INTEGRAL UNIVERSITY, LUCKNOW

INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PHYSIOTHERAPY

MASTER OF PHYSIOTHERAPY
(MPT)
CARDIOPULMONARY

SYLLABUS

YEAR/ SEMESTER: I/I

Integral University, Lucknow
Department of Physiotherapy
Study and Evaluation Scheme

Program: MPT **Semester I**

S. No.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Max. Marks	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	PT501	Basic Health Science	DE	03	01	0	40	20	60	40	100	3:1:0	4
2	PT502	Advanced Electrotherapy and Electro diagnosis	Core	03	01	0	40	20	60	40	100	3:1:0	4
3	PT503	Research Methodology, Biostatistics	Core	03	01	0	40	20	60	40	100	3:1:0	4
4	PT504	Exercise Testing & Prescription	Core	03	01	0	40	20	60	40	100	3:1:0	4
5	PT505	Seminar on Clinical Issues	Core	00	03	0	50	50	100	00	100	0:3:0	3
PRACTICAL													
1.	PT506	Clinical Training	Core	00	00	14	50	50	100	00	100	0:0:7	7
Total				**12**	**07**	**14**	**260**	**180**	**440**	**160**	**600**	**26**	**26**

Program: MPT **Semester II**

S. No.	Course code	Course Title	Type of Paper	Period Per hr/week/sem			Evaluation Scheme				Max. Marks	Credit	Total Credits
				L	T	P	CT	TA	Total	ESE			
THEORIES													
1	PT507	Medical& Surgical Condition	DE	03	1	0	40	20	60	40	100	3:1:0	4
2	PT508	Biomechanics and Kinesiology-I	Core	03	1	0	40	20	60	40	100	3:1:0	4
3	PT509C	Physiotherapy-I	Core	03	1	0	40	20	60	40	100	3:1:0	4
PRACTICAL													
1.	PT510	Biomechanics and Kinesiology-I Lab	DE	00	00	02	50	50	100	00	100	0:0:1	1
2.	PT511C	Physiotherapy -I Lab	DE	00	00	02	40	20	60	40	100	0:0:1	1
3.	PT512	Seminar on Clinical Issues	Core	00	03	0	50	50	100	00	100	0:3:0	3
4.	PT513	Clinical Training	Core	00	00	14	50	50	100	00	100	0:0:7	7
Total				**9**	**06**	**18**	**310**	**230**	**540**	**160**	**700**	**24**	**24**

Integral University, Lucknow

Effective from Session: 2020-2021							
Course Code	**PT501**	**Title of the Course**	**BASIC HEALTH SCIENCES**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	Nil				
Course Objectives	Student will learn the principles, technique, and effects of different concepts of anatomy, physiology, pathology, pharmacology & radiology in the restoration of basic knowledge and also implementation of evidence based practical approach.						

Course Outcomes	
CO1	To provide the basic understanding of different Musculoskeletal structure like bone, muscles ligament and its microscopic structural design and differences and importance.
CO2	To making the students able to understand about the smallest functional unit of the human body, its electrophysiological response and membrane potential.
CO3	Making the students about the pathophysiological response of the body and mechanism action of immune system in different pathological condition.
CO4	The objective of this unit is to make the students able to understand about the pharmacokinetics and Pharmacodynamics response of different drugs and its uses and side effect.
CO5	To provide the optimal knowledge of different imaginary tool which is used to rule- out different anomalies related to musculoskeletal system.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	ANATOMY	1. Micro structure for various soft tissue structures like Ligaments, Muscle, bone, cartilage, articular cartilage tendon and disc. 2. Embryology (ossification of various bones). 3. Musculoskeletal anatomy of human body. 4. Joints and Its Classification	8	CO1
2	PHYSIOLOGY	1. Cell and its function. 2. Electrophysiology, Membrane potential. 3. Muscle Physiology, Contraction of skeletal muscle. 4. Effects of ageing.	8	CO2
3	PATHOLOGY	1. Immune system: Immune response, immunology and exercise, autoimmune diseases, isoimmune diseases. 2. Oncology. 3. Response to trauma, specific tissue injury. 4. Metabolic disorders. 5. Tuberculosis–musculoskeletal.	8	CO3
4	PHARMACOLOGY	1. Pharmacokinetics and Pharmacodynamics. 2. Anti-Anaemic, 3. Hormones, 4. Insulin, 5. Steroids, 6. Diuretics	8	CO4
5	RADIOLOGY	Basics of Imaging Techniques in Orthopaedic conditions 1. Ultrasonography, 2. X-rays, 3. CT Scan, 4. MRI scanning, 5. Bone Scan, 6. Dexa Scan	8	CO5

Reference Books:

1. Gray's Anatomy
2. Pharmacology in Rehabilitation. Ciccone
3. Clinical Anatomy – Snell
4. Boyd's Textbook of Pathology – A.C. Ritchie
5. Textbook of Medical Physiology - Guyton - Mosby.
6. Pathologic Basis of Diseases - Robbins, Kotran and Kumar - W.B. Saunders.

e-Learning Source:

1. https://youtu.be/Bt0aaxpDlTd8
2. https://youtu.be/Bt0axxrpDlTd8
3. https://youtu.be/hpwnnlr-ZHB0

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	-	-	-	1	1	-	1	-	-	-	3	3	1	1	-
CO2	3	3	-	-	-	1	1	-	1	-	-	-	3	3	1	1	-
CO3	3	3	3	1	2	2	1	1	1	-	-	-	2	3	1	1	-
CO4	-	-	2	-	2	2	2	-	-	-	-	-	1	2	2	-	-
CO5	2	3	3	1	3	3	1	-	-	-	-	1	3	3	2	-	-

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT501	Basic health sciences	√	√	√			√	√	3,4

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	**PT502**	**Title of the Course**	**ADVANCED ELECTROTHERAPY AND ELECTRODIAGNOSIS**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Student will learn the principles, technique, and effects of different electrotherapeutic and electro diagnostic modality in the restoration of physical function, its clinical implication and evidence based practical approach.						

Course Outcomes	
CO1	To understand about different electrotherapy modalities and uses of current for treatment of neuromusculoskeletal problem and its effect on different system.
CO2	To understand about the advancement of electrotherapy and its effect on neuromusculoskeletal and musculoskeletal rehabilitation.
CO3	To understand about different electrotherapy modalities which are used for diagnose and treat the problem related to the neuromusculoskeletal.
CO4	To deals with the recent advances which occur in electrotherapy like extracorporeal shock wave therapy and its future prospective.
CO5	To understand about the recent advances in electrotherapeutic modalities like pulsed and continuous diathermy, pulsed and continuous microwave diathermy, Ultrasonic Therapy, LASER, Thermotherapy, Cryotherapy, Infra-Red, etc.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	ELECTRO PHYSIOLOGY	1. Neurophysiology basis for application of therapeutic electricity. a) Nerve and muscle excitation induced by external applied stimulation b) Reflex activation and synaptic transmission, Excitation of alpha motor neurons. 2. Electrophysiology of pain and its management. Electrodiagnosis and electrotherapeutic instrumentation, Types of stimulation electrodes, Placement of electrodes Different components in diagnostic equipment's e.g., processor, amplifiers, processors, rectifiers, and display devices. Signal processor and amplification and filtering.	8	CO1
2	TENS ADVANCEMENT	1. Recent advances in application of TENS for neuromuscular and musculoskeletal rehabilitation. 2. Role of different electrotherapeutic modalities in management of pain and healing. Clinical decision making in the use of appropriate modality in neuromuscular, musculoskeletal, Neurological, cardiopulmonary, and sports conditions.	8	CO2
3	ELECTRO DIAGNOSIS	1. Electrical evaluation of nerve and muscle excitability. a) SD curve and chronaxie test b) Nerve conduction test Motor nerve conduction-Motor nerve conduction, Sensory nerve conduction, H-reflex response, Evoked potential tests (Somatosensory evoked potentials, Visual evoked potentials and Auditory evoked potentials) Electromyography and bio-feedback) Biophysical principles, Clinical considerations, Clinical application of musculoskeletal patients, Clinical application of neuromuscular patients. b) Role of E.M.G.B.F.B in sports training and rehabilitation. c) EMG- Normal, abnormal EMG and indications	8	CO3
4	ADVANCEMENT IN ELECTRICAL MODALITIES	1. Extracorporeal Shock Wave Therapy a) Biophysical and Biophysiological principals b) clinical application in musculoskeletal rehabilitation c) Future prospects of E.S.W.T. in musculoskeletal rehabilitation. 2. .F.E.S. in Rehabilitation a) Evidence based practice b) Clinical application 3. NMES and clinical applications: Disuse atrophy, ROM, Muscle re-education and facilitation, Spasticity management, Orthotic substitution, Gait training, Shoulder subluxation	8	CO4
5	ELECTRO THERAPEUTIC MODALITIES	1. Recent advances, critical evaluation and current status of different electrotherapeutic modalities like pulsed and continuous diathermy, pulsed and continuous microwave diathermy, Ultrasonic Therapy, LASER, Thermotherapy, Cryotherapy, Infra-Red, etc. In musculoskeletal, neuromuscular, sports and cardiovascular rehabilitation.	8	CO5

Reference Books:

1. Electrotherapy: Evidenced based Therapy by Sheila Kitchen.
2. Clinical Electrotherapy & Electrophysiological Testing by Andrew J Robinson.
3. Electrotherapy/; Evidenced based practice by Tim Watson.
4. Physical Agents in Rehabilitation – Cameron.

e-Learning Source:

1. https://youtu.be/Bt0aaxpDlTd8
2. https://youtu.be/Bt0axxrpDlTd8
3. https://youtu.be/hpwnnlr-ZHB0
4. https://youtu.bee/KHvfdKyw2I8

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	3	1	2	1	-	-	-	-	3	1	3	2	2
CO2	3	3	3	3	3	2	3	1	-	-	-	-	3	1	3	2	2
CO3	3	3	3	3	3	3	3	1	-	-	-	-	3	1	3	2	2
CO4	3	3	3	3	3	3	3	1	-	-	-	-	3	1	3	2	2
CO5	3	3	3	3	3	3	3	3	-	-	-	-	3	3	3	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT502	ADVANCED ELECTROTHERAPY AND ELECTRODIAGNOSIS	√	√	√			√	√	3,4, 9

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	**PT503**	**Title of the Course**	**RESEARCH METHODOLOGY & BIOSTATISTICS**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Student will learn the research methodology, research problem, design, estimation and calculation of sample size, qualitative and research analysis, data analysis.						

Course Outcomes	
CO1	Outcome of this unit deals with the research methodology, research problem, design, measurement and scaling technique.
CO2	Outcome of this unit to making the students understands about research ethics, how to write a research proposal choosing and developing research question.
CO3	Outcome of this unit facilitates the students about writing thesis & journal article, presenting research and attending a scientific conference.
CO4	Outcome of this unit is to making students able about the processing and analysis of data and interpretation, testing of hypothesis etc.
CO5	Outcome of this unit is to making the students able about estimation and calculation of sample size, qualitative and research analysis, data analysis etc.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	RESEARCH	1. An introduction to research methodology. 2. Defining the research problem. 3. Review of literature/use of IT & Database for ROL. 4. Research Design–Experimental & Non-experimental. 5. Measurement and scaling techniques. 6. Methods of data collection. Sampling. 7. Level of evidence.	8	CO1
2		1. Research ethics. 2. Writing proposal, writing in scientific style. 3. Use of animals in research. 4. Critiquing article. 5. Choosing & Developing Research question. 6. Presenting research Proposal. 7. Applying for research funding.	8	CO2
3		1. Writing thesis & journal article. 2. Presenting research. 3. Attending a scientific conference. 4. Preparing a conference poster. 5. Guidelines for development/ refinement, evaluation and use of assessment tools (including attitude scales): scoring, administering tests & critiquing tools. Research in rehabilitation.	8	CO3
4	BIOSTATISTICS	1. Types of data, collection, representation, measure of central tendency, variation, and association. 2. Processing and analysis of data and Interpretation. 3. Testing of hypothesis (parametric or standard tests of hypotheses, non parametric or distribution-free tests). 4. Statistical analysis for differences and correlation: Basic, Advanced special technique. 5. Analysis of variance and covariance. 6. Multivariate analysis techniques.	8	CO4
5		1. Sample size estimation and power calculation. 2. Qualitative analysis. 3. Rasch analysis. 4. Software use for data analysis – STATA, SPSS etc. 5. Repertory grid analysis and its application to health care research. 6. Delphi technique (to arrive at a consensus of professional opinion on any given topic).	8	CO5

Reference Books:

1. Handbook of Research in Physical Therapy, by C. E. Bork
2. Physical Therapy Research: Principles and Application, by E. Domholdt
3. Research Methodology for Physical Therapists, by C. Hicks
4. Professionalism in Physical Therapy by Swisher
5. Introduction to Research in Health Sciences, by Stephen Polgar

e-Learning Source:

5. https://youtu.be/Bt0aaxpDlTd8
6. https://youtu.be/Bt0axxrpDlTd8
7. https://youtu.be/hpwnnlr-ZHB0
8. https://youtu.be/KHvfdKyw2I8

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	1	2	2	2	2	3	3	3	-	2	-	2	1	3	3	3
CO2	1	1	2	2	2	2	3	3	3	-	2	-	2	1	3	3	3
CO3	1	1	2	2	2	2	3	3	3	-	2	-	2	1	3	3	3
CO4	1	1	2	2	2	2	3	3	3	-	2	-	2	1	3	3	3
CO5	1	1	2	2	2	2	3	3	3	-	2	-	2	1	3	3	3

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT503	RESEARCH METHODOLOGY & BIOSTATISTICS	√	√	√					4,9

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	**PT504**	**Title of the Course**	**EXERCISE TESTING AND PRESCRIPTION**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will able to understand and make decision on exercise testing and prescription at different rehabilitation set up for diagnostic, prognostic & therapeutic outcome.						

Course Outcomes	
CO1	The student understand exercise testing in different set up as a diagnostic, prognostic & therapeutic and of various exercise over Cardiorespiratory & usculoskeletal system.
CO2	The students understand various test associated with pulmonary disorder and interpretation to design the tailored exercise protocol and to understand how different body composition affects the human performance.
CO3	The students learn the various effect of exercise on different body system and learn the basic principle of different exercise program which helps them in achieving good physical fitness.
CO4	The student learn to understand about the various arthritis condition along with the different principles governs the exercise program and enlighting the health behavior program and the various channels affecting exercise program.
CO5	The student understand about the problem associated with Health care industries which covers staff and operating system in designing the various program under an umbrella of different policies & legal aspect for safety in operating health clinics.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	LIFESTYLE FACTORS ASSOCIATED WITH HEALTH AND DISEASE	1. Factors associated with increased risk of Coronary Heart Disease. 2. General overview of Pre-participation Health screening and risk assessment. 3. Physical Activity Assessment. 4. Relationship of Nutrition to Chronic Diseases. 5. Assessment of Dietary Intake. 6. The Influence of Emotional Distress on Chronic Illness.	8	CO1
2	PHYSICAL FITNESS, CLINICAL, AND DIAGNOSTIC ASSESSMENTS	1. Body Composition. 2. Muscular Fitness. 3. Clinical Exercise Testing related to Cardiovascular Disease. 4. Assessment and Limitations Associated with Pulmonary Disease. 5. Exercise Testing in Patients with Diabetes. 6. Clinical Exercise Testing in Individuals with Disabilities Due to Neuromuscular Disorders.	8	CO2
3	EXERCISE PRESCRIPTION, EXERCISE PROGRAMMING AND ADAPTATIONS TO EXERCISE TRAINING	1. Cardiopulmonary Adaptations to Exercise. 2. Adaptations to Resistance Training. 3. Principles of Cardiorespiratory Endurance Programming. 4. Principles of Musculoskeletal Exercise Programming. 5. Weight Management. 6. Medical Considerations.	8	CO3
4	EXERCISE TESTING AND TRAINING FOR INDIVIDUALS WITH CHRONIC DISEASE	1. Exercise Training in Patients with Cardiovascular Disease. 2. Treatment and Rehabilitation of Pulmonary Diseases. 3. Exercise in patients with end stage Renal Disease. 4. Osteoporosis and Exercise. 5. Arthritis Diseases and Conditions. 6. Neuromuscular Diseases and Exercise.	8	CO4
5	HUMAN BEHAVIOURAL PRINCIPLES APPLIED TO PHYSICAL ACTIVITY	1. Principles of Health Behaviour Change 2. Channels for Delivering Behavioral Programs 3. Factors Associated with Regular Physical Activity Participation 4. Behavioral Strategies to Enhance Physical Activity Participation 5. Health Counseling Skills	8	CO5

Reference Books:

1. Exercise Testing & Prescription by David C. Neiman, Mc. Graw Hill.
2. Exercise training and exercise prescription for special cases. Theoretical basis and clinical application by James A. Skinner, Lippincott Williams and Wilkins.

e-Learning Source:

1. https://youtu.be/Bt0aaxpDlTd8
2. https://youtu.be/Bt0axxrpDlTd8
3. https://youtu.be/hpwnnlr-ZHB0
4. https://youtu.bee/KHvfdKyw2I8

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	2	2	2	2	1	-	2	-	-	-	1	1	1	2	2
CO2	3	3	3	3	3	2	2	1	2	-	-	-	3	3	2	1	2
CO3	3	3	3	2	2	2	2	1	1	-	-	-	2	1	3	3	2
CO4	1	1	2	1	2	2	2	1	2	-	-	-	3	1	1	1	3
CO5	1	1	1	1	1	1	1	2	2	2	1	3	1	1	1	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT504	EXERCISE TESTING AND PRESCRIPTION	√	√	√	√		√	√	3,4,9

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT505**	**Title of the Course**	**SEMINAR ON CLINICAL ISSUES**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	0	3	0	3
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	This course will serve as a platform for students to integrate various components of patient management and debate contentious issues in the efficacy of Physiotherapy techniques used in musculoskeletal, neurological, cardiopulmonary, & Sports rehabilitation as well as enhance presentation skills.						

Course Outcomes	
CO1	The students will understand and interpret latest advancements through different technical papers, reports, Journals, Data sheets, books etc
CO2	The students will inculcate the skills for literature survey and will learn to manage resources effectively.
CO3	The students will be able to summarize the recent research and technologies in the form of review and will be able to deliver power pointpresentations on an assigned topic.
CO4	The students will be able to communicate his/her ideas with his peers as audience, which will enhance both oral and written communicationskills.
CO5	The students will be able to create interest to pursue lifelong learning.

SEMINAR PRESENTATION ASSESSMENTN FORM

Name of Student:		**Session:**	2022-23
Enrollment Number:		**Date:**	
Name of Subject:	Seminar on Clinical Issues	**Subject code:**	PT505
Topics:			

Criteria	Sub-Criteria	Max. Marks	Marks Obtained
Introduction (Max marks-09)	Use appropriate background information	03	
	Has clear statement of purpose	03	
	Shows a logical sequence	03	
Factual Content (Max marks- 21)	Includes accurate information	03	
	Shows up-to-date content	03	
	Presents relevant content	03	
	Shows in-depth and sufficient details	03	
	Addresses all important issues	03	
	Is selective	03	
	Use of proper English Grammar in the text	03	
Presentation Quality (Max marks-06)	Has a good design of presentation (appropriate font, type, size, color, matter per slide etc.)	03	
	Has a clear verbal expression and eye contact with audience	03	
Response to questions (Max marks-09)	Answers question(s) correctly	03	
	Has the ability to think on the spot	03	
	Shows an ability to defend content of presentation	03	
Time Management (Max. mark-05)	Completes the presentation within allocated time	05	
	Total Marks	50	

Note: In case of Oral Presentation, each student will be assessed in a 20 minutes time (15 min for presentation & 5 min for discussion) out of 50 marks.

Comments/Suggestions:

(Name and signature of Incharge) **(Head, Physiotherapy)**

EVALUATION OF SEMINAR ON CLINICAL ISSUES PRESENTATION

MPT- Students has to prepare minimum 2 long case and 2 short cases during their seminar presentation during due course of time. The evaluation for internal seminar examination of 100 marks will be distributed:

Cases during clinical posting=**45 marks**.

Viva voce =**50 marks**

Attendance=**5 marks**

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
PT505	**SEMINAR ON CLINICAL ISSUES**	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√			√	√	**3,4,9, 17**

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT506**	**Title of the Course**	**CLINICAL POSTING**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**I**	0	0	14	7
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will engage in clinical practice in Physiotherapy departments in the musculoskeletal, neurology, cardiopulmonary, sports settings to enhance their clinical skills and apply contemporary knowledge gained during teaching sessions.						

Course Outcomes	
CO1	To learn the punctuality and interaction with colleague and supporting staff during clinical training.
CO2	To develop assessment skills.
CO3	To develop appropriate treatment protocol.
CO4	To understand the importance of documentation of the case record and case presentation.
CO5	To develop discipline and improve overall quality of clinical work.

CLINICAL POTING ASSESSMENTN FORM

Name of Student:		**Session:**	
Enrolment Number:		**Date:**	
Name of Subject:	Clinical Posting	**Subject code:**	PT506
Topics:			

S. No.	Point to be Considered	Max. Marks	Marks Obtained
1.	Punctuality	5	
2.	Interaction with colleagues and supporting staff	5	
3.	Maintenance of case records	5	
4.	Presentation of case during rounds	5	
5.	Investigation work up	5	
6.	Bedside Manners	5	
7.	Rapport with patients	5	
8.	Treatment approach & technique	5	
9.	Discipline	5	
10.	Overall quality of clinical work	5	
	TOTAL SCORE	**50**	

(Name and signature of Incharge) **(Head, Physiotherapy)**

GUIDELINES FOR CLINICAL TRAINING PROGRAM

The students of Post Graduate Physiotherapy program must spend above mentioned allotted time period in the hospital based clinical training for specified clinical experiences to meet the objectives of the training program. This period of practical and theoretical experience will enable the students to acquire competency and experience to perform as an independent practice and will enable to adjust to the real practical life in different units in the hospital settings.

S.No.	Program Name	Year/Semester	Duration of Training
1.	MPT	Ist Year/ Ist Semester	4 Months
2.		Ist Year/ IInd Semester	4 Months
3.		IInd Year/ 3rd Semester	4 Months
4.		IInd Year/ 4th Semester	4 Months

By the successful completion of this clinical training period, the student is expected to fulfil the objectives of the program and will be examination as given below:

S.No.	Program Name	Year/Semester	Case file	Practical on Case	Voice/Viva	Attendance
1.	MPT	Ist Year/ Ist Semester	20 Marks	25 Marks (1 Long Case and 2 Short Case)	50 Marks	5 Marks
2.		Ist Year/ IInd Semester				
3.		IInd Year/ 3rd Semester				
4.		IInd Year/ 4th Semester				

EVALUATION OF CLINICAL POSTING

MPT- Students has to prepare 1 long case and 2 short cases during their clinical posting. The evaluation for internal clinical examination of 100 marks will be distributed:

Cases during clinical posting=**45 marks**.

Viva voce =**50 marks**

Attendance=**5 marks**

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
PT506	**CLINICAL POSTING**	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	**3,4,11**

INTEGRAL UNIVERSITY, LUCKNOW

INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH

DEPARTMENT OF PHYSIOTHERAPY

MASTER OF PHYSIOTHERAPY
(MPT)
CARDIOPULMONARY

SYLLABUS

YEAR/ SEMESTER: I/II

Integral University, Lucknow

Effective from Session: 2022-2023							
Course Code	**PT507**	**Title of the Course**	**MEDICAL & SURGICAL CONDITION**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will be able to know and revise the basic concept muscloskeletal, neurological, cardiopulmonary, sports and their diagnostic concepts.						

Course Outcomes	
CO1	To know the basic concept of disorder and condition of muscloskeletal conditions.
CO2	To know the basic concept of disorder and condition of neurological conditions.
CO3	To know the basic concept of disorder and condition of cardiopulmonary conditions.
CO4	To know the basic concept of disorder and condition of sports conditions.
CO5	To know the basic concept of disorder or condition of on the basis of diagnostic tolls.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	MUSCULOSKELETAL TRAUMA & DISORDERS	1. Brief about Trauma of the Upper Limb, Trauma of the Lower Limb, Trauma of the Spine. 2. Brief about Disorders of the Upper Lim, Disorders of the Lower Limb, Disorders of the Spine. 3. Brief about Metabolic Disorders of the Bone. 4. Brief about bone tumors.	8	CO1
2	NEUROLOGICAL TRAUMA & DISORDERS	1. Brief about Traumatic injury of brain & spinal cords. 2. Brief about Traumatic injury of upper limb and lower limb nerve. 3. Brief about disease of brain, spinal cord and nerves. 4. Brief about disease neuromuscular disorders.	8	CO2
3	CARDIOVASCULAR TRAUMA & DISORDERS	1. Brief about Obstructive Pulmonary Diseases, restrictive Pulmonary Diseases. 2. Brief about cardiovascular disorders. 3. Brief about cardiovascular disease of new born and children. 4. Brief about cardiothoracic surgeries'.	8	CO3
4	SPORTS INJURIES	1. Brief about common sports injuries (contact & non contact) of upper limb & lower limb. 2. Brief about common sports injuries of head, spine chest and abdomen. 3. Brief about Female athletes & their special concerns. 4. Brief about disabled athletes and their special concerns.	8	CO4
5	LABORATORY, IMAGING AND ELECTRO DIAGNOSTIC STUDIES	1. Laboratory and imaging studies used in musculoskeletal disease and trauma. 2. Laboratory, imaging studies and electro diagnostic studies used in neurological disease and trauma. 3. Laboratory and imaging studies used in cardiopulmonary disease. 4. Laboratory and imaging studies used in sports injuries.	8	CO5

Reference Books:

1. Current Diagnosis & treatment in Orthopaedics by Harry Skinner
2. Essential of Musculoskeletal Care by Walter Green
3. Orthopaedics Imaging A Practical Approach by Adam Greenspan
4. Principles of Neurology; Adam & Victor
5. Brain's Clinical Neurology. R Bannister
6. . Saunder's Mannual for Neurologic Practice. Randolf Evans, Elsevier
7. Starkey, C., & Ryan, J. L. Evaluation of Orthopedic and Athletic Injuries; F. A. Davis.
8. Arnheim, D. D, & Prentice, W. E. Principles of Athletic Training, 10th Ed. Brown & Benchmark.
9. Principles and Practice of Medicine. Davidson

e-Learning Source:

4. https://youtu.be/Bt0aaxpDlTd8
5. https://youtu.be/Bt0axxrpDlTd8
6. https://youtu.be/hpwnnlr-ZHB0

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	-	-	-	1	1	-	1	-	-	-	3	3	1	1	-	3
CO2	3	3	-	-	-	1	1	-	1	-	-	-	3	3	1	1	-	3
CO3	3	3	3	1	2	2	1	1	1	-	-	-	2	3	1	1	-	3
CO4	-	-	2	-	2	2	2	-	-	-	-	-	1	2	2	-	-	-
CO5	2	3	3	1	3	3	1	-	-	-	-	1	3	3	2	-	-	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT507	MEDICAL & SURGICAL CONDITION	√		√			√	√	3,4

Integral University, Lucknow

Effective from Session: 2015-2016							
Course Code	**PT508**	**Title of the Course**	**BIOMECHANICS AND KINESIOLOGY-I**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will be able to identify and apply principles of biomechanics while setting up individualized treatment protocols. Following are the topics to be included but not limited to:						

Course Outcomes	
CO1	Students must know about the concepts fundamental of mechanics and its implementation on human body.
CO2	Students must know about the concepts kinematics and kinetics and its implementation on human body.
CO3	Students must know about the concepts joint mechanics and its implementation on human body.
CO4	Students must know about the concepts Muscles, Ligament & Tendon Mechanics and its implementation on human body.
CO5	Students must know about the concepts measurement instruments and its implementation on human body.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	FUNDAMENTAL MECHANICS	1. Forces, Moments, Newton's Laws, Force Systems, Composition and Resolution of Forces, Static Equilibrium, Dynamic Equilibrium, Levers & its application, Pulley Systems, Density & Mass, Segmental Dimensions, Stress and Strain, Modulus of Rigidity and Modulus of Elasticity, Poisson's Effect, Strain Energy, Static and Cyclic Load Behaviours, Load, Load Sharing and Load Transfer. 2. Mechanical Energy, Work & Power: Definitions, Positive and Negative Work of Muscles, Muscle Mechanical Power, Causes of Inefficient Movement, Co- Contractions, Isometric Contraction against Gravity, Jerky Movement, Energy generation at one Joint and Absorption at another, Energy Flow, Energy Storage	8	CO1
2	KINEMATICS & KINETICS	1. Kinematics: Types of Motion, Location of Motion, Magnitude of Motion, Direction of Motion, Angular Motion and Its Various Parameters, Linear Motion and Its Various Parameters, Projectile Motions. 2. Kinetics: Definition of Forces, Force Vectors, Naming of Force, Force of Gravity & COG, Stability, Reaction Forces, Equilibrium, Linear Forces System, Friction and Its Various Parameters, Parallel Force Systems, Concurrent Force Systems, Work Powers & Energy, Moment Arms of Force, Force Components, Equilibrium of Force	8	CO2
3	JOINT MECHANICS	1. Joint Mechanics: Joints and its classification, Joint Design, Joint Categories, Joint Functions, Arthrokinematics, Osteokinematics, Kinematic Chain, Joint Forces, Equilibrium & Distribution of These Forces, Degenerative Changes in Weight Bearing Joints & Compensatory Actions, Joint Stability & Its Mechanisms, Clinical Applications.	8	CO3
4	MUSCLES, LIGAMENT & TENDON MECHANICS	1. Structure & Composition of Muscle, Fiber Length & Cross Section Area, Mechanical Propertied, EMG Changes during Fatigue & Contraction, Changes in Mechanical Properties because of Ageing and Exercised & Immobilization, Clinical Applications of mechanics. Structure and Composition, Mechanical Properties, Cross Sectional Area Measurements, Muscle Tendon Properties, Temperature Sensitivity, Changes in Mechanical Properties because of Aging, Exercise and Immobilization, Mechanoreceptors, & Clinical Applications.	8	CO4
5	MEASUREMENT INSTRUMENTS	1. Goniometer, Accelerometer, Photo Optical Devices, Pressure Transducers & Force Plates, Gait Analyzer, Isokinetic Device, EMG, Electrophysiology of Muscle Contraction, Recording Processing, Relationship between EMG and Biomechanical Variables.	8	CO5

Reference Books:

1. Biomechanics & Clinical Kinesiology-Cynthia Norkin
2. Basic Biomechanics. Nordins.
3. Basic Biomechanics & clinical Kinesiology. Otis
4. Biomechanics of Human Movement. D Winter
5. Kinesiology: Application to Pathological Motion. GL Soderberg
6. Brunnstrom's Clinical Kinesiology. LK Smith, EL Weiss, LD Lehmkuhl

e-Learning Source:

1. https://www.youtube.com/watch?v=yoY9bYQOX8Q
2. https://www.youtube.com/watch?v=WoJyS7Nww38
3. https://www.youtube.com/watch?v=5LAmgw2tVDo
4. https://www.youtube.com/watch?v=JS06rSzWsYM
5. https://www.youtube.com/watch?v=rxX6Z1rv7TE

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	1	1	1	1	1	2	2	-	-	-	-	3	1	1	2	1
CO2	3	3	2	2	2	2	2	2	-	-	-	-	3	1	1	2	1
CO3	2	3	3	1	2	2	1	1	-	-	-	-	3	3	2	2	1
CO4	3	3	3	1	2	2	1	1	-	-	-	-	3	3	2	2	1
CO5	3	2	3	3	2	2	2	3	-	-	-	-	3	3	2	1	1

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT508	**BIOMECHANICS AND KINESIOLOGY-I**	√	√	√			√	√	**3,4,9**

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT509C**	**Title of the Course**	**PHYSIOTHERAPY-I (PRINCIPLES AND PRACTICE IN CARDIOPULMONARY PHYSIOTHERAPY)**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	3	1	0	4
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	1. After a review of the latest theories of cardiopulmonary conditions, and recovery of function, students are provided with a conceptual framework for clinical practice and a practical framework for understanding and examining Impairments in patients with cardiopulmonary conditions deficits. 2. Armed with a solid foundation, students then build a thorough understanding of motor control issues as they relate to Posture and balance, mobility, and upper extremity function. For each of these three key areas, the authors discuss normal control processes, age-related issues, abnormal function, and the clinical applications of current research.						

Course Outcomes	
CO1	An overview of Cardiopulmonary anatomy & Physiology: Understanding and importance of cardiopulmonary anatomy and physiology about structure, course and function of alveoli, different tracts of respiratory pathways and regulations of cardiopulmonary system.
CO2	Congenital & Childhood Disorders: Understanding about etiology, clinical presentation and management of congenital & pediatric disease of cardiopulmonary conditions.
CO3	Pulmonary conditions: Understanding about etiology, clinical presentation and management of respiratory & infectious disease of pulmonary system & its complications.
CO4	Diseases of the Cardiopulmonary system and its management: Understanding about etiology, clinical presentation and management of Cardiopulmonary & neuromuscular diseases.
CO5	Cardiothoracic Surgery: Understanding about traumatic injury of lungs and Heart with its complication and their management.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL PRINCIPLES	1. P.T. Assessment2. Mobilization and Exercises (Strengthening, Conditioning and Endurance)3. Applying and Evaluating Bronchial Hygiene Therapy 4. Techniques for Facilitating Ventilatory Pattern 5. Respiratory Muscle Training	8	CO1
2	ASSESSMENT & TECHNIQUES	1. Ventilator2. Humidification and Aerosol Therapy3. Physiotherapy in the Intensive Care Unit4. Respiratory Therapy Equipment and Adjuncts to Cardiopulmonary Therapy5. Body Positioning6. Airway Clearance Techniques **a)**Postural Drainage **b)**Forced Expiratory Techniques **c)**Breathing Exercises, Percussion and Vibration	8	CO2
3	PT MANAGEMENT IN SPECIFIC CONDITIONS	1. Congenital Heart Disease2. Cardiomyopathy3. Peripheral Vascular Disease4. Diseases of the Pleura5. Obstructive Pulmonary Diseases, Restrictive Pulmonary Diseases6. Interstitial and Infiltrative Pulmonary Disorders7. Pulmonary Disorders Due To Systemic Inflammatory Disease, Pulmonary Vascular Diseases.	8	CO3
4	PT MANAGEMENT IN SPECIFIC CONDITIONS	1. Respiratory Failure.2. Supplemental Oxygen and Oxygen Delivery Devices in Chronic Respiratory Disease.3. Pathophysiology of Paralytic-Restrictive Pulmonary Syndromes.4. Pre and Post Operative Blood Gas Exchange.5. Hemodynamic Performance of CTVS Patients.6. Heart Transplant	8	CO4
5	EXERCISE TESTING	**1. Pre-test clinical evaluation a)** Medical history, physical examination, and laboratory tests, Alternative stress tests. **b)** Blood pressure **c)** Cholesterol and lipoproteins, Blood profile analyses **d)** Pulmonary function test. **e)**Contraindication of exercise testing **2. Physical fitness testing and interpretation**-a)Purpose of fitness testing b)Basic principles and guidelines c)Body composition Analysis **3. Cardiopulmonary fitness**-a)Concept of maximal oxygen uptake **b)** Maximal verses submaximal exercise testing c) Modes of testing, Test termination criteria d) Cardiopulmonary test sequence and measures	8	CO5

Reference Books:

1. Principles and Practice of Cardiopulmonary Physiotherapy. D Frown felter, E Dean
2. Respiratory Care. Shapiro
3. Clinical Practice in Respiratory Care. J Fink, Ge Hunt
4. Physiotherapy for Respiratory and Cardiac Problems. J Pryor, A Prasad
5. Cardiopulmonary Physical Therapy. S Irwin, Sadowsky
6. Chest Physiotherapy in the ICU. Mackenzie

e-Learning Source:

1. https://drive.google.com/file/d/0B_08Lwl4o5HOdjJUUnRoUHR4SGM/view?usp=drive_web&resourcekey=0-Pdbp9xSEX3TDzzEA8nhncg&authuser=0
2. https://youtu.be/Bt0axxrpDlTd8

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
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CO2	2	2	3	3	3	2	3	2	-	-	-	-	3	3	1	2	1
CO3	3	3	3	3	3	3	2	1	1	-	-	1	3	3	1	2	2
CO4	3	3	3	3	3	3	2	1	1	-	-	1	3	3	1	2	2
CO5	2	3	3	3	2	1	3	2	2	-	1	-	3	3	1	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
PT509C	PHYSIOTHERAPY-I C	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	3,4

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT510**	**Title of the Course**	**BIOMECHANICS AND KINESIOLOGY-I LAB**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	0	0	2	1
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will be able to identify and apply principles of biomechanics while setting up individualized treatment protocols. Following are the topics to be included but not limited to. This involves application of topics in demonstrations, field visits and case presentations						

Course Outcomes	
CO1	Students must know about the concepts fundamental of mechanics and its implementation on human body.
CO2	Students must know about the concepts kinematics and kinetics and its implementation on human body.
CO3	Students must know about the concepts joint mechanics and its implementation on human body.
CO4	Students must know about the concepts Muscles, Ligament & Tendon Mechanics and its implementation on human body.
CO5	Students must know about the concepts measurement instruments and its implementation on human body.

Unit No.	**Title of the Unit**	**Content of Unit**	**Contact Hrs.**	**Mapped CO**
1	FUNDAMENTAL MECHANICS	Practical Demonstration of fundamental mechanics & their application in human body.	6	CO1
2	KINEMATICS & KINETICS	Practical Demonstration of kinematics & kinetics & their application in human body.	4	CO2
3	JOINT MECHANICS	Practical Demonstration of joint mechanics & their application in human body.	4	CO3
4	MUSCLES, LIGAMENT & TENDON MECHANICS	Practical Demonstration of muscles, ligament & tendon mechanics & their application in human body.	6	CO4
5	MEASUREMENT INSTRUMENTS	Practical Demonstration of measurement instruments used in biomechanical aspects & their application in human body.	4	CO5

Reference Books:

Reference Books:

7. Biomechanics & Clinical Kinesiology-Cynthia Norkin
8. Basic Biomechanics. Nordins.
9. Basic Biomechanics & clinical Kinesiology. Otis
10. Biomechanics of Human Movement. D Winter
11. Kinesiology: Application to Pathological Motion. GL Soderberg

e-Learning Source:

6. https://www.youtube.com/watch?v=yoY9bYQOX8Q
7. https://www.youtube.com/watch?v=WoJyS7Nww38
8. https://www.youtube.com/watch?v=rxX6Z1rv7TE

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	2	1	1	1	1	2	1	-	-	-	-	3	1	1	1	1
CO2	3	3	2	1	2	2	1	2	-	-	-	-	2	1	1	2	1
CO3	2	3	3	1	2	2	1	1	-	-	-	-	3	3	2	2	1
CO4	2	3	2	1	2	2	2	1	-	-	-	-	2	3	2	2	1
CO5	2	2	3	3	2	3	2	3	-	-	-	-	2	3	2	1	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	**Course Title**	**Attributes**							**SDGs No.**
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT510	BIOMECHANICS AND KINESIOLOGY-I LAB	√	√	√			√	√	**3,4,9**

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT511C**	**Title of the Course**	**PHYSIOTHERAPY-I LAB (PRINCIPLES AND PRACTICE IN CARDIOPULMONARY PHYSIOTHERAPY)**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	0	0	4	2
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	1. After a review of the latest theories of cardiopulmonary conditions, and recovery of function, students are provided with a conceptual framework for clinical practice and a practical framework for understanding and examining Impairments in patients with cardiopulmonary conditions deficits. 2. Armed with a solid foundation, students then build a thorough understanding of motor control issues as they relate to Posture and balance, mobility, and upper extremity function. For each of these three key areas, the authors discuss normal control processes, age-related issues, abnormal function, and the clinical applications of current research.						

Course Outcomes	
CO1	An overview of Cardiopulmonary anatomy & Physiology: Understanding and importance of cardiopulmonary anatomy and physiology about structure, course and function of alveoli, different tracts of respiratory pathways and regulations of cardiopulmonary system.
CO2	Congenital & Childhood Disorders: Understanding about etiology, clinical presentation and management of congenital & pediatric disease of cardiopulmonary conditions.
CO3	Pulmonary conditions: Understanding about etiology, clinical presentation and management of respiratory & infectious disease of pulmonary system & its complications.
CO4	Diseases of the Cardiopulmonary system and its management: Understanding about etiology, clinical presentation and management of Cardiopulmonary & neuromuscular diseases.
CO5	Cardiothoracic Surgery: Understanding about traumatic injury of lungs and Heart with its complication and their management.

Unit No.	Title of the Unit	Content of Unit	Contact Hrs.	Mapped CO
1	GENERAL PRINCIPLES	Practical demonstration and clinical application of: Assessment, Mobilization and Exercises (Strengthening, Conditioning and Endurance), Applying and Evaluating Bronchial Hygiene Therapy, Techniques for Facilitating Ventilatory Pattern, Respiratory Muscle Training	8	CO1
2	ASSESSMENT & TECHNIQUES	Practical demonstration and clinical application of: Ventilator, Humidification and Aerosol Therapy, Physiotherapy in the Intensive Care Unit, Respiratory Therapy Equipment and Adjuncts to Cardiopulmonary Therapy, Body Positioning, Airway Clearance Techniques.	8	CO2
3	PT MANAGEMENT IN SPECIFIC CONDITIONS	Practical aspect of assessment and clinical application of following diseases: Congenital Heart Disease, Cardiomyopathy, Peripheral Vascular Disease, Diseases of the Pleura, Obstructive Pulmonary Diseases, Restrictive Pulmonary Diseases, Interstitial and Infiltrative Pulmonary Disorders, Pulmonary Disorders Due To Systemic Inflammatory Disease, Pulmonary Vascular Diseases.	8	CO3
4	PT MANAGEMENT IN SPECIFIC CONDITIONS	Practical aspect of assessment and clinical application of following diseases: Respiratory Failure, Supplemental Oxygen and Oxygen Delivery Devices in Chronic Respiratory Disease, Pathophysiology of Paralytic-Restrictive Pulmonary Syndromes,. Pre and Post Operative Blood Gas Exchange, Hemodynamic Performance of CTVS Patients, Heart Transplant.	8	CO4
5	EXERCISE TESTING	Practical demonstration of Pre-test clinical evaluation, Physical fitness testing and interpretation & Cardiopulmonary fitness	8	CO5

Reference Books:

1. Principles and Practice of Cardiopulmonary Physiotherapy. D Frown felter, E Dean
2. Respiratory Care. Shapiro
3. Clinical Practice in Respiratory Care. J Fink, Ge Hunt
4. Physiotherapy for Respiratory and Cardiac Problems. J Pryor, A Prasad
5. Cardiopulmonary Physical Therapy. S Irwin, Sadowsky
6. Chest Physiotherapy in the ICU. Mackenzie

e-Learning Source:

1. https://drive.google.com/file/d/0B_08Lwl4o5HOdjJUUnRoUHR4SGM/view?usp=drive_web&resourcekey=0-Pdbp9xSEX3TDzzEA8nhncg&authuser=0
2. https://youtu.be/Bt0axxrpDlTd8

Course Articulation Matrix: (Mapping of COs with POs and PSOs)

PO-PSO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
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CO2	2	2	3	3	3	2	3	2	-	-	-	-	2	3	1	2	1
CO3	3	2	3	3	2	3	2	1	1	-	-	1	3	2	1	1	2
CO4	3	3	3	3	3	3	2	1	1	-	-	1	2	3	1	2	2
CO5	2	3	3	3	2	1	3	2	2	-	1	-	3	3	1	2	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT511C	**PHYSIOTHERAPY-I LAB (C)**	√	√	√			√	√	**3,4**

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT512**	**Title of the Course**	**SEMINAR ON CLINICAL ISSUES**	**L**	**T**	**P**	**C**
Year	**I**	**Semester**	**II**	0	3	0	3
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	This course will serve as a platform for students to integrate various components of patient management and debate contentious issues in the efficacy of Physiotherapy techniques used in musculoskeletal, neurological, cardiopulmonary, & Sports rehabilitation as well as enhance presentation skills.						

Course Outcomes	
CO1	The students will understand and interpret latest advancements through different technical papers, reports, Journals, Data sheets, books etc
CO2	The students will inculcate the skills for literature survey and will learn to manage resources effectively.
CO3	The students will be able to summarize the recent research and technologies in the form of review and will be able to deliver power pointpresentations on an assigned topic.
CO4	The students will be able to communicate his/her ideas with his peers as audience, which will enhance both oral and written communicationskills.
CO5	The students will be able to create interest to pursue lifelong learning.

SEMINAR PRESENTATION ASSESSMENTN FORM

Name of Student:		**Session:**	
Enrollment Number:		**Date:**	
Name of Subject:	Seminar on Clinical Issues	**Subject code:**	PT512
Topics:			

Criteria	Sub-Criteria	Max. Marks	Marks Obtained
Introduction (Max marks-09)	Use appropriate background information	**03**	
	Has clear statement of purpose	**03**	
	Shows a logical sequence	**03**	
Factual Content (Max marks- 21)	Includes accurate information	**03**	
	Shows up-to-date content	**03**	
	Presents relevant content	**03**	
	Shows in-depth and sufficient details	**03**	
	Addresses all important issues	**03**	
	Is selective	**03**	
	Use of proper English Grammar in the text	**03**	
Presentation Quality (Max marks-06)	Has a good design of presentation (appropriate font, type, size, color, matter per slide etc.)	**03**	
	Has a clear verbal expression and eye contact with audience	**03**	
Response to questions (Max marks-09)	Answers question(s) correctly	**03**	
	Has the ability to think on the spot	**03**	
	Shows an ability to defend content of presentation	**03**	
Time Management (Max. mark-05)	Completes the presentation within allocated time	**05**	
	Total Marks	**50**	

Note: In case of Oral Presentation, each student will be assessed in a 20 minutes time (15 min for presentation & 5 min for discussion) out of 50 marks.

Comments/Suggestions:

(Name and signature of Incharge) **(Head, Physiotherapy)**

EVALUATION OF SEMINAR ON CLINICAL ISSUES PRESENTATION

MPT- Students has to prepare minimum 2 long case and 2 short cases during their seminar presentation during due course of time. The evaluation for internal seminar examination of 100 marks will be distributed:

Cases during clinical posting=**45 marks**.

Viva voce =**50 marks**

Attendance=**5 marks**

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

1- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
PT512	SEMINAR ON CLINICAL ISSUES	Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
		√	√	√	√		√	√	**3,4,11**

Integral University, Lucknow

Effective from Session: 2015-16							
Course Code	**PT513**	**Title of the Course**	**CLINICAL POSTING**	**L**	**T**	**P**	**C**
Year	**II**	**Semester**	**III**	0	0	14	7
Pre-Requisite	**Nil**	**Co-requisite**	**Nil**				
Course Objectives	Students will engage in clinical practice in Physiotherapy departments in the musculoskeletal, neurology, cardiopulmonary, sports settings to enhance their clinical skills and apply contemporary knowledge gained during teaching sessions.						

Course Outcomes	
CO1	To learn the punctuality and interaction with colleague and supporting staff during clinical training.
CO2	To develop assessment skills.
CO3	To develop appropriate treatment protocol.
CO4	To understand the importance of documentation of the case record and case presentation.
CO5	To develop discipline and improve overall quality of clinical work.

CLINICAL POTING ASSESSMENTN FORM

Name of Student:		**Session:**	
Enrolment Number:		**Date:**	
Name of Subject:	Clinical Posting	**Subject code:**	PT513
Topics:			

S. No.	Point to be Considered	Max. Marks	Marks Obtained
1.	Punctuality	5	
2.	Interaction with colleagues and supporting staff	5	
3.	Maintenance of case records	5	
4.	Presentation of case during rounds	5	
5.	Investigation work up	5	
6.	Bedside Manners	5	
7.	Rapport with patients	5	
8.	Treatment approach & technique	5	
9.	Discipline	5	
10.	Overall quality of clinical work	5	
	TOTAL SCORE	**50**	

(Name and signature of Incharge) **(Head, Physiotherapy)**

GUIDELINES FOR CLINICAL TRAINING PROGRAM

The students of Post Graduate Physiotherapy program must spend above mentioned allotted time period in the hospital based clinical training for specified clinical experiences to meet the objectives of the training program. This period of practical and theoretical experience will enable the students to acquire competency and experience to perform as an independent practice and will enable to adjust to the real practical life in different units in the hospital settings.

S.No.	Program Name	Year/Semester	Duration of Training
5.	MPT	Ist Year/ Ist Semester	4 Months
6.		Ist Year/ IInd Semester	4 Months
7.		IInd Year/ 3rd Semester	4 Months
8.		IInd Year/ 4th Semester	4 Months

By the successful completion of this clinical training period, the student is expected to fulfil the objectives of the program and will be examination as given below:

S.No.	Program Name	Year/Semester	Case file	Practical on Case	Voice/Viva	Attendance
5.	MPT	Ist Year/ Ist Semester	20 Marks	25 Marks (1 Long Case and 2 Short Case)	50 Marks	5 Marks
6.		Ist Year/ IInd Semester				
7.		IInd Year/ 3rd Semester				
8.		IInd Year/ 4th Semester				

EVALUATION OF CLINICAL POSTING

MPT- Students has to prepare 1 long case and 2 short cases during their clinical posting. The evaluation for internal clinical examination of 100 marks will be distributed:

Cases during clinical posting=**45 marks**.

Viva voce =**50 marks**

Attendance=**5 marks**

	Course Articulation Matrix: (Mapping of COs with POs and PSOs)																
PO-PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	2	3	3	2	3	2	3	1	2	1	-	-	3	2	3	3	2
CO2	3	3	3	3	2	2	3	2	1	3	-	-	2	2	3	2	3
CO3	3	3	3	3	2	2	3	2	1	3	-	-	3	2	2	2	3
CO4	3	3	3	3	2	2	3	2	1	3	-	-	2	3	2	2	3
CO5	3	3	3	3	2	2	3	2	1	3	-	-	3	2	3	3	2

2- Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Attributes & SDGs Common for all branches / Disciplines

Course Code	Course Title	Attributes							SDGs No.
		Employability	Entrepreneurship	Skill Development	Gender Equality	Environment & Sustainability	Human Value	Professional Ethics	
PT513	**CLINICAL POSTING**	√	√	√	√		√	√	**3,4,11**