhi

VIDEO LECTURES:

1. https://nptel.ac.in/courses/105104183
2. https://www.digimat.in/nptel/courses/video/124107010/L01.html

WEB RESOURCES:

1. https://egyankosh.ac.in/handle/123456789/25093
2. https://www.egyankosh.ac.in/handle/123456789/25912
3. https://www.nios.ac.in/media/documents/333courseE/12.pdf
4. https://ndmindia.mha.gov.in/images/public-awareness/Primer%20for%20Parliamentarians.pdf

SCHOOL CORE

Course Code	Course Title	L	T	P	S	C
22CM207601	ESSENTIALS OF LEADERSHIP	2	-	-	-	2

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course introduces undergraduate students to fundamental leadership concepts, self-management skills, teamwork, ethical leadership, and professional responsibility. It prepares students to function as effective leaders in healthcare and academic environments.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Understand basic leadership concepts, styles, and theories

CO2. Demonstrate self-awareness, emotional intelligence, and interpersonal skills

CO3. Apply leadership and communication skills in teamwork and problem-solving

CO4. Exhibit ethical, professional, and socially responsible leadership behaviors

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	-	2	2	2	2	2	-	-	-	-
CO2	3	3	-	2	2	2	2	-	-	2	-	-
CO3	3	3	-	2	2	2	2	-	-	-	-	-
CO4	3	3	-	3	2	2	2	-	-	-	-	-
Course Correlation Mapping	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**-**	**2**	**3**	**2**

Correlation Levels: 3: High; 2: Medium; 1: Low

Module 1: FOUNDATIONS OF LEADERSHIP ***(08 Periods)***

Meaning and importance of leadership, Difference between leadership and management, Leadership styles: Autocratic, Democratic, Laissez-faire, Transformational, Qualities of an effective leader, Leadership in healthcare and academics

Module 2: SELF-LEADERSHIP AND EMOTIONAL INTELLIGENCE ***(07 Periods)***

Self-awareness and self-management, Emotional intelligence: components and importance, Motivation and goal setting, Stress management and resilience, Time management for leaders

Module 3: COMMUNICATION AND TEAM LEADERSHIP ***(08 Periods)***

Effective communication skills (verbal, non-verbal, listening), Team dynamics and group behavior, Conflict management and negotiation, Decision-making and problem-solving skills, Leadership roles in multidisciplinary teams

Module 4: ETHICAL AND PROFESSIONAL LEADERSHIP ***(07 Periods)***

Ethics and values in leadership, Professional responsibility and accountability, Social responsibility and community leadership, Leadership challenges in healthcare settings, Developing leadership skills for future careers

Total Periods: 45

EXPERIENTIAL LEARNING

1 Students maintain a reflective journal on personal leadership strengths and weaknesses, Emotional intelligence experiences, Stress management and time management practices

2 Students perform role plays on team leadership scenarios, Conflict resolution in healthcare settings, Decision-making under pressure

3 Analysis of real-life leadership cases in healthcare institutions, Community health programs, Academic leadership situations

4 Small group task such as organizing a health awareness program, Leading a peer-learning session, Planning a simulated clinical team workflow

5 Peer Feedback & Self-Assessment on structured peer evaluation on leadership behavior during activities, Self-assessment using leadership trait checklists

RESOURCES

TEXT BOOKS:

3. Northouse, P. G. *Leadership: Theory and Practice*, Sage Publications
2. Goleman, D. *Emotional Intelligence*, Bantam Books
3. Covey, S. R. *The 7 Habits of Highly Effective People*, Free Press
4. Maxwell, J. C. *Developing the Leader Within You*, HarperCollins

VIDEO LECTURES:

3. https://nptel.ac.in/courses/105104183
4. https://www.digimat.in/nptel/courses/video/124107010/L01.html

WEB RESOURCES:

5. https://egyankosh.ac.in/handle/123456789/25093
6. https://www.egyankosh.ac.in/handle/123456789/25912
7. https://www.nios.ac.in/media/documents/333courseE/12.pdf
8. https://ndmindia.mha.gov.in/images/public-awareness/Primer%20for%20Parliamentarians.pdf

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT201002	**PRINCIPLES OF PHYSIOTHERAPY PRACTICE**	2	-	-	-	2
Pre-Requisite	-					
Anti-Requisite	-					
Co-Requisite	-					

COURSE DESCRIPTION: This course provides a detailed discussion on physiotherapy principles, legal issues, and evidence-based physiotherapy practice.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate ethical, legal, rules and regulations of statutory bodies in physiotherapy practices.

CO2. Demonstrate the managerial skills and opportunities available at various sectors in physiotherapy practice.

CO3. Analyse and interpret various tests and scales in physiotherapy practices

CO4. Apply appropriate tests to assess the condition of the patient and recommend suitable treatment by following ICF standards.

CO5. Demonstrate the teaching, learning and counselling skills in physiotherapy education

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	2	-	-	3	-	-	1	1	3	-	-
CO2	3	-	-	-	-	2	3	-	3	-	-
CO3	3	3	2	-	-	-	-	-	3	-	-
CO4	3	2	3	1	-	1	-	-	3	-	-
CO5	3	-	2	-	-	3	-	-	3	-	-
Course Correlation Mapping	**3**	**3**	**2**	**2**	**-**	**2**	**2**	**1**	**3**	-	-

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction to Physiotherapy Ethics & Legal issues ***(04 Periods)***

Development of Physiotherapy Profession, Legal aspects in Physiotherapy Practice, Ethical issues in Practice of Physiotherapy– Clinical, Research & Academics. Administration, Legislation, Rules & Regulations governing Physiotherapy Practice. Future challenges in Physiotherapy.

Module 2: Standards and scope of Physiotherapy ***(07 Periods)***

Scope of Physiotherapy in Hospital, Community & Industry. Planning, organization, budget, policy procedures and quality assurance. Communication skills, leadership in Physiotherapy. Roles of thephysiotherapist. Standards for practice for physiotherapist and the criteria. Standardized tests and scales used in various types of cases for assessment and interpretation in Physiotherapy practice.

Module 3: Principles of Assessment, Management & Documentation ***(07 Periods)***

History taking, assessment, tests, Patient communication, documentation of findings, treatment organization and planning/execution for intervention. Documentation of rehabilitation assessment and management using International Classification of Functioning Disability and Health(ICF).

Module 4: Concepts of Teaching & Learning in Physiotherapy Education ***(07 Periods)***

Concepts of teaching and learning a) Theories of teaching b) relationship between Teaching and learning c) psychology of education d) Motivational process of learning perception, individual differences, intelligence, personality.

Module 5: Principles of Guidance & Counselling & Methods of Teaching (05 Periods)

Guidance and counseling Principles and concepts, guidance and counseling services of studentsandfaculty. Mentorship in Physiotherapy, Principles and methods of teaching a) Strategies of teaching b)planning of teaching c) Organization d) writing lesson plans e) Audio-visual aids f) Teaching methods.

Total Periods: 30

EXPERIENTIAL LEARNING

1. How to improve the standards and future challenges of physiotherapy practice
2. Case studies of Legal issues in physiotherapy practice
3. Assessment of various tests and scales in physiotherapy
4. Demonstration of various teaching methods in physiotherapy education
5. Leadership versus Mentorship and its role in physiotherapy

RESOURCES

BOOKS:

1. Katherine K.Johnson: Bio ethics in Physical therapy; Cognella, Inc., publisher, 2022.
2. Barbara: Ethics in Rehabilitation; Slack publishers, 2nd Edition, 2012.
3. Nancy Kirsch: Professional issues & Ethics in Physical therapy- A case based approach; McGraw Hill publishers,2nd Edition. 2022.
4. John Swain: The use of Counselling Skills; BH/Elsevier publisher, 1995.
5. Joy: Clinical Reasoning in the health professions; BH/Elsevier publisher,3rd Edition, 2008.
6. Dr.Rajendra Rajput: Essentials of community physiotherapy & Ethics; Medico refresher publications, 2019.
7. Jennifer Green-Wilson: Learning to lead in Physical therapy; Slack Publications, 1st Edition, 2020.

VIDEO LECTURES:

1. https://youtu.be/bf1Wzy1amuw
2. https://youtu.be/iFwZrNAeHks
3. https://youtu.be/zU5_4kc0GjY

WEB RESOURCES:

1. https://www.physio-pedia.com/Ethics
2. https://world.physio/sites/default/files/2022-03/PS-2022-Ethical_responsibilities_principles_Eng.pdf
3. https://collegeofphysiotherapy.com/the-iap-ethical-rules-regulations/
4. https://www.researchgate.net/publication/323934923_Medico-Legal_Practice_and_Physiotherapy_A_Study_in_Mekelle_Ethiopia
5. https://ncert.nic.in/textbook/pdf/lehe108.pdf
6. https://www.physiospot.com/2021/01/25/blended-learning-for-physiotherapy-education/

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202001	**EXERCISE PHYSIOLOGY AND NUTRITION**	4	-	2	-	5

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion on nutrition, energy metabolism & transfer, measurement of energy expenditure & energy conservation in different physical states and body composition & obesity control.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the influence of nutrition & special aids on physical performance.

CO2. Analyse and evaluate energy transfer, energy expenditure in different states of Physical activity.

CO3. Demonstrate the exercises and its effects on various systems of human body.

CO4. Analyse the effects on human body under various environmental conditions and suggesting appropriate training.

CO5. Evaluate the client fitness, clinical condition, geriatric problems and recommending appropriate exercises.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	-	2	1	-	-	-	-	3	-	3
CO2	3	3	2	-	-	-	-	-	3	-	3
CO3	3	1	-	-	-	-	-	-	3	-	3
CO4	3	3	3	-	-	-	-	-	3	-	3
CO5	3	3	3	1	-	-	-	-	3	-	3
Course Correlation Mapping	**3**	**3**	**3**	**1**	**-**	**-**	**-**	**-**	**3**	**-**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction to Nutrition and Metabolism ***(10 Periods)***

Macro nutrients & Micro nutrients, Importance of water in exercise. Fatigue & its Assessment and how to control fatigue. Ergogenic aids/Special aids in sports performance. Carbohydrate, Protein & fat metabolism. Metabolic mill.

Module 2: Energy transfer and Energy expenditure on activities ***(15 Periods)***

Energy transfer in exercise, Measurement of Human energy expenditure. Human energy expenditure during rest and physical activity, Energy expenditure during walking jogging, running and swimming. Individual differences and measurement of energy capacities.

Module 3: Effect of exercise on various systems ***(10 Periods)***

Responses and adaptations of the following systems to exercise and training: the cardio-pulmonary system, the musculoskeletal system, the nervous system, and the endocrine system.

Module 4: Environment influence & Exercise Performance ***(10 Periods)***

Mechanism of thermo regulation, Thermoregulation and environmental stress during exercise. Exercises at medium & High altitude. Sport diving, Microgravity- the cost frontier. Principles of Exercise Training, Enhancement of energy capacity - Training for anaerobic and aerobic power. Muscular strength: Training muscles to become stronger – Strength measurement and resistance training. Structural and functional adaptations to resistance training.

Module 5: Body composition, Assessment, Weight control & Prescription of Exercises **(15 Periods)**

Body composition & Assessment, energy balance and physique, performance and physical activity, obesity and weight control. Exercise, successful aging and disease prevention. Aging and physiologic function, Physical activity, health and longevity, Coronary-heart disease. Clinical exercise prescription for cancer, cardiovascular and pulmonary Rehabilitation

Total Periods: 60

EXPERIENTIAL LEARNING

LIST OF EXPERIMENTS:

1. Influence of Nutrition & Special aids on Exercise Performance.
2. Measurement of Human energy Expenditure, Total daily energy expenditure & advice on Diet.
3. Demonstration of the exercises and its influence on cardio pulmonary system & other systems.
4. Measurement of Aerobic & Anaerobic Capacities.
5. Assessment of body composition & required exercise selection.

RESOURCES

BOOKS:

1. Axen: Illustrated principles of exercise physiology, Pearson publication, 2000.
2. Katch: Exercise physiology, energy nutrition, and humanperformance;Wolters Kluwer Health publication; 9th International Edition, 2022.
3. Shyamal Oley: Essentials of Exercise Physiology; Jaypee Brothers Medical Publishers, 1st Edition, 2018.
4. Swapankumardey: A textbook of sports & exercise physiology; Jaypee Brothers Medical Publishers; 2nd Edition, 2022.
5. Wilmore: Physiology of sport & Exercise. Human Kinetics publishers; 8th Edition, 2021.
6. Stephen R. Bird: Exercise physiology for health professionals; Nelson Thornes publishers Ltd, 1997

VIDEO LECTURES:

1. https://youtu.be/LtO-DzWj0fc
2. https://youtu.be/aq4TQ_0-oz4
3. https://youtu.be/QAiw_QtDaWI
4. https://youtu.be/xUr6tS7QSdM
5. https://youtu.be/xQgYu4p1hvc
6. https://youtu.be/tBCtVoHTMzU

WEB RESOURCES:

1. https://www.pdfdrive.com/
2. https://www.physio-pedia.com/Principles_of_Exercise
3. https://nzihf.ac.nz/personal-training/exercise-principles/

   https://sirc.ca/blog/environmental-factors-in-exercise-and-sports-performance/

   https://www.physio-pedia.com/Body_Composition

   https://www.physio-pedia.com/Exercise_Endocrine_System_Interaction

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202002	**CLINICAL ELECTROPHYSIOLOGY**	5	-	2	-	6

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion about various clinical modalities of electrophysiology.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the Excitable tissue of Nerve and Muscle in clinical electrophysiology

CO2. Analyze and evaluate the nerve conduction studies in clinical physiology.

CO3. Assess the diagnostic modalities in clinical Electrophysiology.

CO4. Evaluate the Clinical application of Electromyography and nerve conduction velocity.

CO5. Trace the pathways of nerve and brain in Adults and Paediatric Practice and role in Clinical Neurophysiology.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	-	-	-	-	-	3	-	-
CO2	3	2	3	-	-	-	-	-	3	-	-
CO3	3	3	3	-	-	-	-	1	3	-	-
CO4	3	3	3	-	-	-	-	2	3	-	-
CO5	3	3	3	-	-	-	-	2	3	-	-
Course Correlation Mapping	**3**	**3**	**3**	**-**	**-**	**-**	**-**	**2**	**3**	-	-

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction to Clinical Electrophysiology ***(10 Periods)***

History of Clinical Neurophysiology; An introduction to electro diagnostic signals and their measurements; Electrical events at synapse; chemical transmission of synaptic activity; Physiology of Pain, Electrical and ionic events in receptors; Electrical activity of the brain.

Introduction to Excitable tissue – Nerve, Excitation and Conduction, Measurement of Electrical Events, Ionic basis of Excitation and Conduction, Physiological basis of Nerve Conduction Tests.
Introduction to Excitable tissue –Muscle: Cardiac Muscle: Electrical Properties Skeletal Muscle: Electrical Phenomena and Ionic Fluxes, Contractile Responses Smooth Muscle**:** Electrical Properties

Module 2: Introduction to Diagnostic Modalities in Clinical Electrophysiology ***(10 Periods)***

Introduction to Diagnostic Modalities: Electro Cardio Gram (ECG) and physiological basis of ECG, Cath lab, TMT; Electromyography (EMG) and physiological basis of EMG, ENMG; Electroencephalogram (EEG) – Physiological basis of EEG; X-ray, CTScan, MRI Scan, Doppler, Ultrasound, fluoroscopy.

Module 3: Nerve Conduction Study to upper and lower limbs ***(25 Periods)***

Principles of Nerve Conduction Study-Compound Motor Action Potential, Sensory Nerve Action Potential, F-Wave, H-Reflex, variables of NCV
Nerve Conduction Study to upper limb: Median nerve, Ulnar nerve, Radial nerve, Brachial plexus, Cervical Radiculopathy
Nerve Conduction Study to lower limb: Lumbar plexus**,** Sacral plexus**,** Lumbo sacral Radiculopathy**,** Anomalous innervations of the extremities**,**
Nerve conduction of nonlimbic nerves**,** Late responses**,** Autonomic nervous system testing

Module 4: Clinical application of Electromyography and nerve conduction Study ***(15 Periods)***

Electromyography (EMG): Introduction &Technique to EMG;
Clinical application of Electromyography and nerve conduction study: Electromyographic findings in neurological disorders, Nerve conduction and EMG studies in polyneuropathies;
Repetitive nerve stimulation (RNS); Single fiber and macro electromyography.

Module 5: Evoked Potential in Adult and Paediatrics **(15 Periods)**

Evoked Potential: Motor Evoked Potential: Sensory Evoked Potential: Visual Evoked Potential (SIGHT), Auditory Evoked Potential (SOUND), Somatosensory Evoked Potential (TOUCH), Cognitive Evoked Potential. Electro diagnosis in Pediatric Practice: Nerve Conduction and Electromyography, Sensory Evoked Potential in Pediatric Practice: Visual Evoked Potential in Pediatric Practice, Auditory Evoked Potential in Pediatric Practice, Somatosensory Evoked Potential in Pediatric Practice
Role of Clinical Neurophysiology in the Prognosis of Neuromuscular
Disorders

Total Periods: 75 Hours

EXPERIMENTAL LEARNING

LIST OF EXPERIMENTS:

1. Demonstrate the Excitable tissue of Nerve and Muscle in clinical electrophysiology
2. Analyze and evaluate the nerve conduction studies in clinical physiology.
3. Assess the diagnostic modalities in clinical Electrophysiology.
4. Evaluate the Clinical application of Electromyography and nerve conduction velocity.
5. How to predict the pathways of nerve and brain in Adults and Paediatric Practice and role in Clinical Neurophysiology.

RESOURCES

BOOKS

1. UK Misra |J Kalita, Clinical Neurophysiology, ELSEVIER, 4th Edition, 2019
2. Jun Kimura, OUP USA, Electro diagnosis in disease of nerve and muscle-, 4th Edition, 2014
3. Wall&Malzak's, Saunders, Text book of Pain,6th Edition, 2013
4. Nelson and Pearson, Clinical Electrotherapy,3rd Edition, 1999

VIDEO LECTURES:

1. https://youtu.be/auogbJFitmI
2. https://youtu.be/rqUlNdIIB50
3. https://youtu.be/xIZQRjkwV9Q
4. https://youtu.be/p38nzOGJZtI

WEB RESOURCES:

1. https://www.sciencedirect.com/journal/clinical-neurophysiology
   https://www.sciencedirect.com/journal/clinical-neurophysiology-practice
2. https://www.ifcn.info/clinical-neurophysiology.asp
3. https://www.elsevier.com/journals/clinical-neurophysiology/1388-2457?generatepdf=true
4. https://journals.physiology.org/journal/jn
5. https://www.frontiersin.org/articles/10.3389/fneur.2021.770791/full
6. https://www.mdpi.com/2077-0383/11/14/4184
7. https://www.sciencedirect.com/journal/clinical-neurophysiology
   https://www.sciencedirect.com/journal/clinical-neurophysiology-practice

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202003	**CLINICAL BIOMECHANICS AND KINESIOLOGY**	4		2	-	5

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion about the knowledge of human joint Structure and the principles of biomechanics in clinical application.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the BiomechanicalApplicationstoJointStructureandFunction.

CO2. Analyze and Evaluate the Axial Skeletal, Upper and Lower ExtremityJointComplexes.

CO3. Trace out the DeterminantsofGait and Ergonomic Approach to lifting and handling.

CO4. Work independently and in teams to solve problems with effective communications.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	1	2	-	-	2	-	1	3	1	1
CO2	3	2	3	-	-	2	-	1	3	2	1
CO3	3	3	3	-	-	2	-	1	3	3	1
CO4	3	2	2	-	-	2	-	1	1	1	1
Course Correlation Level	**3**	**3**	**3**	**-**	**-**	**2**	**-**	**2**	**3**	**3**	**1**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: FOUNDATIONAL CONCEPTS OF JOINT STRUCTURE AND FUNCTION ***(10 Periods)***

Biomechanical Applications to Joint Structure and Function:-General Kinematics and Kinetics of Joint Structure and Function.

Joint Structure and Function: General Changes with Disease,Injury,Immobilization,Exercise,and Overuse.

Muscle Structure and Function:-Effects of Immobilization,Injury,and Aging, Kinematics and Kinetics of Posture and Gait.

Module 2: AXIAL SKELETAL JOINT COMPLEXES ***(08 Periods)***

Temporomandibular Joint:-Structure and Function of the Temporomandibular Joint, Age-Related Changes in the Temporomandibular Joint and Dysfunctions.

Vertebral Column:- Introduction to General Structure and Function of the Vertebral Column, Regional Structure and Functions of the Cervical Region, the Thoracic Region, the Lumbar Region and the Sacral Region, Muscles of the Vertebral Column-The Craniometrical / Upper Thoracic Regions, Lower Thoracic / Lumbopelvic Regions, Muscles of the Pelvic Floor, Effects of Aging.

Thorax and Chest Wall:-Introduction to General Structure and Function of Rib Cage, Muscles Associated With the Rib Cage, Coordination and Integration of Ventilatory Motions, Developmental Aspects of Structure and Function- Differences Associated with the Neonate and the Elderly, Pathological Changes in Structure and Function of Chronic Obstructive Pulmonary Disease.

Module 3: UPPER EXTREMITY JOINT COMPLEXES ***(15Periods)***

Shoulder complex:-Introduction: Components of the shoulder complex- Sternoclavicular joint, Acromioclavicular joint, Scapulothoracic joint, Glenohumeral joint, Integrated function of the shoulder Complex-Scapulothoracic and Glenohumeral contributions, Sternoclavicular and acromioclavicular contributions, Structural Dysfunction, Muscles Of Elevation, Muscles of depression.

Elbow Complex:-Structure and Functions of Humeroulnar and Humeroradial joint; Structure of Superior and Inferior Radioulnar Joints; Mobility and Stability of Elbow Complex- Functional Activities, Relationship to the Hand and Wrist; Effects of Age and Injury.

Wrist and Hand Complex:- Structure and Functions of Radiocarpal and Midcarpal Joint of the Wrist Complex. The Hand Complex: Carpometacarpal, Metacarpophalangeal and Interphalangeal Joints of the Fingers, Extrinsic Finger Flexors and Extensors, Extensor Mechanism, Intrinsic Finger Musculature, Structure of the Thumb, Thumb Musculature;

Prehension: Power Grip, Precision Handling; Functional Position of the Wrist and Hand.

Module 4: LOWER EXTREMITY JOINT COMPLEXES ***(15 Periods)***

Hip Complex- Structure and Function of the Hip Joint, Hip Joint Forces, and Muscle Function in Stance-Bilateral Stance, Unilateral Stance, Reduction of Muscle Forces in Unilateral Stance, Hip Joint Pathology: Arthrosis, Fracture, Bony Abnormalities of the Femur.

Knee Complex: Tibiofemoral Joint: Structure and Function of the Tibiofemoral Joint- Joint Kinematics, Muscles, Stabilizers of the Knee; Patellofemoral Joint: Patellofemoral Articular Surfaces and Joint Congruence, Motions of the Patella, Patellofemoral Joint Stress, Frontal Plane Patellofemoral Joint Stability, Weight-Bearing vs. Non–Weight-Bearing Exercises with Patellofemoral Pain; Effects of Injury and Disease of Tibiofemoral and Patellofemoral Joint.

Ankle and Foot Complex: Introduction, Definitions of Motions, Ankle Joint-Ankle Joint Structure and Function; Subtalar Joint Structure and Function; Transverse Tarsal Joint Structure and Function; Tarsometatarsal Joint Structure and Function; Metatarsophalangeal Joint Structure and Function; Interphalangeal Joints- Plantar Arches- Structure and Function of the Arches, Muscular Contribution to the Arches, Muscles of the Ankle and Foot- Extrinsic Musculature, Intrinsic Musculature, Deviations from Normal Structure and Function.

Module 5: INTEGRATED FUNCTIONS OF POSTURE AND GAIT (12 Periods)

Posture: Introduction to Static and Dynamic Postures, Postural Control, Major Goals and Basic Elements of Control; Optimal Posture: Analysis of Standing Posture, Sitting Postures and Lying Postures; Effects of Age,Pregnancy,Occupation,and Recreation on Posture; Clinical kinesiology of posture.
Gait: Introduction to General Features of Gait; Phases of the Gait Cycle, Determinants of Gait; Kinematics and Kinetics of the Trunk and Upper Extremities in Gait. Stair and Running Gaits; Effects of Age,Gender,Assistive Devices, and Orthoses; Abnormal Gait- Structural Impairment, Functional Impairment;
Ergonomic Approach to lifting and handling, work space and Environment.

Total Periods: 60

EXPERIENTIAL LEARNING

List of Experiments

1. How to design for ease and Efficiency in Ergonomics.
2. Demonstrate the BiomechanicalApplicationstoJointStructureandFunction.
3. Analyze and evaluate the Axial Skeletal, Upper and Lower ExtremityJointComplexes.
4. Assess the Integrated Function of Posture and Gait.
5. Evaluate the activities of daily living ADL – like sitting to standing, throwing, lifting.
6. Trace out the DeterminantsofGait and Ergonomic Approach to lifting and handling.

RESOURCES:

BOOKS:

1. Pamela K. Levangie & Cynthia C, Joint Structure &Function, Jaypee Brothers Medical Publishers –Sixth edition, 2019
2. Jim Richards, Clinical Biomechanics- Elsevier,2nd edition, 2022.
3. Peggy A. Houglum, Dolores B. Bertoti,Brunnstrom'sClinical Kinesiology, F.A.DAVIS COLLECTION 6th ed./revised 2012.
4. Pavan Kumar G & Ilona Gracie De Souza, Textbook of Biomechanics & Kinesiology- Jaypee Brothers,1st Edition,2022.
5. Katrin Kroemer Elbert, Henrike B.Kroemer, Anne D. Kroemer Hoffman, Textbook of Ergonomics. ISBN, Third Edition, 2018.
6. Gavriel Salvendy Waldemar Karwowski, Handbook of Human Factors and Ergonomics, ISBN First Edition,2021

VIDEO LECTURES:

1. https://youtu.be/auogbJFitmI
2. https://youtu.be/8IZ_w6hhpQ
3. https://youtu.be/p2e5VBcGbcQ
4. https://youtu.be/UPg-3i4EnXc
5. https://youtu.be/TqJW2P7eehQ

WEB RESOURCES:

1. https://www.sciencedirect.com/journal/clinical-biomechanics
2. https://fadavispt.mhmedical.com/content.aspx?bookid=2148&sectionid=162869570
3. http://www.lavoisier.eu/books/medicine/clinical-kinesiology-andbiomechanics/description_4849221
4. https://journals.indexcopernicus.com/issues/21690/72183
5. https://www.letpub.com/index.php?journalid=1797&page=journalapp&view=detail
6. https://journals.physiology.org/journal/jn
7. https://www.frontiersin.org/articles/10.3389/fneur.2021.770791/full
8. https://www.mdpi.com/2077-0383/11/14/4184

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202004	**ADVANCED PHYSIOTHERAPEUTIC-I**	3	-	2	-	4

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion about the knowledge of electrotherapy modalities, their configurations, Methods of application, Clinical decision making with the evidence based practice, and updating the recent advances in the field of Electrotherapy.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Apply superficial heat and cold modalities and its recent advances in Physiotherapy treatment.

CO2. Understand the low-frequency and medium-frequency currents, their physiological and therapeutic effects, and theories of pain.

CO3. Understand the High-frequency currents, their physiological and therapeutic effects, and recent advances in High-frequency currents.

CO4. Apply High-frequency currents with proper decision-making based on the evidence.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	2	-	1	3	-	-
CO2	3	2	1	-	-	2	-	1	3	-	-
CO3	3	1	-	-	-	2	-	1	3	-	-
CO4	3	3	2	-	-	2	-	1	3	-	-
Course Correlation Level	**3**	**2**	**2**	**-**	**-**	**2**	**-**	**1**	**3**	-	-

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module1: MOIST HEAT THERAPY SUPERFICIAL HEATING AND COLD MODALITIES. ***(10 Periods)***

Cryotherapy application effects and techniques, aquatic therapy whirlpool therapy, and clinical assessment and case study. Hydrotherapy – physical properties of water effects of hydrotherapy, uses, adverse effects, application techniques, and benefits clinical case study. Moist heat therapy– effects of heat, uses of heat, advanced application techniques, clinical case study.Fluido therapy-Fluid therapy is a high intensity, heat modality, and effects of the fluid therapy, paraffin bath therapy, positive effects on muscle strength, and functional status, contrast bath and Hot packs

Module2: MODALITIES OF LOW FREQUENCY CURRENT AND MEDIUM FREQUENCY CURRENT EVIDENCE BASED PRACTICE PAIN **(12 Periods)**

Inferential therapy- medium frequency and low frequency current, and recent advance treatment. Faraday current, Galvanic current Russian currents, Di dynamic currents , sinusoidal currents, Rheo- based type Current , Transcutaneous Electrical Nerve Stimulation (TENS), Electrical stimulation, Functional electrical simulations, neuromuscular electrical simulation, high voltage pulsed galvanic stimulation, micro-current therapy, Pain – Mechanism of Pain, types of pain , theories of pain, pain gate control theory, Behavior of pain, modulation of pain and Clinical case study and electro diagnostic test SD curve ,FG test,H-wave test.

Module3: MODALITIES OF HIGH FREQUENCY CURRENT ***(13 Periods)***

SWD: short wave Frequency and wavelength of SWD (pulsed and continuous). Micro Wave Diathermy, Wave length and frequency and advanced application methods MWD pulsed and continuous.Iontophoresis advance clinical application methods. IRR techniques and Methods of application, infra-red radiation wavelength & parameters. UVR ultraviolet radiation generators: Kromayer lamp, Fluorescent tube, continuous passive motion CPM.shockwavetherapy,combinationtherapy,magneto therapy, Muscle strengthening and prevention of atrophy, muscle spasm, pelvic floor dysfunction.

Module4: MODALITIES OF HIGH FREQUENCY CURRENT AND MECHANICAL MODALITES ***(10 Periods)***

Ultrasound: introduction, effects, clinical applications, adverse effects, application techniques clinical case studies, Treatment Dosage parameters: Continuous& Pulsed mode, Intensity, US Field. Extracorporeal short wave therapy, LASER: Define LASER, Introduction to electromagnetic radiation, and laser effects Types of LASERS. Principles of Production, Methods of application technique, clinical case study. Traction– effects of spinal traction, adverse effects, application techniques, clinical case study. Compression – effects of external compression adverse effects, application techniques clinical case study and electronic traction, Safety considerations in electrotherapy, central nervous system lesions, peripheral nervous system lesions, and obesity.

TOTAL : 45 Periods

EXPERIENTIAL LEARNING

List of Experiments

1. Demonstrate the techniques for patient evaluation, receiving the patient, position of the patient pain, and treatment for electrotherapy.
2. Study a case technique of treatment and clinical application of superficial heat and cold therapy modalities
3. Understand the methods of low frequency and medium frequency current modalities electrical stimulation and functional stimulation evidencebased pain electro diagnostic test
4. Evaluate the clinical application of various high frequency current, evidence based clinical application.
5. Trace out the various modalities in high-frequency current and mechanical agents
6. Assessment of clinical conditions and the techniques used for the treatment and diagnostic modalities in electro therapy

RESOURCES

BOOKS

1. Low and Reed, Electrotherapy Explained, Elsevier India 4th edition,2008
2. Forster and Palastanga Clayton's Electrotherapy, , Bailliere Tindall 8th edition,2005
3. Mitra ,Handbook of Practical Electrotherapy,JAYPEE BROTHERS,1st edition,2006
4. JAGMOHAN SINGH,Textbook of Electrotherapy, Jaypee Brothers Medical Publishers,3rd edition,2017
5. Virendra Kr. Khokhar,Electrotherapy For Physiotherapists , Top Publishing 4th edition,2015
6. S. KITCHEN, Electrotherapy – Evidenced based Practice, Scribd,11thedition,200
7. Cameron: Physical agents in Rehabilitation: An Evidence Based approach, Elsevier Health science- 2022.

VIDEO LECTURES:

1. https://youtu.be/a54Sks3apT4?si=kLXEuniozqIJxM-6
2. https://youtu.be/fhNV7uu1lec?si=0TP8dwE71gnhztIH
3. https://youtu.be/9VFt2VtpbQc?si=FivHlOgGhwkI7P0-
4. https://www.youtube.com/watch?v=w_uSsFeA_lc
5. https://www.youtube.com/watch?v=EjJ5nX_jM-w

WEB RESOURCES:

1. Jacopo martellucci electrical stimulations for pelvic floor disorders, jan 1st 2014 https://link.springer.com/chapter/10.1007/978-3-319-06947-0_4
2. Chueh-Hung Wu, in Braddom's Rehabilitation Care: A Clinical Handbook, 2018 https://www.sciencedirect.com/topics/medicine-and-dentistry/electrotherapy
3. Interferential Therapy INTERFERENTIAL THERAPY (IFT) INTRODUCTION The basic principle of Interferential Therapy (IFT) is to utilize the significant physiological effects of low frequency (<250pps) electrical stimulation of nerves without the associated painful and somewhat unpleasant side effects
4. Therapeutic Ultrasound – Physiopedia
5. Lambert I, Tebbs SE, Hill D, Moss HA, Davies AJ, Elliott TSJ (2000). Interferential therapy machines as possible vehicles for cross-infection. J Hosp Infect. 44(1), 59-64
6. Val Robertson, Alex Ward, John Low John Low Ann Reed, Electrotherapy Explained: Principles and Practice. 4th Edition. Butterworth-Heinemann,2006
7. Tim Watson, Electrotherapy: evidence-based practice. Physiotherapy essentials. 12th edition, Churchill Livingstone,2008
8. Saunders HD. Lumbar traction*. J Ortho Sports Phys Ther. 1979; 1(1): 36-45. (LEVEL 1A)
9. Pellecchia GL. Lumbar traction: a review of the literature. Journal of Orthopedic& Sports Physical Therapy. 1994 Nov;20(5):262-7. (LEVEL 1A)
10. He M.L., Xiao Z.M., Lei M., Li TS., Wu H., Liao J. Continuous passive motion for preventing venous thromboembolism after total knee arthroplasty. Cochrane Database Syst Rev. 2014 Jul 29;(7):CD008207.
11. Gil-González S., Barja-Rodríguez R., López-Pujol A., Berjaoui H., Fernández-Bengoa J., Erquicia J., Leal-Blanquet J., Pelfort X. Continuous passive motion not affect the knee motion and the surgical wound aspect after total knee arthroplasty. J Orthop Surg Res. 2022 Jan 15;17(1):25.
12. Painhealth Pain Types https://painhealth.csse.uwa.edu.au/pain-module/pain-types/ (last accessed 20.5.2020)

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202005	ADVANCED PHYSIOTHERAPEUTIC-II	2	-	2	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course gives an overview of numerous therapeutic exercises and approaches, as well as a brief outline of different manual therapy techniques to use in treating various medical problems based on evidence.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the different therapeutic exercises.

CO2. Schedule the exercises for Musculoskeletal Disorders.

CO3. Plan the exercises for Cardio-Pulmonary Disorders.

CO4. Understand the exercises in special medical conditions.

CO5. Demonstrate various manual therapy techniques.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	1	-	1	-	1	3	-	3
CO2	3	2	3	-	-	1	-	2	3	-	3
CO3	3	2	3	-	-	1	-	2	-	-	3
CO4	3	2	3	-	-	1	-	2	-	-	3
CO5	3	1	3	1	-	1	-	2	3	-	3
Course Correlation Mapping	**3**	**2**	**3**	**1**	**-**	**1**	**-**	**2**	**2**	**-**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: General Concepts Of Therapeutic Exercises ***(05 Periods)***

Movements, Strength Training, Principles of Aerobic Exercises, Stretching, Hydrotherapy, Mobilizations and Proprioceptive Neuro Muscular Facilitation.

Module 2: Application Of Therapeutic Exercise in Musculoskeletal Disorders ***(05 Periods)***

Soft Tissue Injuries, Fractures, Post Surgical Conditions, and an outline of the conditions of the Shoulder Joint, Elbow Joint, Wrist Joint, Hip Joint, Knee Joint, Ankle Joint, and Spinal joint.

Module 3: Application Of Therapeutic Exercises in Cardio-Pulmonary Disorders ***(05 Periods)***

Vascular Disorders of Extremities – Arterial Disorders, Venous Disorders, Lymphatic Disorders and Exercises for the Management of Lymphoedema,Effects of exercise on cardiac function. Breathing Exercises and Ventilatory Training, Chest Mobilization Exercises, Coughing, Postural Drainage, and Management of Chronic Obstructive Pulmonary Disease and Restrictive Lung Disease,Cardiopulmonary medications and their effect on activity performance.

Module 4: Special Areas Of Therapeutic Exercises ***(05 Periods)***

Principles of Exercise For Obstetric Patients, Plastic Surgery, Psychiatric Conditions, Spasticity and Flaccidity, Peripheral Neural Mobilization,Theories of Motor Control and Motor Learning. Exercises to improve Bladder control, Kegels Exercise, Brandt-Daroff Exercises. Concepts of Bobath approach, Brunnstorms approach.

Module 5: Manual Therapy Techniques **(10 Periods)**

Concepts of Mc Kenzie technique, Mulligan technique, Muscle energy technique, Taping Technique, Positional release technique, Cyriax Friction Massage, and Feldenkrais method.

Total Periods: 30

EXPERIENTIAL LEARNING

List of Experiments:

1. Peripheral Joints, Chest wall, and Spinal Joint Mobilization.
2. Stretching Exercises.
3. Breathing Exercises.
4. Manual Therapy Techniques.
5. Progressive Resistance Exercises.
6. Passive Movements
7. Postural Drainage

RESOURCES

BOOKS:

1. Carolyn Kisner: Therapeutic Exercise Foundations and Techniques, F A Davis Co,3rd Edition, 2022.
2. Carrie M Hall: Therapeutic Exercise:Moving Towards Function; Lippincott Williams and Wilkins; 4th International Edition, 2017.
3. Robin Mc Kenzie:The Lumbar spine Mechanical Diagnosis And Therapy; Spinal Publications Newzealand,Ltd, 2nd Edition, 2003.
4. Leon Chaitow: Muscle Energy Techniques; Elsevier; 4th Edition, 2019.
5. Wayne Hing: The Mulligan concept of manual therapy. Churchill Livingstone; 1st Edition, 2014.
6. Rose Mac Donald: Taping Techniques- Principles and Practice; Butterworth-Heinemann, 2nd Edition,2004.
7. Chris Kresge: The Feldenkrais Method- Learning Through Movement; Handspring Publishing Ltd;1st Edition,2021.
8. John Sharkey: The concise book of Dry Needling: A Practitioners Guide to Myofascial Trigger Point; North Atlantic Books;1st Edition,2017.
9. Susan B O Sullivan: Physical Rehabilitation; F A Davis; 7th Edition,2019.
10. Michel Probst: Physiotherapy in Mental Health and Psychiatry: A scientific and Clinical based Approach; Elsevier;1st Edition,2017.

VIDEO LECTURES:

1. https://youtu.be/noThZxaeJwY
2. https://youtu.be/pI4T1OBWspI
3. https://youtu.be/YvuFdJsrPqQ
4. https://youtu.be/QHwBN91gmYk
5. https://youtu.be/qn2VT7Df7no
6. https://youtu.be/QOTR-J2LJ3k

WEB RESOURCES:

1. https://www.pdfdrive.com/
2. https://www.physio-pedia.com/
3. https://nzihf.ac.nz/personal-training/exercise-principles/
4. https://www.physio-pedia.com/Maitland%27s_Mobilisations
5. https://en.wikipedia.org/

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202006	PHYSIOTHERAPY DIAGNOSIS AND CLINICAL DECISION MAKING	3	-	2	-	4

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion on the assessment, evaluation and decision of therapeutic approach towards the Clinical conditions.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Understand the basic findings, of radiology and imaging.

CO2. Analyse fitness components and on-field Training Physical assessment.

CO3. Knowledge of Neurological, Cardiopulmonary, and Musculoskeletal Assessment tools and Decision-making on improving the quality of life

CO4. Work independently and in teams to solve problems with effective communication.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	2	-	1	-	3	-
CO2	3	3	3	-	-	2	-	1	-	3	-
CO3	3	3	3	-	-	2	-	1	-	3	-
CO4	3	3	3	-	-	2	-	1	-	3	-
Course Correlation Level	**3**	**3**	**3**	**-**	**-**	**2**	**-**	**1**	**-**	3	-

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: GENERAL CLINICALEXAMINATION ***(08 Periods)***

Study of common diagnostic and therapeutic imaging tests, X-rays, MRI ultrasounds and other images helpful to the physiotherapy profession. Clinical examination in general and detection of movement dysfunction. Principles of pathological investigations and imaging techniques related to neuromuscular, skeletal and cardiopulmonary disorders with interpretation. motor learning –motor control assessment, Assessment of pain and symptoms, sources of pain, types of pain.

Module 2: GENERALPHYSICAL FITNESS ASSESSMENT ***(07 Periods)***

Anthropometric measurements. Assessment by physical fitness, BMI calculation, Physical fitness assessment by Range of motion, Muscle strength, Muscle power, endurance and skills, balance, agility, flexibility.Body composition, Fitness test for sports, cardiorespiratory fitness.

Module 3: NEUROLOGICAL CLINICAL ASSESSMENT AND SPECIAL TESTS ***(10 Periods)***

Evaluation Methods, Neurological approaches, Neuromuscular taping evaluation, higher mental functions, reflexes, Neurological disorders.EMG and Biofeedback. Biophysical measurements, physiotherapy modalities, techniques and approaches. Motor control investigations and imaging techniques. Evaluation of aging. Geriatric cases and assessment- handling old patients, and their problems, physiology of aging, degenerative changes, Alzheimer, dementia, role of physiotherapy in hospital-based care.Neurological special tests and techniques, Glasgow coma scale , Modified Ashworth scale, Mini Mentalstatus examination, APGAR score, Timed up and go test, Berg Balance scale, Nive Hole peg test, Modified Barthel indies, ASIA scale,Trunk impairment Scale.

Module 4: CARDIO-PULMONARY CLINICAL ASSESSMENT AND SPECIAL TESTS ***(10 Periods)***

Evaluation Methods, cardio-pulmonary clinical assessment, CPR. Exercise ECG testing, oxygen therapy, respiratory physiotherapy techniques, improve lung volumes, breathing techniques to clear secretions, cardiovascular changes during exercises, pulmonary circulation, ventilation-Perfusion ratio and monitoring, spirometer, Pulmonary function tests and lung volumes and capacities. Special tests and scales:Breathlessness scale a. Borg and modified Borg scale.b. Modified medical research council dyspnea scale, Edema grading,Clubbing grading, Pulse grading,Sputum grading, Chest pain scales,Glasgow coma scale,Activities of daily living- Barthal index, Pulmonary –specific outcome scale,Pulmonary functional status scale (PFSS)

Module 5: MUSCULOSKELETAL CLINICAL ASSESSMENT AND SPECIAL TESTS ***(10 Periods)***

Evaluation Methods, Aids and appliances, external aids and adaptive self-help devices, adaptive functional devices to improve movement dysfunction,Physical disability evaluation and disability diagnosis. Evaluate the gait measuring, the limb length and body circumferences, analysis and diagnosis. Clinical decision making in electrotherapeutics. Special tests and Scales**:**Neck disability index scales,Temporo - mandibular disability index,Shoulder pain and disability index – SPADI,Oswestry disability index – ODI,WOMAC scale,Liver pool elbow score, Roland and Morris disability questionnaire,Lower extremity functional scale, Foot and ankle ability measure, DASH – Disabilities of arm shoulder, hand questionnaire

TOTAL: 45 Periods

EXPERIENTIAL LEARNING

LIST OF EXPERIMENTS:

1 Case-based discussion in physiotherapy diagnosis, CT, MRI, X-ray, and other medical images.

2 Health protection, assessment of health, and skill-related physical fitness.

3 Able to conduct patient assessment and scale as per neurological case examples and case studies and physiotherapy moralities, geriatrics handling old age patients in physiotherapy in hospitals.

4 Cardioclinical assessment case evaluation, ECG testing, spirometry, respiratory techniques, changes during exercises, and breathing techniques.

5 Myofascial techniques, musculoskeletal aids ,and appliances, functional devices, the gait measuring the limb length.

RESOURCES

BOOKS:

1. Gopal nambi s, A practical Guide on physiotherapy assessment for physiotherapy students" JP medical publishers, 1st edition (2017).
2. Dr A.K. Uppal , Scientific Principles of sports training, friends publications, (2017)
3. Thomas H. Berquist , Imaging of sports injuries. , Aspen publishers, 1st edition, 1992
4. SusanEdwards,Neurological physiotherapy-a problem solving approach, churchcilllivingstone, 2nd edition (2001)
5. MichaelJ.G.Harrison, Clinical skills in neurology, butterworthheinemann publisher, 2nd edition (1996)
6. JenniferA.Pryor, physiotherapy for respiratory and cardio problems- adults and paediatrics, Elsevier health publisher, 4nd edition, 2013
7. Donnafrownfelter Cardiovascular andPulmonary physical therapy- evidence to practice, Mosby publishers, 5th edition, 2012.

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=1afP6eGflR8
2. https://www.youtube.com/watch?v=E44W54z_Ykw
3. https://www.youtube.com/watch?v=gaiCtdo6CLE
4. https://www.youtube.com/watch?v=fcN37TxBE_s
5. https://youtu.be/VcCAHbiEcZo?si=bUmruUh35i8cPiqt
6. https://www.youtube.com/live/WIUsBtj-q_s?si=A3dCSoZn6MWE-OX9

WEB RESOURCES:

1. Narayan, K Kar, S Gupta, N. From 'Paramedics' to 'Allied Health Professionals': Landscaping the Journey and Way Forward. Public Health Foundation of India: New Delhi, India, 2012.
2. Standards of practice for ACT Allied Health Professionals 2005. Available from: http://health.act.gov.au/c/health?a=dlpubpoldoc&document=863.
3. PhysioPedia

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT201003	SPORTS FOR FITNESS, PROSTHETICS, AND ORTHOTICS	4	-	-	-	4

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course gives an overview of different exercises, Principles of training and Physiological changes in training the individuals for fitness. Essentials of Orthoses and Prosthesis in rehabilitation.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Apply the concepts of exercise physiology, Nutrition, and training for fitness.

CO2. Understand the adaptations to training and design relevant training plans.

CO3. Knowledge on optimization of the performance and effects of ergogenic aids on performance.

CO4. Analyse and apply the recent advances in orthosis and prosthesis management.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	1	-	1	-	1	1	-	3
CO2	3	2	3	1	-	1	-	2	1	-	3
CO3	3	2	3	1	-	1	-	2	1	-	3
CO4	3	2	3	1	-	1	-	2	1	-	3
Course Correlation Mapping	**3**	**2**	**3**	**1**	**-**	**1**	**-**	**2**	**1**	**-**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Fitness and Nutrition ***(15 Periods)***

Methods of Program evaluation- Field testing, Principles of Training- Specificity, overload, progression, individuality, adaptation, and reversibility. Importance of Nutrition macro and micronutrients in the training.

Module 2: Adaptations to training ***(15 Periods)***

Resistance training and gains in muscle fitness, Adaptations to aerobic and anaerobic training, resistance training programs, anaerobic and aerobic power training program, muscle soreness and cramps, resistance training for special population.

Module 3: Optimizing performance ***(15 Periods)***

Optimizing training, overtraining, tapering for peak performance, detraining. Ergogenic aids and sport- pharmacological, hormonal, physiological, and nutritional agents

Module 4: Orthosis and Prosthesis ***(15 Periods)***

Introduction to prosthetics and orthotics- types, indications, and contraindications. Evaluation for deformities, Rationale for prescription of Prosthetics and orthotics, recent advances.

Total Periods: 60

EXPERIENTIAL LEARNING

1. Carbohydrate loading and performance.
2. Importance of Stretching Exercises in sports.
3. Reaction time in sports performance.
4. Recent literature on Micronutrients and performance.
5. Progressive Resistance Exercises.

RESOURCES

BOOKS:

1. Daniel D Arnheim: Arnheims principles of athletic training, McGraw-Hill higher education, 3rd Edition,2002.
2. Tudor O. Bompa: Periodization theory and methodology of training; Human kinetics; 6th Edition, 2018.
3. Wilmore: Physiology of sport & Exercise. Human Kinetics publishers; 8th Edition, 2021..

VIDEO LECTURES:

1. https://youtu.be/srevC5ICT_s
2. https://youtu.be/317W2zrQh-M
3. https://youtu.be/2CxEhg50oCI
4. https://youtu.be/fIGX9yyPRiE
5. https://youtu.be/x8H3SRq1L8w
6. https://youtu.be/Ywny2RH1NdQ

WEB RESOURCES:

1. https://www.pdfdrive.com/
2. https://www.physio-pedia.com/
3. https://nzihf.ac.nz/personal-training/exercise-principles/
4. https://www.physio-pedia.com/Maitland%27s_Mobilisations
5. https://en.wikipedia.org/

PROGRAM ELECTIVE

Course Code	Course Title-	L	T	P	S	C
22PT202016	**BASIC SCIENCE - NEUROLOGY**	4	-	2	-	5

Pre-Requisite

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This subject follows the basic science subjects to provide the knowledge about relevant aspects of neurology.

COURSE OUTCOMES: After successful completion of the course students will be able to

CO1. Understand the Basic anatomy and clinical physiology diagnostic measures of patients with disorders of Autonomic Nervous system And Peripheral Nervous system blood supply of brain Neuro biology of neurons

CO2. Demonstrate competencies in identifying common clinical signs of various neurological disorders CNS normal development of brain and spinal cord

CO3. Demonstrate knowledge in common functions of all the organ procedures used in the neurophysiological of learning

CO4. Apply the role of student should get well acquired with the Patho mechanics of individual joints Gait and posture different and managing the **neurological** disorders.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2				2	-	2	3	-	-
CO2	3	3		-	-	-	-	2	3	-	-
CO3	3	2	-	-	-	-	-	2	3	-	-
CO4	3	2	3	-	-	-	-	2	3	3	-
Course Correlation Level	**3**	**3**	**3**	**-**	**-**	**2**	**-**	**2**	**3**	**3**	-

Correlation levels: 3: High; 2: Medium; 1: Low

COURSECONTENT

MODULE1: BASIC SCIENCE AND NEUROANATOMY ***(15 PERIODS)***

Neuron Neuroglia Peripheral Nerves Spinal Cord Medulla Pons Midbrain Cerebellum Basal Ganglia Other Sub cortical structure Cerebrum Reticular and Limbic system Autonomic nervous system Ventricular system Blood supply of the brain Meninges Special senses. Introduction and organization of nervous system, normal development of brain and spinal cord. Neurobiology of neurons and neuroglia Coverings of nervous system Nerve fibers Dermatomes and myotomes.

MODULE2: CLINICAL SCIENCE AND NEURO ANATOMY ***(15 PERIODS)***

Internal capsule, corpus striatum Basal ganglia and its connections Ventricular systems and CSF Blood brain barriers Spinal cord tracts- Ascending, descending Blood supply of CNS and peripheral nervous system, venous drainage of CNS Peripheral nervous system Autonomic nervous system Cranial nerves and their nuclei. Cerebrum and cerebral hemispheres, cerebral cortex Cerebellum and its connections Brain stem – mid brain, pons, medulla Thalamus, hypothalamus- connections Limbic system, reticular formation.

MODULE3: BASIC NEURO PHYSIOLOGY ***(15 PERIODS)***

Basic components of the motor system: Cells and tissues Excitable cell: their morphology and physiology Skeletal muscle: the somatic effectors. The neuromuscular junction: the nerve /muscle interface Basic sensory mechanisms and the somatosensory system. Control of motor activity: Systems that regulate and coordinate movement Motor control at the spinal cord level Brainstem and motor control Cortical motor systems Cerebellar mechanisms. Basal ganglia and their connections Limbic system Special senses Coverings of nervous system. Nerve fibers Cerebrum and cerebral hemispheres, cerebral cortex Cerebellum and its connections.

MODULE4: BASIC NEURO PHYSIOLOGY AND PATHO MECHANICS ***(15 PERIODS)***

Ventricular systems and CSF Blood brain barrier Spinal cord tracts- Ascending, descending. Peripheral nervous system Autonomic nervous system. Cranial nerves and their nuclei Motor control Neural development of posture and gait Physiology of pain Physiology of reflexes – normal and abnormal Physiological basis of motor learning, recovery of functional motor control. Brain stem – mid brain, pons, medulla Thalamus, hypothalamus- connections Limbic system, reticular formation. Brain stem – mid brain, pons, medulla Thalamus, hypothalamus-connections2 Limbic system, reticular formation. Patho-mechanics of individual joints, gait and posture related to neurological diseases.

TOTAL PERIODS:60

EXPERIENTIAL LEARNING

1. Understand the principles of basic science and neuroanatomy evidence-based.
2. Identify the indications of physiotherapy for various disease, disorders and manage them in an appropriate manner with physiotherapeutic modalities
3. Understand the theoretical basis for evidence-based practice;
4. Assessment of physical dysfunction, movement pattern, gait, balance, posture, activity level etc. for diagnosis and prescription
5. Demonstrate an expertise in health promotion, early identification and intervention for quality restoration of function.

RESOURCES

TEXT BOOKS:

1. Vishram Singh Text book of clinical neuroanatomy by (Elsevier)-4th edition, 2007
2. Richard S Snell Clinical Neuroanatomy for Medical Students by, 5th Edition, 2001.
3. RHS Carpenter Neurophysiology, Clinical neurology, 4th edition ,2003.
4. Christopher M. Fredericks and Lisa K. Saladin Pathophysiology of the motor systems: Principles and Clinical presentations (F.A. Davis Company,4th edition, 1996.
5. Prof. Maria Stokes – Neurological Physiotherapy ,7th edition,1999
6. U.K. Misra J Kalita - Clinical Neurophysiology 2nd edition, 2018
7. Richard S. Snell – Clinical Neuroanatomy for Medical students,7th edition,2002
8. Helen Cohen – Neurosciences, 2nd edition, 1998.
9. Susan Campbell – Physical Therapy for children ,4th edition, 2011
10. John Stone Stroke Patient - Principles of Rehabilitation- (Churchill Livingstone)-2nd edition, 1982
11. Sophia Levitt Treatment of CP and Motor delay,6th edition, 2019
12. Neurological Physiotherapy - Susan Edward ,2nd edition, 2001
13. Techlink – Pediatric Physical Therapy,6th edition, 2021
14. Inderbir Singh Neuro Anatomy ,10th edition, 2017
15. Vishram Singh Clinical Neuro Anatomy, 4th edition, 2020
16. UK Mishra Clinical Neuro Physiology ,2nd edition, 2018

VIDEO LECTURES:

1. https://teachmeanatomy.info/neuroanatomy/
2. https://www.youtube.com/playlist?list=PLmGQgRI4QyEDCSPyYurmzj_zatY5BWz_r
3. https://www.youtube.com/watch?v=z2L9t7NUaHM
4. https://www.youtube.com/watch?v=WmmV3xiYAdE

5. https://www.youtube.com/watch?v=k6xpar7F5Rs
6. https://www.youtube.com/watch?v=PhVU0Gr0ndw
7. https://www.youtube.com/playlist?app=desktop&list=PLvVaOPXPbUcrS5-9hKNvl4K9LZV0EB8dR
8. https://www.youtube.com/watch?v=f3eEVHjQ2Zw

Web Resources:

1. https://www.physio-pedia.com/Blood-Brain_Barrier#share
2. https://www.physio-pedia.com/Corticospinal_Tract#share
3. https://www.physio-pedia.com/Pain_Mechanisms#share

PROGRAM ELECTIVE

Course Code	Course Title	L	T	P	S	C
22PT201013	**CLINICAL NEUROLOGY**	5	-	-	-	5

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: Clinical features pathophysiology general investigations medical and surgical management of the below mentioned conditions

COURSE OUTCOMES: After successful completion of the course students will be able to

CO1. Apply to provide adequate knowledge about the clinical neurological conditions

CO2. Develop the knowledge and skills to students as well young professionals.

CO3. Evaluate to perform independent physiotherapy assessment and clinical conditions.

CO4. Analyze the diagnostic modalities in clinical neurological conditions.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2				-	-	2	3	-	-
CO2	3	2	2	-	-	-	-	2	3	-	-
CO3	3	2	-	-	-	-	-	2	3	2	1
CO4	3	1		-	-	-	-	2	3	-	1
Course Correlation Level	**3**	**2**	**1**	**-**	**-**		**-**	**2**	**3**	2	1

Correlation levels: 3: High; 2: Medium; 1: Low

COURSECONTENT

MODULE1: CLINICAL CONDITIONS OF NEUROLOGY ***(20 PERIODS)***

Intracranial neoplasms: Gliomas, meningiomas, neuromas, angiomas, cranio-pharyngismus, pituitary adenomas, medical and surgical management. Pyogenic infections of CNS: Meningitis, brain abscess, TB, neurosyphilis. Viral infection of CNS: Poliomyelitis, viral encephalitis, substance sclerosing encephalitis, AIDS, arterio-venous malformation of the brain, Metabolic disorders of the brain, hypoxic encephalopathy, hypoglycemic encephalopathy, hepatic encephalopathy, spina bifida, hydrocephalus, Neural tube defects Cranio - vertebral junction anomalies

MODULE2: CLINICAL FEATURES & MANAGEMENT OF NEUROLOGICAL DIORDERS ***(20 PERIODS)***

Degenerative diseases of the nervous system: Parkinsons diseases, Dementia, MND, amyotrophic lateral sclerosis, progressive bulbar palsy, Alzheimer's diseases. Cerebral palsy, Disorders of the central motor control, Disorders of the spinal cord Parkinsonism and other movement disorders of the basal ganglia Disorders of the cerebellum and its connection Traumatic brain injury Cerebrovascular disease (Stroke) Multiple sclerosis and other central demyelinating diseases, Vestibular disorders.

MODULE:3 DEMYELINATING DISEASES – CENTRAL & PERIPHERAL NERVOUS SYSTEM ***(20 PERIODS)***

Polyneuropathy: Post infective poly ridicule neuropathy (GBS), Diabetic neuropathy, hereditary sensory motor neuropathy Acute disseminated encephalomyelitis transverse myelitis, multiple sclerosis, Disorders of spinal cord, compression of spinal cord, neoplasm of vertebral column, intervertebral disc prolapse, extra dural or epidural abscess cervical and lumbar disease tumors, Syringomyelia, multiple sclerosis, myasthenia gravis.

MODULE:4 POLYNEUROPATHIES & DISEASES OF THE MUSCLE ***(15 PERIODS)***

Peripheral nerve and plexus lesions Entrapment neuropathies peripheral neuropathies, cerebellar lesions, Myasthenia gravis, Motor neuron diseases, other conditions Learning disorders, Visual dysfunction Cognitive and perceptual dysfunction Adverse effects of immobilization on the musculoskeletal system Adverse effects of immobilization on visceral function.

TOTAL PERIODS:75

EXPERIENTIAL LEARNING

1. Demonstrate ability to make clinical decision regarding Physiotherapy strategy techniques and select appropriate outcome
2. Analyze and evaluate the clinical features and management of neurological conditions
3. Study a case and clinical application awareness using demyelinating diseases and central and peripheral neuropathy
4. Evaluate the clinical application of various neurological conditions
5. Demonstrate proficiency in classroom and clinical teaching using newer and appropriate technology.

6. Demonstrate a broad range of technical skill in diagnosing the physiotherapy related neurology conditions.

RESOURCES

TEXTBOOKS:

1. Davidson's principles and practice of medicine
2. Neuro anatomy – Inderbir singh
3. Clinical neuro anatomy – Vishram singh
4. Clinical neuro physiology – U.K Mishra
5. Neurological examination – Robert J.
6. Neurological differential diagnosis – John Patten

VIDEO LECTURES:

1. https://in.video.search.yahoo.com/video/play;
2. https://in.video.search.yahoo.com/video/play;
3. https://youtu.be/cRLB7WqX0fU
4. https://youtu.be/WovsOgA7cGs
5. https://youtu.be/ZBHrsNt3Yao

Web Resources:

1. Parkinson's - Physiotherapy Referral and Assessment – Physiopedia. Introduction Physiotherapists play a vital role in supporting people with Parkinson's disease (PD) to choose management strategies, prioritize and address the challenges they face over the course of the condition. Improving movement and safety is usually the main focus of physiotherapy.

2. Cerebral Palsy Etiology and Pathology – Physiopedia. Introduction Cerebral palsy (CP) is a permanent movement and posture disorder caused by issues in the developing fetal and infant brain.[1] CP is the most common childhood disability.[2] The core symptom of cerebral palsy is motor function disorder, but other associated dysfunctions

3. Rehabilitation of Peripheral Nerve Injuries in Disasters and Conflicts – Physiopedia. Introduction Peripheral nerves can sustain injury from numerous causes including traumatic thermal, chemical, or mechanical injury, inherited causes, infections, collagen or metabolic diseases (diabetes mellitus being one of the most common), exposure to endogenous or exogenous

4. Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) – Physiopedia. Introduction Demyelination of Nerve Chronic inflammatory demyelinating polyneuropathy (CIDP) is an acquired demyelinating disease involving peripheral nerves, and is generally considered the chronic counterpart to Guillain-Barré syndrome

(GBS). About 16% of the patients present with acute GBS. Patients typically present with a gradual and protracted (>2 months) symmetrical weakness, balance problems, impaired seen

5. https://www.physiopedia.com/Multiple_Sclerosis_(MS)?utm_source=physiopedia&utm_medium=related_articles&utm_campaign=ongoing_internal#share
6. https://www.physiopedia.com/Neuropathies?utm_source=physiopedia&utm_medium=related_articles&utm_campaign=ongoing_internal#share

PROGRAM ELECTIVE

Course Code	Course Title	L	T	P	S	C
22PT202019	**NEUROLOGY ASSESSMENT AND EVALUATION**	4	-	2	-	5

Pre-Requisite -22PT201013 Clinical Neurology

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: The main objective of this paper is to make the student familiarize with the assessment tools in neurological physiotherapy. Any latest tools should to critically analyzed.

COURSE OUTCOMES: After successful completion of the course students will be able to

CO1. Demonstration of the Principles of assessment and application of those principles in related neurological conditions

CO2. Identify the evidences available for assessment and management of neurological conditions and latest tools.

CO3. Analyze the evidences available for the management of various neurological conditions.

CO4. Identify the scales and understanding the clinical use, sequence of treatment and how to advise for different patients.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3				-	-	2	3	-	-
CO2	3	2	3	-	-	-	-	2	3	-	-
CO3	3	2	3	-	-	-	-	2	3	-	-
CO4	3	3	2	-	-	-	-	2		-	-
Course Correlation Level	**3**	**3**	**3**	**-**	**-**		**-**	**2**	**3**	-	-

Correlation levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

MODULE1: PRINCIPLES OF ASSESSMENT ***(15 PERIODS)***

Assessment of level of consciousness, Orientation, Response to stimuli, Level of consciousness Assessment of cognitive function, Memory, Attention, Emotional response, Higher level cognitive abilities Assessment of speech and communication Assessment of cranial nerve integrity Assessment of vital signs, Assessment of autonomic nervous system function, Assessment of sensory integrity, Superficial sensation, Proprioceptive (Deep) sensation, Combined cortical sensation, Assessment of perceptual function, Body scheme and body image disorders, Spatial relation syndrome

MODULE2: PRINCIPLES OF ASSESSMENT & LATEST TOOLS ***(15 PERIODS)***

Assessment of motor function, Muscle bulk and firmness, Muscle tone, Muscle Strength, Voluntary movement control (Stages of recovery, Synergy pattern, Associated reaction), Muscle endurance, Fatigue, Involuntary movements, Assessment of reflex integrity, Superficial reflexes, Deep tendon reflexes, Primitive or spinal reflexes, Tonic or brainstem reflexes, Assessment of coordination, Gross motor coordination, Fine motor coordination, Assessment of balance, Sensory integration or organization, Limits of stability (Steadiness and Maximum balance range), Availability of postural synergies (Postural strategies), Balance reactions, Static balance (Sitting and Standing), Dynamic balance (Functional movement tasks, Dual tasks and BOS challenges), Assessment of posture, Head, neck and trunk alignment, Attitude of extremities, Symmetrical and asymmetrical posture (weight bearing), Gait analysis, Kinematic analysis, Kinetic analysis, Upper limb control, Reach, Grasp, Manipulation.

MODULE3: NEUROLOGICAL DISABILITY SCALES ***(15 PERIODS)***

Measures of focal disability; Standing balance, Functional ambulation categories, Hauser ambulation index, Timed walking test, River-mead mobility index, Nine-hole Peg test, Action research arm test, Franc-hay arm test. Activities of daily living and extended ADL test; Barthel ADL tests, Katz ADL index, Nottingham ten point. Global measures of disabilities; OPCS disability scale-severe categories, functional independence measure, PULSE profile. Measures of handicap and quality of life; WHO handicap scale, Rankin scale, Glasgow com)e scale, Quality of life-measure, Environmental assessment-nonstandard.

MODULE4: SCALES & EVALUATION ***(15 PERIODS)***

Multiple sclerosis: Kurtz Ke multiple sclerosis rating scale, An illness severity score for multiple sclerosis. Stroke scales: Mathew stroke scale, national institute of health stroke scale, Candida neurological scale, Orgone score, hemispheric stroke scale, Clinical classification of stroke (Bamford), Allen score for prognosis of stroke, Guy's hospital score for hemorrhage. Head injury: Galveston orientation and amnesia, Rappaport disability rating scale. Parkinson's disease. Columbian rating scale: Parkinson's disease impairment index, disability index, Hoen and Yahr grades, Unified Parkinson's diseases rating scale version. Spinal cord injury; Frenkel's scale, Motor and sensory indices, American spinal cord injury association assessment chart.

TOTAL PERIODS: 60

EXPERIENTIAL LEARNING

1. Demonstrate and apply the information regarding recent advances in Neuro physiotherapy for patient care.
2. Assess the evidences available for assessment and management of neurological conditions.
3. Evaluate the evidences available for the management of various neurological conditions
4. Demonstrate the neurological disability scales
5. Assessment and evaluation of scales and advanced tools.
6. Demonstrate a broad range of technical skill in diagnosing the physiotherapy related neurology conditions.

RESOURCES

TEXTBOOKS:

1. Davidson, Davidson's principles and practice of medicine, 24th edition, April 2022
2. Inderbir Singh, Neuro anatomy, 10th edition, June 2017
3. Vishram Singh, Clinical neuro anatomy,3rd edition, 2002.
4. U.K Mishra, Clinical neuro physiology ,3rd edition, June 2016
5. Robert J, Neurological examination, 2nd edition, may 2002
6. John Patten, Neurological differential diagnosis, 2nd edition, July 1996
7. Davidson, Davidson's principles and practice of medicine, 24th edition, April 2022
8. Inderbir Singh, Neuro anatomy, 10th edition, June 2017
9. Vishram Singh, Clinical neuro anatomy,3rd edition, 2002.

VIDEOLECTURES:

1. https://www.youtube.com/watch?v=GJBnwZQ60Ss
2. https://www.youtube.com/watch?v=7dZHmKMLdC0
3. https://www.youtube.com/watch?v=GFrHKUi0tnI
4. https://www.youtube.com/watch?v=CVj22xtauPw
5. https://www.youtube.com/watch?v=Jp5n5eZuSYQ
6. https://www.youtube.com/watch?v=iSRXz89iesI

WEB RESOURCES:

1. Ocular Autonomic Nervous System – Physiopedia. Introduction The Ocular Autonomic Nervous System (OANS) is responsible for the autonomic physiological functions of the eye. These are: Pupil size Lens accommodation Ocular circulation Intraocular pressure regulation [1] The eyes are innervated by the sympathetic, parasympathetic
2. Moebius Syndrome – Physiopedia. Definition/Description Moebius, or Möbius, syndrome is defined as congenital facial palsy combined with abnormal ocular abduction, caused by abnormal development of the 6th and 7th cranial nerves. It is a rare congenital condition that was first described by German neurologist Paul
3. The Gait Cycle – Physiopedia. The Gait Cycle The action of walking may be summarized by the following sequence:[1] Registration and activation of the gait command within the central nervous system. Transmission of gait signals to the peripheral nervous system. Contraction of muscles. Generation of forces across joints Regulation of joint forces and moments by skeletal segments. Generation of ground reaction forces (GRF). Normal gait consists of two
4. Reactive Balance Training – Physiopedia. Introduction Gait and balance problems are considered high risk factors for falls.[1] The World Health Organization (WHO) reported that fall frequency increases with age. According to WHO, one-third of population over

65 experiences at least one falls each year. [2] Reactive balance (RB)

5. Lower Limb Motor Coordination – Physiopedia. Introduction Motor coordination, otherwise referred to as dexterity, refers to the ability to perform a motor task in an accurate, rapid and controlled manner [1]. Coordination is dependent on interactions within feedforward and feedback mechanisms between the central nervous

PROGRAM CORE

Course Code	Course Title	L	T	P	S	C
22PT202018	**NEURO PHYSIOTHERAPY INTERVENTIONS**	4	-	2	-	5

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: The student should understand the use of various assessment and scales. Any scales published in journals as research articles should be discussed.

COURSE OUTCOMES: After successful completion of the course students will be able to

CO1. Understand the clinical signs and symptoms of diseases commonly seen in Neurology. Clinical tests and special investigations commonly used in the diagnosis of these conditions.

CO2. Apply the clinical diagnosis and a list of differential diagnoses consistent with typical presentations.

CO3. Analyze the serious and common disorders and the specialized areas that may impact on Neurological physiotherapy practice.

CO4. Demonstrate a broad range of technical skill in diagnosing the physiotherapy related neurology conditions.

Course Outcomes	Program Outcomes								Program Specific Outcomes		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	-	-	-	-	2	2	2	3
CO2	3	2		-	-	-	-	2	2	2	3
CO3	3	2	2	-	-	-	-	2	2	2	3
CO4	3	2	3	-	-	-	-	2	2	2	3
Course Correlation Level	**3**	**2**	**3**	**-**	**-**	**-**	**-**	**2**	**2**	**2**	**3**

Correlation levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

MODULE:1 NEURO REHABILITATION – NEURO FACILITATION APPROACH ***(15 PERIODS)***

Physiotherapeutic interventions for relief of pain, Physiotherapeutic interventions of patients with postural control, mobility control disorders. Neurological rehabilitation-neuro-facilitation approach, Neuro-physiotherapeutic approaches – Compensatory training approach, Muscle reeducation approach, Novel Approach, Neuro-physiological approaches - NDT, Brannstrom, Roods, PNF, Sensory integration therapy. Motor relearning program, Constraint Induced movement therapy, Task Oriented approach, Novel approach, Vojta therapy. Biofeedback training, Neural mobilization and Neuro Dynamics, Sensory rehabilitation, Body Weight Supported Treadmill Training, Myofascial Release Technique, Inhibitory and Facilitation technique, Functional Re-Education, learning skills, A.D.L, Tapping in neurological conditions

MODULE:2 VIRAL INFECTIONS OF CNS & DEGENERATIVE DISEASES OF NERVOUS SYSTEM ***(15 PERIODS)***

Intracranial neoplasms: gliomas, meningiomas, neuromas, cranio-pharyngismus, pituitary adenomas. Medical and surgical management, Pyogenic infections of CNS: meningitis, brain abscess, tuberculosis, neurosyphilis. Viral infections of CNS: poliomyelitis, viral encephalitis, substance sclerosing encephalitis, AIDS. Cerebra-vascular diseases: stroke syndrome, ischemic stroke infarction, thromboembolic stroke, hemorrhagic stroke, transient ischemic attack, arterio-venous malformation of the brain, intra cranial hemorrhage. Metabolic disorders of the brain: hypoxic encephalopathy, hypoglycemic encephalopathy, hepatic encephalopathy. Degenerative diseases of the nervous systems: motor neuron disease, lateral sclerosis. Progressive bulbar palsy.

MODULE:3 POLYNEUROPATHIES ***(15 PERIODS)***

Muscular dystrophy (DMD) Myasthenia Gravis, Transverse myelitis, Poliomyelitis, Parkinson's disease, Poly neuropathy: post infective poly radiculo-neuropathy (gallian barrier syndrome), diabetic neuropathy, hereditary sensory motor neuropathy, vertigo, and imbalance, Motor neuron diseases, Disorders of spinal cord: compression of spinal cord, neoplasm of vertebral column, intervertebral disc prolapse, extra dural or epi dural abscess. Syringomyelia, multiple sclerosis, myasthenia gravis.

MODULE:4 CONGENITAL CHILDHOOD DISORDERS AND SPECIAL TECHNIQUES ***(15 PERIODS)***

Hydrocephalus, Spina bifida, Cerebral palsy, Down's Syndrome, syringomyelia Cerebellar lesions, Higher mental function, Oro-motor rehabilitation, Vestibular rehabilitation, Stem cell therapy in neurological diseases, management of Japanese encephalitis, management of unconscious patient. Head Injury: Etiology, pathophysiology, classification, clinical sign and symptoms, investigations, Evaluation and Management of Brain and Spinal Cord Disorders, Spinal Cord injury and Diseases of the Spinal Cord.

TOTAL PERIODS: 60

EXPERIENTIAL LEARNING

1. Assess case presentations and case discussions on neuro rehabilitation.
2. Evaluate and assessment methods on student models, treatment techniques and practice sessions
3. Trace out the differential diagnosis and diagnosis of various Neurology conditions
4. Understand the techniques of neuro rehabilitation approaches.
5. Analyze and evaluate the neuro patient illness by proper examination.

RESOURCES

TEXTBOOKS:

1. Robert M. Herndon, Hand book of neurologic rating scales, 2nd edition, (Demos publications 2005)
2. John Spillane, Bickerstaff's neurological examination in clinical practice, 6th edition (Blackwell science limited 1996)
3. Susan B O Sullivan and Thomas J Schmitz. Physical rehabilitation laboratory manual: Focus on functional training. A. Davis Company),7th edition,1999.
4. R.S. Illingworth, The development of the infant young child: Normal and Abnormal, 9th edition (Churchill Livingstone 1996)
5. Jenny, Pain -a text book for therapist old edition, October 2008

VIDEOLECTURES:

1. https://youtu.be/PCnMrtdlRWU?si=5O0ZNV7JIrF6Tzc5
2. https://youtu.be/cRLB7WqX0fU?si=wjV4k_2Uko8pLj5V
3. https://youtu.be/nV4ILsaVSXc?si=-BwtqZSs3butVHk8
4. https://youtu.be/bVfN0RTdVmU?si=12j0uG6pgZqle2Id
5. https://youtu.be/Ka5s-RFbNsw?si=N1LYC6fDAxLTFegk

Web Resources:

1. Tadi P, Lui F. Acute Stroke (Cerebrovascular Accident). Available from: https://www.ncbi.nlm.nih.gov/books/NBK535369/ (last accessed 28.12.2019)
2. Zafar S, Yaddanapudi SS. Parkinson disease. InStatPearls [Internet] 2019 Dec 4. StatPearls Publishing. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470193/ (last accessed 6.1.2020)
3. Waxenbaum JA, Futterman B. Anatomy, Back, Intervertebral Discs. InStatPearls [Internet] 2018 Dec 13. StatPearls Publishing. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470583/ (last accessed 27.1.2020)
4. Shepherd RB. Physiotherapy in pediatrics. Heinemann Medical Books; 1980.
5. Radiohelia Guillain-Barré syndrome Available:https://radiopaedia.org/articles/guillain-barre-syndrome-2 (accessed 25.9.2022)

PROGRAM ELECTIVE

Course Code	Course Title	L	T	P	S	C
22PT201005	GERIATRICS PHYSIOTHERAPY	2	-	-	-	2

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course gives an overview of different problems faced by old age people, physiological changes of aging, musculoskeletal physiotherapy evaluation, and management.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Describe the ageing process and identify common geriatric syndromes.

CO2. Perform basic geriatric assessment and interpret commonly used functional tools.

CO3. Explain and demonstrate essential physiotherapy interventions for major geriatric conditions.

CO4. Apply principles of community-based rehabilitation, fall prevention, and caregiver education in geriatric care.

CO-PO-PSO Mapping Table:

Course Outcomes	Program Outcomes									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	3	2	-	-	-	-	-	-	1
CO2	3	3	2	-	-	-	-	-	-	1
CO3	3	3	2	-	-	-	-	-	-	1
CO4	3	3	2	-	-	-	-	-	-	1
CO5	3	3	2	-	-	-	-	-	-	1
Course Correlation Mapping	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**1**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: Introduction to Geriatrics & Ageing ***(6 Periods)***

Concepts of ageing: biological, physiological, psychological changes, Epidemiology demographic trends, Geriatric syndromes: frailty, falls, delirium, immobility, incontinenc, Scope & role of physiotherapy in geriatric care.

Module 2: Geriatric Assessment in Physiotherapy ***(8 Periods)***

Comprehensive Geriatric Assessment overview, Functional scales: ADL, IADL, FIM, Mobility & balance assessments: TUG, Berg Balance Scale, Pain assessment in elderly, Cognitive screening: MMSE / MoCA,Fall risk evaluation

Module 3: Physiotherapy Interventions for Geriatric Conditions ***(10 Periods)***

Exercise prescription for elderly (strength, balance, endurance, flexibility), Training in osteoarthritis, osteoporosis, post-fracture rehab, Neuro-geriatric conditions: Parkinson's, stroke, Basic cardiopulmonary rehab for elderly, Assistive devices: types, indications & gait training, Home-based physiotherapy

Module 4: Geriatric Rehabilitation & Community-Based Care ***(6 Periods)***

Multidisciplinary approach, Fall-prevention strategies & environmental modifications, Community-based rehabilitation (CBR) programs, Caregiver training: transfer techniques, safety, ergonomics, Active ageing, wellness & health promotion, Government policies for senior citizens.

Total Periods: 30

EXPERIENTIAL LEARNING

1. Case Scenario Discussions
2. Hands-on Practice of Geriatric Scales
3. Video-Based Gait Analysis
4. Designing Exercise Programs for Elderly
5. Participation in Community Awareness Program

RESOURCES

BOOKS:

1. *Geriatric Physical Therapy* by Andrew A. Guccione, Rita Wong & Dale Avers
2. *Physical Rehabilitation* by Susan O'Sullivan & Thomas Schmitz
3. *Essentials of Geriatric Medicine* by B.R. Sharma
4. *Therapeutic Exercise: Foundations and Techniques* by Carolyn Kisner & Lynn Allen Colby

VIDEO LECTURES:

1. https://youtu.be/jvIFA9W836w
2. https://youtu.be/v_Au06q5E18
3. https://youtu.be/Tx_rolpoS2w
4. https://youtu.be/xCB8T1TRguA
5. https://youtu.be/C6SDYeilb6M

WEB RESOURCES:

1. https://www.pdfdrive.com/
2. https://www.physio-pedia.com/
3. https://nzihf.ac.nz/personal-training/exercise-principles/
4. https://www.physio-pedia.com/Maitland%27s_Mobilisations
5. https://en.wikipedia.org/

UNIVERSITY ELECTIVE

Course Code	Course Title	L	T	P	S	C
22CB101703	FORENSIC SCIENCE	3	-		-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion on Concepts of Forensic Science, Tools and Techniques in Forensic Science, Forensic Photography, Crime Scene Management, Crime Scene Management Laws and Forensic Science.

COURSE OUTCOMES: *After successful completion of the course, students will be able to*:

CO1 Understand the basic concepts of Forensic science.
CO2 Apply various tools and techniques in forensic science for crime investigation.
CO3 Understand Forensic Photography fundamentals.
CO4 Perform Crime scene investigation, scene reconstruction and prepare reports.
CO5 Understand Legal aspects of Forensic Science.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2	3	3	2	2	2							
CO3	3	3										
CO4	3	3	2	2	2							
CO5	3	3	2	2	2							
Course Correlation Mapping	**3**	**3**	**2**	**2**	**2**							

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

COURSE CONTENT

Module 1: INTRODUCTION ***(09 Periods)***

Introduction, Need, Scope, Concepts and Significance of Forensic Science, History and Development of Forensic Science, Laws and Basic principles of Forensic Science, Branches of forensic science, Organizational set-up of a Forensic Science Laboratory. Investigative strategies. Expert testimony and eye-witness report.

Module 2: TOOLS AND TECHNIQUES IN FORENSIC SCIENCE ***(09 Periods)***

Basic principles of microscopy, spectroscopy, chromatography, Electrophoresis, Enzyme Linked Immunosorbent Assay (ELISA), Radio Immuno Assay (RIA). Measuring and optical instruments. Research methodologies; Formation of research design on a specific problem. Central tendency and Dispersion. Test of significance. Analysis of variance, Correlation and Regression.

Module 3: FORENSIC PHOTOGRAPHY ***(8 Periods)***

Basic principles of Photography, Techniques of black & white and color photography, cameras, lenses, shutters, depth of field, film; exposing, development and printing techniques; Different kinds of developers and fixers; UV, IR, fluorescence illumination guided photography; Modern development in photography- digital photography, working and basic principles of digital photography; Surveillance photography. Videography and Crime Scene & laboratory photography.

Module 4: CRIME SCENE MANAGEMENT ***(11 Periods)***

Crime scene investigations, protecting and isolating the crime scene; Documentation, sketching, field notes and photography. Searching, handling and collection, preservation and transportation of physical evidences, Chain of custody and Reconstruction of scene of crime. Report writing.

Module 5: LAW AND FORENSIC SCIENCE ***(8 Periods)***

Legal aspects of Forensic Science: Forensic Science in the Criminal Justice System, The Criminal Investigation Process, Production of Evidence: The Subpoena, The Rules of Evidence, Authentication of Evidence: The Chain of Custody, The Admissibility of Evidence, Laboratory Reports, Examples of Analysis and Reports, Expert Testimony, Getting into Court, Testifying, Being a Witness and an Expert, Considerations for Testimony.

Total Periods: 45

EXPERIENCIAL LEARNING

1. Study of Computer Forensics and different tools used for forensic investigation
2. **Identify and list the steps for hiding and extract any text file behind an image file/ Audio file using Command Prompt**

(Note: It's an indicative one. The course instructor may change the activities and the same shall be reflected in course handout.)

RESOURCES

TEXT BOOKS:

1. Houck M.M and Siegel J.A, *Fundamentals of Forensic Science*, Elsevier, 2nd edition, 2010.
2. Sharma B.R, *Forensic Science in Criminal Investigation and Trials*, Universal Publishing Co., New Delhi, 2003.

REFERENCE BOOKS:

1. Nanda B.B and Tewari, R.K, *Forensic Science in India- A vision for the Twenty First Century*, Select Publisher, New Delhi, 2001.
2. James, S.H and Nordby, J.J, *Forensic Science- An Introduction to Scientific and Investigative Techniques*, CRC Press, USA, 2003.
3. Saferstein, Criminalistics, *An Introduction of Forensic Science*, Prentice Hall Inc, USA,2007.

4. Barry, A.J. Fisher, *Techniques of Crime Scene Investigation*, CRC Press, NewYork, 7th edition, 2003.

VIDEO LECTURES:

1. https://nptel.ac.in/courses/106106178
2. https://www.youtube.com/watch?v=X5fo1H7bc0g

WEB RESOURCES:

1. https://www.nist.gov/forensic-science
2. https://www.coursera.org/learn/forensic-science

UNIVERSITY ELECTIVE

Course Code	Course Title	L	T	P	S	C
22EC101701	**AI IN HEALTHCARE**	3	-	-	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course provides a detailed discussion on Concepts of Artificial Intelligence (AI) in Healthcare; The Present State and Future of AI in Healthcare Specialties; The Role of Major Corporations in AI in Healthcare; Applications of AI in Healthcare.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1 Understand the fundamental concepts of AI in Healthcare sector.

CO2 Analyze the present state and future of AI in Healthcare specialties for different scenarios.

CO3 Apply design concepts and metrics for AI in Healthcare.

CO4 Demonstrate basic concepts and terminologies of future applications of Healthcare in AI.

CO5 Develop AI applications through AI techniques for healthcare

CO-PO Mapping Table

Course Outcomes	Program Outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	2	-	-	-	-	-	-	-	-
CO2	2	3	-	2	-	2	2	-	-	-	-	-
CO3	2	-	2	2	-	-	-	-	-	-	-	-
CO4	2	-	-	-	2	2	-	-	-	-	-	-
CO5			3									
Course Correlation Mapping	2	-	3	2	2	2	2	-	-	-	-	-

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: INTRODUCTION TO ARTIFICIAL INTELLIGENCE IN HEALTHCARE ***(08 Periods)***

Introduction to AI in Healthcare, Benefits & Risks, AI in the health sector, AI versus human intelligence, The future of AI in health sector, AI & Neural networks.

Module 2: THE PRESENT STATE & FUTURE OF AI IN HEALTHCARE SPECIALTIES ***(10 Periods)***

Artificial Intelligence in: preventive healthcare, Radiology, Pathology, Surgery, Anesthesiology, Psychiatry, Cardiology, Pharmacy, Dermatology, Dentistry, Orthopedics, Ophthalmology.

Module 3: THE ROLE OF MAJOR CORPORATIONS IN AI IN HEALTHCARE ***(08 Periods)***

IBM Watson, The role of Google & Deep mind in AI in Healthcare, Baidu, Facebook & AI in Healthcare, Microsoft & AI in Healthcare.

Module 4: FUTURE OF HEALTHCARE IN AI ***(10 Periods)***

Evidence-based medicine, personalized medicine, Connected medicine, Virtual Assistants, Remote Monitoring, Medication Adherence, Accessible Diagnostic Tests, Smart Implantables, Digital Health and Therapeutics, Incentivized Wellness, Block chain, Robots, Robot-Assisted Surgery, Exoskeletons, Inpatient Care, Companions, Drones, Smart Places, Smart Homes, Smart Hospitals.

Module 5: APPLICATIONS OF AI IN HEALTHCARE ***(09 Periods)***

Case Study 1: AI for Imaging of Diabetic Foot Concerns and Prioritization of Referral for Improvements in Morbidity and Mortality.

Case Study 2: Outcomes of a Digitally Delivered, Low-Carbohydrate, Type 2 Diabetes Self-Management.

Case Study 3: Delivering A Scalable and Engaging Digital Therapy.

Case Study 4: Improving Learning Outcomes for Junior Doctors through the Novel Use of Augmented and Virtual Reality for Epilepsy.

Case Study 5: Big Data, Big Impact, Big Ethics: Diagnosing Disease Risk from Patient Data.

Total Periods: 45

EXPERIENTIAL LEARNING

1. Analyze how the artificial intelligence is used to predict the disease result and Prognosis Assessment of a patient.
2. How does drug discovery happen and how does AI is helping in drug discovery and Labs.
3. Justify that artificial intelligence provide engineering solutions for early detection and Diagnosis of diseases.
4. Demonstrate the prediction of bladder volume of a patient.

(Note: It's an indicative one. Course Instructor may change activities and shall be reflected in course Handout)

RESOURCES

TEXT BOOKS:

1. Dr. Parag Mahajan, *Artificial Intelligence in Healthcare*, MedManthra Publications, First Edition 2019.
2. Arjun Panesar, *Machine Learning and AI for Healthcare Big Data for Improved Health*, Apress Publications, 2019.

REFERENCE BOOKS:

1. Michael Matheny, Sonoo Thadaney Israni, Mahnoor Ahmed, and Danielle Whicher, *Artificial Intelligence in Health Care: The Hope, the Hype, the Promise, the Peril*, National Academy of Medicine Publication, First Edition 2019.

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=-aHBwTQQyNU
2. https://intellipaat.com/blog/artificial-intelligence-in-healthcare/

Web Resources:

1. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6616181/
2. https://www.ibm.com/topics/artificial-intelligence-healthcare
3. https://builtin.com/artificial-intelligence/artificial-intelligence-healthcare

UNIVERSITY ELECTIVE

Course Code	Course Title	L	T	P	S	C
22SS201701	**VALUE EDUCATION**	3	-	-	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with understanding the value of education and self-development, Imbibe good values in students, and making them know about the importance of character.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate the knowledge of values and self-development
CO2. Analyze the importance of the cultivation of values.
CO3. Learn suitable aspects of personality and behavioral development
CO4. Function as a member and leader in multi-disciplinary teams by avoiding faulty thinking.
CO5. Develop character and competence for effective studies.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes											
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	-	-	-	-	-	-	3	2	-	-	-
CO2	2	3	-	-	2	-	-	3	2	-	-	-
CO3	2	-	-	-	2	-	-	3	2	-	-	-
CO4	2	-	-	-	-	-	-	3	2	-	-	-
CO5	2	2	-	-	-	-	-	3	2	-	-	-
Course Correlation Mapping	**2**	**3**	**-**	**-**	**2**	**-**	**-**	**3**	**2**	**-**	**-**	**-**

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

COURSE CONTENT

Module 1: VALUES AND SELF-DEVELOPMENT ***(09 Periods)***

Values and self-development –Social values and individual attitudes. Work ethics, Indian vision of humanism. Moral and non-moral valuation. Standards and principles. Value judgements- Case studies

Module 2: IMPORTANCE OF CULTIVATION OF VALUES. ***(09 Periods)***

Importance of cultivation of values. Sense of duty. Devotion, Self-reliance. Confidence, Concentration. Truthfulness, Cleanliness. Honesty, Humanity. Power of faith, National Unity. Patriotism. Love for nature, Discipline- Case studies

Module 3: PERSONALITY AND BEHAVIOR DEVELOPMENT ***(09 Periods)***

Personality and Behavior Development - Soul and Scientific attitude. Positive Thinking. Integrity and discipline, Punctuality, Love and Kindness - Case studies

Module 4: AVOID FAULTY THINKING. ***(09 Periods)***

Avoid fault Thinking. Free from anger, Dignity of labour. Universal brotherhood and religious tolerance. True friendship. Happiness Vs suffering, love for truth. Aware of self-destructive habits. Association and Cooperation. Doing best for saving nature - Case studies

Module 5: CHARACTER AND COMPETENCE ***(09 Periods)***

Character and Competence –Holy books vs Blind faith. Self-management and Good health. Science of reincarnation, Equality, Nonviolence, Humility, Role of Women. All religions and the same message. Mind your Mind, Self-control. Honesty, Studying effectively- Case studies

Total Periods: 45

EXPERIENTIAL LEARNING

1. Demonstrate orally using your experiences of what values are naturally acceptable in a relationship to nurture or exploit others.
2. Prepare a report by identifying and analyzing the importance of cultivation of values.
3. Present a poster on different attitudes and behaviors.
4. Students give a PowerPoint presentation on doing best for nature.
5. Students are encouraged to bring a daily newspaper to class or to access any news related to the need for human values and note down the points.
6. Prepare a case study on how to maintain harmony with different religious people through character and competence.

(It’s an indicative one. The Course Instructor may change the activities and the same shall be reflected in the Course Handout)

RESOURCES

TEXTBOOKS:

1. R. Subramanaian, *Professional Ethics*, Oxford Higher Education, 2013.
2. Mike W. Martin and Roland Schinzinger, *Ethics in Engineering*, Tata McGraw-Hill, 3rd Edition, 2007.
3. Chakravarthy, S.K.: Values and ethics for Organizations: Theory and Practice, Oxford University Press, NewDelhi, 1999.

REFERENCE BOOKS:

1. M.G. Chitakra: Education and Human Values, A.P.H. Publishing Corporation, New Delhi, 2003
2. Awakening Indians to India, Chinmayananda Mission, 2003
3. Satchidananda, M.K.: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=90VQPZURN5c
2. https://www.youtube.com/watch?v=6ofPcK0uDaA
3. https://www.youtube.com/watch?v=5_f-7zCi79A
4. https://www.youtube.com/watch?v=2ve49BWAJRE
5. https://www.youtube.com/watch?v=kCOIfnxxQ5U

WEB RESOURCES:

1. https://www.livingvalues.net/
2. https://livingvalues.net/materials-for-schools/
3. https://www.edb.gov.hk/en/curriculum-development/4-key-tasks/moral-civic/index.html

UNIVERSITY ELECTIVE

Course Code	Course Title	L	T	P	S	C
22SS201702	**PEDAGOGY STUDIES**	3	-	-	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course deals with understanding pedagogical practices that are being used by teachers in formal and informal classrooms, the effectiveness of pedagogical practices, teacher education (curriculum and practicum), and the school curriculum and guidance materials that can best support effective pedagogy.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1 Demonstrate knowledge of pedagogical methodology
CO2 Analyze the functional knowledge in Pedagogical practices, Curriculum, and Teacher Education
CO3 Learn effective pedagogical practices and apply strategies.
CO4 Function effectively as an individual and as a member of the Professional development.
CO5 Understand research Gaps and provide future Directions.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	-	-	-	-	-	3	-	-
CO2	2	3	-	-	3	-	-	-	-	3	-	-
CO3	2	2	-	-	3	-	-	-	-	3	-	-
CO4	1	1	-	-	-	-	-	-	3	3	-	-
CO5	-	-	-	-	-	-	-	-	-	3	-	-
Course Correlation Mapping	2	2	-	-	3	-	-	-	3	3	-	-

Correlation Levels: ***3: High;*** ***2: Medium;*** ***1: Low***

COURSE CONTENT

Module 1: INTRODUCTION AND METHODOLOGY ***(09 Periods)***

Aims and rationale, Policy background, Conceptual framework and terminology Theories of learning, Curriculum, Teacher education. Conceptual framework, Research questions**.** Overview of Methodology and Searching- Case studies

Module 2: THEMATIC OVERVIEW ***(09 Periods)***

Pedagogical practices are being used by teachers in formal and informal classrooms in developing countries. Curriculum, Teacher Education- Case studies

Module 3 EFFECTIVENESS OF PEDAGOGICAL PRACTICES ***(09 Periods)***

Evidence on the effectiveness of pedagogical practices, Methodology for the in-depth stage: quality
assessment of included studies, teacher education (curriculum and practicum) and the school curriculum and guidance materials best support effective pedagogy, Theory of change, Strength and nature of the body of evidence for effective pedagogical practices. Pedagogic theory and pedagogical approaches. Teachers' Attitudes and beliefs and Pedagogic strategies- Case studies

Module 4 PROFESSIONAL DEVELOPMENT ***(09 Periods)***

alignment with classroom practices and follow-up support, Peer support, and Support from the head teacher and the community. Curriculum and assessment, Barriers to learning: limited resources and large class sizes- Case studies

Module 5 RESEARCH GAPS AND FUTURE DIRECTIONS ***(09 Periods)***

Research design**,** Contexts**,** Pedagogy**,** Teacher Education**,** Curriculum and Assessment**,** Dissemination and research impact- Case studies

Total Periods: 45

EXPERIENTIAL LEARNING

1. List out the self-improvement in you after going through pedagogical methodologies.
2. Discuss different practices that you would like to adopt in the curriculum.
3. Describe in your own words how can you bring effectiveness to the curriculum.
4. Imagine you are a head teacher and illustrate different barriers to learning.
5. Assume you are a teacher and Interpret different directions that you would bring for the assessment of the students.

(It's an indicative one. The Course Instructor may change the activities and the same shall be reflected in the Course Handout)

RESOURCES

TEXTBOOK:

1. Ackers J, Hardman F (2001) Classroom interaction in Kenyan primary schools, Compare, 31 (2): 245-261.
2. Alexander RJ (2001) Culture and pedagogy: International comparisons in primary education.

REFERENCES:

1. Akyeampong K (2003) Teacher training in Ghana - does it count? Multi-site teacher
2. Agrawal M (2004) Curricular reform in schools: The importance of evaluation, Journal of
3. Akyeampong K, Lussier K, Pryor J, Westbrook J (2013) Improving teaching and learning of
   basic maths and reading in Africa: Does teacher preparation count? International
4. Chavan M (2003) Read India: A mass scale, rapid, 'learning to read' campaign.

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=WL40UeySag4
2. https://www.youtube.com/watch?v=MMXaXDIHFJ8
3. https://www.youtube.com/watch?v=7uJL1R6M4Iw

WEB RESOURCES:

1. https://acrl.ala.org/IS/instruction-tools-resources-2/pedagogy/a-selected-list-of-journals-on-teaching-learning/
2. https://guides.douglascollege.ca/TLonline/resourcesforonlinepedagogy
3. https://www.refseek.com/directory/teacher_resources.html

UNIVERSITY ELECTIVE

Course Code	Course Title	L	T	P	S	C
22LG201701	**PERSONALITY DEVELOPMENT**	3	-	-	-	3

Pre-Requisite -

Anti-Requisite -

Co-Requisite -

COURSE DESCRIPTION: This course gives awareness to students about the various dynamics of personality development.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Demonstrate knowledge in Self-Management and Planning Career

CO2. Analyze the functional knowledge in attitudes and thinking strategies

CO3. Learn and apply soft skills for professional success.

CO4. Function effectively as an individual and as a member in diverse teams

CO5. Communicate effectively in public speaking in formal and informal situations.

CO-PO Mapping Table:

Course Outcomes	Program Outcomes								
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**
CO1	2	1	-	-	-	-	-	-	-
CO2	2	3	-	-	-	-	-	-	-
CO3	2	2	-	-	3	-	-	-	-
CO4	1	1	-	-	-	-	-	-	3
CO5	-	-	-	-	-	-	-	-	-
Course Correlation Mapping	**2**	**2**	**3**	**-**	**3**	**-**	**-**	**-**	**3**

Correlation Levels: 3: High; 2: Medium; 1: Low

COURSE CONTENT

Module 1: SELF-ESTEEM & SELF-IMPROVEMENT ***(09 Periods)***

Know Yourself – Accept Yourself; Self-Improvement: Plan to Improve - Actively Working to Improve Yourself- Exercises- case studies

Module 2: DEVELOPING POSITIVE ATTITUDES ***(09 Periods)***

How Attitudes Develop – Attitudes are Catching – Improve Your Attitudes – Exercises- case studies

Module 3 SELF-MOTIVATION & SELF-MANAGEMENT ***(09 Periods)***

Show Initiative – Be Responsible Self-Management; Efficient Work Habits – Stress Management – Employers Want People Who can Think – Thinking Strategies- Exercises- case studies

Module 4 GETTING ALONG WITH THE SUPERVISOR ***(09 Periods)***

Know your Supervisor – Communicating with your Supervisor – Special Communication with your Supervisor – What Should you Expect of Your Supervisor? – What your Supervisor expects
of you - Moving Ahead Getting Along with your Supervisor- Exercises- case studies

Module 5 WORKPLACE SUCCESS ***(09 Periods)***

First Day on the Job – Keeping Your Job – Planning Your Career – Moving Ahead- Exercises- case studies

Total Periods: 45

EXPERIENTIAL LEARNING

1. List out the self-improvements in you on the charts and explain in detail.
2. Discuss different famous personalities and their attitudes.
3. Describe different personalities with respect to self-motivation and self-management.
4. Imagine you are a supervisor and illustrate different special communications.
5. Assume and Interpret different experiences on the first day of your job.

RESOURCES

TEXTBOOK:

1 Harold R. Wallace and L. Ann Masters, *Personal Development for Life and Work*, Cengage Learning, Delhi, 10th edition Indian Reprint, 2011. (6th Indian Reprint 2015)

2 Barun K. Mitra, *Personality Development and Soft Skills,* Oxford University Press, 2011.

REFERENCE BOOKS:

1 K. Alex, *Soft Skills*, S. Chand & Company Ltd, New Delhi, 2nd Revised Edition,
2 Stephen P. Robbins and Timothy A. Judge, *Organizational Behaviour*, Prentice Hall, Delhi, 16th edition, 2014

VIDEO LECTURES:

1. https://www.youtube.com/watch?v=6Y5VWBLi1es
2. https://www.youtube.com/watch?v=H9qA3inVMrA

Web Resources:

1. https://www.universalclass.com/.../the-process-of-perso...
2. https://www.ncbi.nlm.nih.gov/pubmed/25545842
3. https://www.youtube.com/watch?v=Tuw8hxrFBH8