



TAKSHASHILA UNIVERSITY

(Tamil Nadu State Private University)
ONGUR, TINDIVANAM TK, VILLUPURAM DT

**FACULTY OF HEALTH SCIENCES
SCHOOL OF PHYSIOTHERAPY**

Department of Physiotherapy

**REGULATION 2024
CURRICULUM & SYLLABI
Bachelor of Physiotherapy
Semester – V**



VISION AND MISSION OF UNIVERSITY

VISION:

To create change makers and world leaders similar to the ancient Takshashila University

MISSION:

The brightest minds and the best resources are used to nurture and develop the leaders of tomorrow, where they are encouraged to be eternally curious and ethically sound.

DEPARTMENT VISION AND MISSION

VISION:

To create a productive learning and research environment for graduates to become highly dynamic, competent, ethically responsible, professionally knowledgeable in the field of physiotherapy to meet the needs on par with global standards.

MISSION:

M1: Quality Education	Empowering the students with the necessary technical skills through quality education to grow professionally
M2: Innovative Research	Advocating the innovative research ideas by incorporating with hospitals for developing new treatment techniques
M3: Placement and Entrepreneurship	Advancing the education by strengthening the clinical-academic relationship through hands-on training to seek placement in the Hospitals and rehabilitation centres.
M4: Ethics and Social Responsibilities	Stimulating professional behaviour and good ethical values to improve the leadership skills and social responsibilities.

PROGRAMME OUTCOMES (POs)

As an independent practitioner, entry level Physiotherapy graduate will be able to

- PO1:** Demonstrate competencies to provide quality care to the individuals and populations to optimize their movement, function, and quality of life.
- PO2:** Demonstrate competency to examine, assess, evaluate, treat and prescribe physiotherapeutic management of various disease, disorders and trauma conditions.
- PO3:** Promote health and implement strategies informed by best available research evidence to prevent and minimize impairments, activity limitations and participation restrictions caused due to various disorders.
- PO4:** Demonstrate the commitment to provide ethical care through high standards of professional practice.
- PO5:** Demonstrate abilities to communicate effectively to augment therapeutic and professional relationships.
- PO6:** Demonstrate competency to prescribe and comprehend various diagnostic imaging, electrophysiological, hematological and bio- chemistry investigations for proper diagnosis, treatment or referral to other healthcare professionals.
- PO7:** Demonstrate competencies to integrate best available research evidence in to clinical decision making and practice.
- PO8:** Exhibits commitment towards continuous learning and scholarly activities.
- PO9:** Demonstrate abilities to work effectively with Healthcare team in providing patient centered care.
- PO10:** Demonstrate abilities to manage self, time, resources and priorities to ensure safe, effective, and sustainable services.
- PO11:** Demonstrate competencies in quality assurance relevant to Physiotherapy practice.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- PEO1:** Able to acquire the cognitive, affective and psychomotor skills deemed essential for completion of this program and to perform as a competent physiotherapist who will be able to examine, evaluate, diagnose, plan, execute and document Physiotherapy treatment independently or along with the multidisciplinary team.
- PEO2:** Evaluate patients for impairments and functional limitations and able to execute all routine physiotherapeutic procedures as per the evaluation.
- PEO3:** Able to operate and maintain Physiotherapy equipment used in treatment of patient, Physiotherapy treatment planning (both electrotherapy and exercise therapy) & procedures independently.
- PEO4:** Able to provide patient education about promotion of health, prevention of disease and disorders and various physiotherapeutic interventions to the patient and care givers.
- PEO5:** Able to demonstrate all competencies to achieve the program outcomes.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Clinician / Physiotherapy Practitioner

Demonstrate competencies to provide quality care to individuals and populations to optimise their movement, function, and quality of life. Promote health and implement strategies informed by best available research evidence to prevent and minimise impairments, activity limitations and participation restrictions caused due to various disorders.

PSO2: Ethical and Professional practitioner

Demonstrate the commitment to provide ethical care through high standards of professional practice

PSO3: Communicator

Demonstrate abilities to communicate effectively to augment therapeutic and professional relationships

PSO4: Evidence-based Practitioner and lifelong learner

Demonstrate competencies to integrate best available research evidence into clinical decision making and practice.

Exhibits commitment towards continuous learning and scholarly activities.

PSO5: Inter-professional teamwork

Demonstrate abilities to work effectively with Healthcare team in providing patient centred care

PSO6: Leader and Manager

Demonstrate abilities to manage self, time, resources and priorities to ensure safe, effective, and sustainable services.

PSO7: Quality assurance

Demonstrate competencies in quality assurance relevant to physio- therapy practice

CURRICULUM

School: School of Physiotherapy
Program: Bachelor of Physiotherapy

Batch: 2024-2028
Regulation: R-2024

SEMESTER-V													
Sl. No	Course Code	Course Title	Cate gory	Periods			Total hrs	Credits	Max. Marks				
				L	T	P			CAM T	CAM P	ESE T	ESE P	Total
Theory													
1	U24PTT501	General Medicine and Pediatrics (GMP)-I	PC	4	0	0	60	4	40	-	60	-	100
2	U24PTT502	General Surgery (GS) -I	PC	4	0	0	60	4	40	-	60	-	100
3	U24PTT503	Orthopedics (OR) – I	PC	4	0	0	60	4	40	-	60	-	100
4	U24PTT504	Research Methodology, Biostatistics and Evidence Based Practice (RMB)-I	PC	4	0	0	60	4	40	-	60	-	100
5	U24PTB505	Physiotherapy in Adult and Paediatric General Medical and Surgical Conditions (PTMS)-I	PC	5	0	4	135	7	40	50	60	50	200
6	U24PTB506	Physiotherapy in Adult and Paediatric Orthopedic Conditions (PTO)-I	PC	5	0	4	135	7	40	50	60	50	200
7	U24PTB507	Physical & Functional Diagnosis and Prescription (PFDP)-I	PC	4	0	2	90	5	40	50	60	50	200
8	U24PTP508	Clinical Education(CEd)-I	PC	0	0	6	120	3	-	100	-	-	100
Skill Enhancement Course													
9	U24PTP509	Cupping Therapy	SEC	0	0	2	30	1	-	100	-	-	100
Ability Enhancement Course													
10	U24PTT510	Podiatry - I	AEC	2	0	0	30	2	100	-	-	-	100
Generic Elective Course													
11	U24XX5XXX	Generic Elective-III	GE	1	1	0	30	2	100	-			100
University Mandatory Course													
11	U24UMP510	Takshashila Innovative Learning -V	TIL	0	0	2	30	1	-	100	-	-	100
12	U24UMP512	Green credit -V	GC	0	0	2	30	1	-	100	-	-	100
							870	45	480	550	420	150	1600

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U24PTT501	General Medicine and Pediatrics (GMP)-I	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Analyze common infectious diseases by classifying their transmission modes and clinical presentations, and apply evidence-based prevention (including vaccination) and diagnostic/management principles to develop appropriate patient care plans.
CO2 :	Explain the pathophysiology, diagnostic criteria, complications, and evidence-based treatment and prevention strategies for major metabolic (e.g., diabetes, endocrine disorders) and deficiency diseases, and construct basic management plans tailored to patient needs.
CO3 :	Assess and differentiate major respiratory disorders using history, physical examination and relevant investigations, and design condition-specific treatment and physiotherapy rehabilitation plans that address acute care and long-term recovery.
CO4 :	Describe the pathogenesis, clinical features and diagnostic approaches of major circulatory diseases and formulate emergency response and comprehensive medical/rehabilitation plans emphasizing secondary prevention and functional recovery.
CO5 :	Evaluate age-specific problems in neonates, children and older adults—identifying causes, clinical manifestations and complications—and develop multidisciplinary, developmentally appropriate management and rehabilitation strategies to optimize function and quality of life.

UNIT 1: Infections	12 Hrs.
Infections: Classify communicable diseases, Discuss the importance of prevention of communicable diseases, Discuss the physiological changes caused due to infection, Describe the methods of spreading the infections, Discuss different types vaccination used in Infections, Discuss the importance of vaccination, Discuss the clinical features, Diagnosis, Complications and medical management of Food	

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poisoning and gastroenteritis, Sexually transmitted diseases, Tuberculosis, Leprosy, Rheumatic fever, Tetanus, Typhoid, Diphtheria, Pneumonia, Influenza Herpes, simplex and zoster, Varicella, Measles, Mumps, Hepatitis B & C, HIV infections and AIDS.

UNIT 2: Metabolic and Deficiency Diseases	12 Hrs.
Metabolic Diseases: Discuss etiology, clinical features, diagnosis, complications and treatment, Diabetes, diseases of the endocrine glands. Deficiency Diseases: Discuss etiology, clinical features, diagnosis, complications and treatment, Anemia, Vitamin & Mineral Deficiency diseases.	

UNIT 3: Diseases of Respiratory system	12 Hrs.
Respiratory System: Explain the Etiology, clinical features, diagnosis, complications and treatment of the following conditions Asthma, Bronchitis, Tuberculosis, Massive collapse of lungs, Bronchiectasis, Bronchial Pneumonia, lung abscess, Emphysema, Pleural effusion, Pneumothorax & vocal cords, chronic infection of larynx and trachea, Abnormalities of trachea, infract of lungs, chronic obstructive pulmonary disease, chest wall deformities.	

UNIT 4: Diseases of Circulatory System	12 Hrs.
Circulatory System: Explain the Etiology, clinical features, diagnosis, complications and treatment of the following conditions Atherosclerosis, Thrombosis, Embolism, Hemorrhage, various diseases of arteries, Vascular diseases, ischemic heart disease, rheumatic heart disease, congenital heart disease, cardiac arrest, Hypertension.	

UNIT 5: Pediatrics and Geriatrics	12 Hrs.
Pediatrics: Enumerate the problems and management LOW Birth Weight Babies Describe the common congenital Abnormalities with causes and its management. Explain the causes, types, complications, clinical manifestations, and medical management of cerebral palsy, Geriatrics: Discuss the	

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epidemiology, pathogenesis, clinical evolution, presentation and course of common diseases in the elderly.

Total Hours: 60

TEXT BOOKS :

1.	Davidson's principles and Practices of Medicine – Edward – Churchill Livingstone.
2.	Hutchinson's Clinical Methods – Swash – Bailliere Tindall.
3.	A Short Text book of Medicine – Krishna Rao – Jaypee Brothers.
4.	A Short Text book of Psychiatry – Ahuja Niraj – Jaypee Brothers.
5.	Shah SN: API text book of Medicine. Vol I & II, 8th Ed, The Association of Physicians of India, Mumbai, 2008.

REFERENCE BOOKS :

1.	Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo: Harrison's principles of internal medicine. Vol I & II, 17th Ed, McGraw Hill, New York, 2008.
2.	McPhee, Papadakis, Tierney: Current medical diagnosis and treatment. 46th Ed, McGraw Hill, New York, 2007.
3.	Ogilvie & Evans: Chamberlain's symptoms and signs in clinical medicine – An introduction to medical diagnosis. 12th Ed, Butterworth Heinmann, oxford,
4.	Douglas, Nicol & Robertson: Macleod's clinical examination. 11th Ed, Elsevier – Churchill

WEB REFERENCES :

1.	https://pubmed.ncbi.nlm.nih.gov/?term=general+medicine
2.	https://www.mdcalc.com/
3.	https://www.aap.org/
4.	https://www.ncbi.nlm.nih.gov/books/
5.	https://www.who.int/health-topics/child-health

K. N. Sura
BoS Chairman

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U24PTT502	General Surgery (GS) -I	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Describe surgical principles, wound healing stages, anesthesia types, and apply physiotherapy strategies for non-healing wounds.
CO2 :	Explain incision and suturing principles, recognize anesthesia complications, and formulate postoperative management integrating physiotherapy.
CO3 :	Identify common abdominal incisions and procedures and design perioperative physiotherapy plans for abdominal/pelvic surgeries.
CO4 :	Describe common thoracic incisions and procedures and evaluate their impact on respiratory function and physiotherapy care.
CO5 :	Develop comprehensive perioperative and rehabilitation programmes for major thoracic and cardiac surgeries tailored to patient risk and surgical type

UNIT I : Introduction to General Surgery	12 Hrs.
Discuss the principles of surgeries, Explain the process of wound healing Discuss the types of anesthesia, Discuss the surgical management of non-healing wounds.	

UNIT II : Principle of General Surgery	12 Hrs.
Explain the principles of incision and suturing, Discuss the types of anesthesia, Explain the complications of general anesthesia on various systems, Discuss the Principles of Post-operative management.	

UNIT III : Abdominal surgeries	12 Hrs.
Explain the common abdominal incisions Discuss the common abdominal and pelvic organ surgical procedures and its Physiotherapy implications (Herniorrhaphy, Colostomy, Ileostomy, Hysterectomy, Prostatectomy, cystectomy, Appendectomy and Cholecystectomy).	

UNIT IV Thoracic surgeries	12 Hrs.
Explain the common thoracic incisions, Discuss the common thoracic organ surgical procedures.	

UNIT V Physiotherapy implications in Thoracic Surgeries	12 Hrs.
Physiotherapy implications (CABG, Cardiac transplantation, Valve surgeries, Thoracotomy, Pleural surgeries, Lobectomy, Lung Volume reduction surgeries, Lung transplantation).	

Total Hours: 60

TEXT BOOKS :	
1.	S. Das: A concise textbook of surgery. 3rd Ed, Dr. S.Das, Calcutta, 2001.
2.	S. Das: A manual on clinical surgery. 6th Ed, Dr. S. Das, Calcutta, 2004.
3.	Dutta DC: Text book of obstetrics / Textbook of gynecology. 5th / 6th Ed, New central book agency (P) ltd, Kolkata, 2003/2004.
4.	Basak KS: Essentials of ophthalmology. 3rd Ed, Current books international, Kolkata, 2004.
5.	Bhargava KB, Bhargava SK & Shah TM: A short textbook of E.N.T diseases. 7th Ed, Usha publications, Mumbai, 2005

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REFERENCE BOOKS :

1.	Russell RCG, Williams NS, Bulstrode CJK: Bailey & Love's short practice of surgery. 24th Ed, Arnold, London, 2004.
2.	Mowschenson PM: Aids to undergraduate surgery. 3rd Ed, Churchill Livingstone, Edinburgh,
3.	Farquharson M & Moran B: Farquharson's textbook of operative general surgery. 9th Ed, Hodder Arnold, London, 2005.
4.	Lumley JSP: Hamilton Bailey's demonstrations of physical signs in clinical surgery. Butterworth Heinman, Oxford,
5.	Doherty MG: Current surgical diagnosis and treatment. 12th Ed, Lange medical books, New York, 2006.

WEB REFERENCES :

1.	https://www.facs.org/
2.	https://www.ncbi.nlm.nih.gov/books/
3.	https://pubmed.ncbi.nlm.nih.gov/?term=general+surgery
4.	https://www.sciencedirect.com/topics/medicine-and-dentistry/general-surgery
5.	https://www.medscape.com/features/sections/surgery

K.N. Jena
BoS Chairman

U24PTT503	Orthopedics (OR) – I	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Describe principles of orthopedics, clinical and imaging examination, and fracture/dislocation healing and management, and apply these to plan basic physiotherapy interventions.
CO2 :	Identify common upper-limb fractures, dislocations and hand injuries, explain their mechanisms and complications, and design appropriate perioperative and rehabilitative physiotherapy plans.
CO3 :	Explain mechanisms, clinical features and stabilization strategies for cervical, thoracic and lumbar spine fractures, and formulate acute management and rehabilitation plans addressing neurological complications
CO4 :	Recognize major pelvic and lower-limb fractures and dislocations, describe their management options and complications, and create condition-specific physiotherapy rehabilitation programmes.
CO5 :	Define and differentiate soft-tissue injuries (sprains, strains, contusions, tendinopathies, ruptures, bursitis), describe their mechanisms and treatments, and develop conservative and post-operative physiotherapy management plans.

UNIT I : Introduction and Traumatology	12 Hrs.
Introduction to orthopedics, Clinical examination in an orthopedic patient, Common investigative procedures, Radiological and Imaging techniques in Orthopedics, Inflammation and repair, Soft tissue healing. Traumatology, Fracture definition, types, signs and symptoms, Fracture healing, Complications of fractures, Conservative and surgical approaches. Principles of management – reduction (open/closed, immobilization etc.). Subluxation/ dislocations – definition, signs and symptoms, management (conservative and operative).	

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UNIT II : Fractures and Dislocations of Upper Limb	12 Hrs.
Fractures of Upper Limb: causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures are Fractures of clavicle and scapula, Fractures of greater tuberosity and neck of humerus, Fracture shaft of humerus, Supracondylar fracture of humerus, Fractures of capitulum, radial head, olecranon, coronoid, and epicondyles, Side swipe injury of elbow, Both bone fractures of ulna and radius, Fracture of forearm – Monteggia, Galeazzi fracture – dislocation, Chauffer's fracture, Colle's fracture, Smith's fracture, Scaphoid fracture, Fracture of the metacarpals, Bennett's fracture, Fracture of the phalanges. (Proximal and middle.) Dislocations of Upper Limb: Anterior dislocation of shoulder – mechanism of injury, clinical feature, complications, conservative management (Kocher's and Hippocrates maneuver), surgical management (putti plat, Bankart's) etc. Recurrent dislocation of shoulder, Posterior dislocation of shoulder – mechanism of injury, clinical features and management. Posterior dislocation of elbow – mechanism of injury, clinical feature, complications & management. Hand Injuries - mechanism of injury, clinical features, and management of the following Crush injuries, Flexor and extensor injuries, Burn injuries of hand.	

UNIT III : Fracture of Spine	12 Hrs.
Fracture of Cervical Spine: Mechanism of injury, clinical feature, complications (quadriplegia) Management-immobilization (collar, cast, brace, traction) Management for stabilization, management of complication (bladder and bowel, quadriplegia). Clay shoveller's fracture, Hangman's fracture, Fracture odontoid, Fracture of atlas. Fracture of Thoracic and Lumbar Regions: Mechanism of injury, clinical features, and management conservative and surgical of common fractures around thoracic and lumbar regions, Fracture of coccyx, Fracture of Rib Cage Mechanism of injury, clinical features, management for Fracture Ribs, Fracture of sternum.	

UNIT IV : Fractures and Dislocations of Lower Limb	12 Hrs.
Fractures of Lower Limb: Fracture of Pelvis and Lower Limb - causes, clinical features, mechanism of injury, complications, conservative and surgical management of the following fractures Fracture of pelvis, Fracture neck of femur – classification, clinical features, complications, management conservative and surgical. Fractures of trochanters, Fracture shaft femur clinical features, mechanism of injury,	

complications, management-conservative and surgical. Supracondylar fracture of femur, Fractures of the condyles of femur, Fracture patella, Fractures of Tibial condyles, Both bones fracture of tibia and fibula, Dupuytren's fracture, Maisonneuve's fracture, Pott's fracture mechanism of injury, management, Bimalleolar fracture, Trimalleolar fracture, Fracture calcaneum mechanism of injury, complications and management. Fracture of talus. Fracture of metatarsals stress fractures Jones's fracture. Fracture of phalanges. **Dislocations of Lower Limb:** mechanism of injury, clinical features, complications, management of the following dislocations of lower limb. Anterior dislocation of hip. Posterior dislocation of hip. Central dislocation of hip. Dislocation of patella. Recurrent dislocation of patella. Soft Tissue Injuries Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis. Mechanism of injury of each, clinical features, managements- conservative and surgical of the following soft tissue injuries Meniscal injuries of knee. Cruciate injuries of knee. Medial and lateral collateral injuries of knee. Lateral ligament of ankle. Wrist sprains. Strains- quadriceps, hamstrings, calf, biceps, triceps etc. Contusions- quadriceps, gluteal, calf, deltoid etc. Tendon ruptures-Achilles, rotator cuff muscles, biceps, pectorals etc.

UNIT V : Soft Tissue Injuries

12 Hrs.

Soft Tissue Injuries: Define terms such as sprains, strains, contusion, tendinitis, rupture, tenosynovitis, tendinosis, bursitis. Mechanism of injury of each, clinical features, managements- conservative and surgical of the following soft tissue injuries Meniscal injuries of knee. Cruciate injuries of knee. Medial and lateral collateral injuries of knee. Lateral ligament of ankle. Wrist sprains. Strains- quadriceps, hamstrings, calf, biceps, triceps etc. Contusions- quadriceps, gluteal, calf, deltoid etc. Tendon ruptures-Achilles, rotator cuff muscles, biceps, pectorals etc.

Total Hours: 60

TEXT BOOKS :

1. Outline of Fracture-Adams
2. Outline of Orthopaedics-Adams
3. Orthopaedics and Traumatology-Natrajan
4. Apley's Orthopaedics

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| 5. | Textbook of orthopaedics- Maheshwari |
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REFERENCE BOOKS :

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| 1. | Tureks Orthopaedics. |
| 2. | Cambells Operative Orthopaedics. |

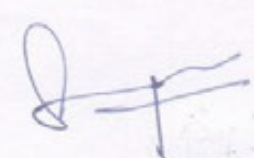
WEB REFERENCES :

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| 1. | https://www.aaos.org/ |
| 2. | https://www.ncbi.nlm.nih.gov/books/ |
| 3. | https://pubmed.ncbi.nlm.nih.gov/?term=orthopedics |
| 4. | https://www.sciencedirect.com/topics/medicine-and-dentistry/orthopedics |
| 5. | https://orthobc.com/ |

K.N. Jena
BoS Chairman

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U24PTT504	Research Methodology, Biostatistics and Evidence Based Practice (RMB)-I	L	T	P	C	Total
		4	0	0	4	60

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain fundamental statistical concepts, types of data, and methods of tabulation/graphical representation, and apply these to summarize health-care/physiotherapy data.
CO2 :	Calculate and interpret measures of central tendency and dispersion, understand key probability distributions and sampling concepts, and apply sample-size and error considerations to health research design.
CO3 :	Formulate clinical research questions (PICO), perform appropriate hypothesis tests (parametric and nonparametric), and locate, appraise and synthesize evidence (including systematic reviews and meta-analysis) for physiotherapy practice
CO4 :	Describe research types and designs, articulate research problems and objectives, and select appropriate sampling and design strategies for ethical, methodologically sound studies.
CO5 :	Develop and evaluate measurement tools and scaling techniques, assess reliability/validity, and apply suitable data-collection methods and basic computer-based data analysis for research reporting.

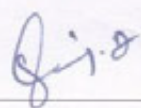
UNIT I : Introduction to Biostatistics	12 Hrs.
Discuss the Introduction of biostatistics, definition, characteristics of statistics. Importance of the study of statistics, Branches of statistics, Statistics and health science including physiotherapy, Parameters and Estimates, Descriptive and inferential statistics, Variables and their types, Measurement scales. Explain introduction of the Tabulation of Data which includes Basic principles of tabulation and graphical representation, Types of diagrams – histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve, Normal probability curve, Pie chart.	

UNIT II : Central Tendency, Probability & Standard distributions and Sampling Techniques	12 Hrs.
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Central Tendency: Describe the Measure of Central Tendency, need for measures of central Tendency, Definition and calculation of mean – ungrouped and grouped, Meaning, interpretation and calculation of median ungrouped and grouped., Meaning and calculation of mode, Comparison of the mean, median and mode, Guidelines for the use of various measures of central tendency. **Probability and Standard Distributions:** Discuss the Probability and Standard Distributions Meaning of probability of standard distribution, the binominal distribution, the normal distribution, Divergence from normality – skew ness, kurtosis. **Sampling techniques:** Discuss the Sampling techniques, sample size, calculation of sample size for survey, and experimental research designs, Sampling variation and tests of significance. type I and type II errors, Power.

UNIT III : Hypothesis, Variance & Covariance, EBP and Reviews	12 Hrs.
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Hypothesis: Discuss the Testing of hypothesis Basic concepts concerning testing of hypothesis, Procedure of hypothesis testing, measuring the power of hypothesis test, Tests of hypothesis, parametric and non-parametric tests for difference, correlation and association. **Variance & Covariance:** Describe Analysis of variance & covariance: Analysis of variance (ANOVA), what is ANOVA? Basic principle of ANOVA, ANOVA technique, Analysis of Co variance (ANACOVA). **Evidence Based Practice:** Define EBP, Discuss the importance of EBP in Physiotherapy practice, Describe the process of EBP, Formulate clinical questions for evidence search using structured format (PICO, PICOT, SPDER, SPICE), Aetiology, Prevention, Intervention, Diagnosis, Discuss the importance of evidence search, Discuss the levels of evidence, Describe the process of literature search, Identify primary and secondary database for literature search, Demonstrate skills in searching through primary and secondary database, Explain internal and external validity of evidence. **Reviews:** Discuss the process of systematic review, Discuss metanalysis, Appraise the evidence using appropriate critical appraisal tools (RCT, Systematic Reviews, Cohort studies). Discuss the importance of **Outcome measures**, Identify appropriate outcome measures, Discuss sensitivity, Specificity and Minimal Clinical Significance difference, Discuss the importance of Clinical Practice Guidelines (CPGs), Search for CPGs through common database and search engines, Appraise CPGs using appropriate tools, Discuss the challenges and Barriers in implementing EBP.



UNIT IV: Research methodology**12 Hrs.**

Introduction to Research methodology Meaning of research, objectives of research, Motivation in research, Types of research & research approaches, Research methods vs methodology, Criteria for good research, ethics of research **Research problem:** Statement of research problem., Statement of purpose and objectives of research problem, Necessity of defining the problem, hypothesis, limitations, delimitations significance of the study, **Research design:** Meaning of research design, need for research design, Features for good design, Different research designs, Basic principles of research design, **Sampling fundamentals,** need for sampling & some fundamental definitions, important sampling distributions, Criteria for selecting sampling procedure, Implications for sample design, steps in sampling design, characteristics of good sample design, Different types of sample design.

UNIT V: Measurement & scaling techniques**12 Hrs.**

Measurement & scaling techniques Measurement in research Measurement scales, sources of error in measurement, reliability, validity, sensitivity and specificity of a measurement tool Technique of developing measurement tools, Meaning of scaling, its classification. Important scaling techniques, **Methods of data collection:** collection of primary data, collection data through questionnaires & schedules, Difference between questionnaires & schedules. **Format of scientific documents:** (Structure of protocols, formats reporting in scientific journals, systematic reviews and meta-analysis). **Computer technology:** Introduction to Computers, computer application in research, Introduction to data analysis software's.

Total Hours: 60**TEXT BOOKS :**

1. Mahajan, B. K. (2002). Methods in biostatistics. Jaypee Brothers Publishers.
2. Hicks, C. Research for Physiotherapists: project design and analysis. Churchill
3. Practical Evidence-Based Physiotherapy by Robert Herbert, Gro Jamtvedt, Kåre Birger Hagen, Judy Mead, Sir Iain Chalmers
4. Bajpai S.R. –Methods of Social Survey and Research, Kitab Ghar, Kanpur.

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| 5. | Mohsin S.M. – Research methods in Behavioral Sciences. Orient publications, New Delhi |
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REFERENCE BOOKS :

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| 1. | Evidence Based Physical Therapy by Linda Fettes, Julie Tilson |
| 2. | Guide to Evidence-Based Physical Therapy Practice by Dianne V. Jewell |
| 3. | Bailey N.T.J. – Statistical methods in Biology. The English University Press, London. |
| 4. | Colton – Statistics in medicine. Little Brown Company, Boston |
| 5. | Goulden C.H. – Methods of Statistical Analysis. Asia Publishing House, New Delhi. |

WEB REFERENCES :

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| 1. | https://www.ncbi.nlm.nih.gov/books/NBK1261/ |
| 2. | https://training.cochrane.org/ |
| 3. | https://jamaevidence.mhmedical.com/ |
| 4. | https://www.sciencedirect.com/topics/mathematics/biostatistics |
| 5. | https://www.apta.org/research/evidence-based-practice |

K.N. Jena
BoS Chairman

U24PTB505	Physiotherapy in Adult and Paediatric General Medical and Surgical Conditions (PTMS)-I	L	T	P	C	Total
		5	0	4	7	135

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Assess and manage oedema, lymphedema and wound healing problems using evidence-based physiotherapy (including manual techniques, compression and electrotherapeutics) to promote healing and prevent hypertrophic/keloid scarring.
CO2 :	Document and treat common skin conditions with appropriate physiotherapy modalities (UVR, topical techniques, hydrotherapy, massage) and design follow-up plans for cosmetic and functional skin care
CO3 :	Perform preoperative and postoperative physiotherapy assessments for abdominal and related surgeries, identify likely complications, and establish targeted perioperative care goals.
CO4 :	Plan and implement perioperative physiotherapy interventions for upper and lower gastrointestinal, hernia and reconstructive procedures (including burns and grafts) to optimize respiratory function, mobility and recovery.
CO5 :	Assess vestibular and balance disorders (BPPV, unilateral/bilateral vestibular loss) and design progressive, goal-directed vestibular exercise programs to restore gaze stability, postural control and functional mobility.

UNIT I : Physiotherapy in wounds Care	15 Hrs.
Oedema-Traumatic, Obstructive, Paralytic, oedema due to poor muscle and laxity of fascia Lymphedema, Role of Physiotherapy in wounds and local infections Care of ulcers and wounds - Care of surgical scars- U.V.R and other electro therapeutics for healing of wounds, prevention of Hyper-granulated Scars Keloids, Electrotherapeutics measures for relief of pain during mobilization of scars tissues.	

UNIT II : Physiotherapy in skin conditions	15 Hrs.
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Physiotherapy in skin conditions Documentation of assessment, treatment and follow up skin conditions. U.V.R therapy in various skin conditions, Vitiligo, Hair loss, Pigmentation, Infected wounds ulcers. Faradic foot bath for Hyperhydrosis. Massage maneuvers for cosmetic purpose of skin, use of specific oil as medium, Care of anesthetic hand and foot.

UNIT III : Pre and post-operative Physiotherapy Assessment

15 Hrs.

Principles of Pre and post-operative Physiotherapy in abdominal surgeries common Complication, Abdominal incisions assessment,

UNIT IV: Pre and post-operative Physiotherapy for abdominal surgeries

15 Hrs.

Physiotherapy in pre and post-operative stages of Operations on upper G.I.T.- oesophagus, stomach, duodenum, Operations on large and small intestine – Appendicectomy, cholecystectomy, partial colectomy, ileostomy, hernia and herniotomy, herniorrhaphy, hernioplasty. Physiotherapy in burns, skin grafts, and reconstructive surgeries.

UNIT V: Vestibular Rehabilitation

15 Hrs.

Vestibular Rehabilitation Role of vestibular system in postural control Assessment of Balance and vestibular ocular reflex Benign Paroxysmal Positional Vertigo, Unilateral Vestibular Loss, Bilateral Vestibular Disorder– Assessment and management of Posterior Canal, Anterior Canal, Horizontal Cana Treatment theory, goals of management and progression Exercise Prescription in Vertigo

Practical:

60 Hrs

Practical shall be conducted for all the relevant topics discussed in theory in the following forms Bedside case presentations and case discussions, Lab sessions consisting of evaluation and assessment methods and treatment techniques on student models/ simulation, Identification of impairment activity limitation and participation restriction and Planning and execution of management protocol for various medical and surgical conditions with respect to Active exercise regimen, respiratory techniques Passive mobilization and stretching procedures Selection of electrotherapeutic modalities, Patient and caregiver education and

training, Functional training programme Bladder bowel training Integumentary care, Prescription and training of suitable aids appliances and Orthotic devices, Ergonomic advice.

Total Hours: 135

TEXT BOOKS :

1.	Physical Rehabilitation-Susan B O'Sullivan, Thomas. J. Schmitz
2.	Hollis M. Practical Physical Therapy
3.	Tidys Textbooks of Physiotherapy. Elsevier
4.	Cash Textbook of Physiotherapy in Medical and Surgical Conditions

REFERENCE BOOKS :

1.	Women's Health – Sapsford
2.	Physical Rehabilitation, Assessment and management; Susan Sullivan

WEB REFERENCES :

1.	https://www.apta.org/physical-therapy/specifications/medical-surgical
2.	https://www.ncbi.nlm.nih.gov/books/
3.	https://pubmed.ncbi.nlm.nih.gov/?term=physiotherapy+general+medical+conditions
4.	https://pubmed.ncbi.nlm.nih.gov/?term=pediatric+medical+surgical+physiotherapy
5.	https://worldphysiotherapy.org/

K.N. Seena
BoS Chairman

U24PTB506	Physiotherapy in Adult and Paediatric Orthopedic Conditions (PTO)-I	L	T	P	C	Total
		5	0	4	7	135

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Conduct comprehensive orthopedic assessments using SOAP format (history, systems review, observation, palpation, ROM, special tests, neuro exam) and document findings to formulate individualized PT treatment and home programs.
CO2 :	Explain fracture classification, healing and complications, and apply evidence-based principles of fracture management and physiotherapy across immobilization and post-immobilization phases.
CO3 :	Plan and deliver perioperative physiotherapy for common orthopedic surgeries (arthroplasty, arthrodesis, osteotomy, tendon procedures, arthroscopy, fixation) addressing goals, precautions and progression to restore function.
CO4 :	Assess and provide condition-specific physiotherapy interventions and home programs for degenerative (osteoarthritis, spondylosis), inflammatory (rheumatoid, ankylosing spondylitis) and musculoskeletal infections (osteomyelitis, septic arthritis, TB).
CO5 :	Evaluate traumatic and non-traumatic spinal disorders (including spinal fractures, SCI, PIVD, spondylosis, deformities) and design evidence-based rehabilitation plans including pre/postoperative care and back-school strategies.

UNIT I : PT assessment for Orthopedic conditions	15 Hrs.
PT assessment for Orthopedic conditions SOAP format Subjective - history taking, informed consent, personal, past, medical and socioeconomic history, chief complaints, history of present illness. Pain assessment- intensity, character, aggravating and relieving factors, site and location. Objective- on observation - body built swelling, muscle atrophy, deformities, posture and gait. On palpation- tenderness-grades, muscle spasm, swelling- methods of swelling assessment, bony prominences, soft tissue texture and integrity, warmth and vasomotor disturbances. On examination – ROM – active and passive, resisted isometric tests, limb length-apparent, true and segmental, girth measurement, muscle length testing-	

tightness, contracture and flexibility, manual muscle testing, peripheral neurological examination- dermatomes, myotomes and reflexes, special tests and functional tests. Prescription of home program, Documentation of case records, and follow up.

UNIT II : Fracture and its Principles

15 Hrs.

Fractures - types, classification, signs and symptoms, complications. Fracture healing - factors affecting fracture healing. Principles of fracture management - reduction – open and closed, immobilization - sling, cast, brace, slab, traction - manual, mechanical, skin, skeletal, lumbar and Cervical traction, external fixation, functional cast bracing. PT management in complications - early and late - shock, compartment syndrome, VIC, fat embolism, delayed and mal union, RSD, myositis ossificans, AVN, pressure sores etc. Physiotherapy assessment in fracture cases. Aims of PT management in fracture cases - short and long term goals. Principles of PT management in fractures - Guidelines for fracture treatment during period of immobilization and guidelines for treatment after immobilization period. Principles of various schools of thought in manual therapy. (Briefly Maitland and McKenzie,

UNIT III : PT management of Orthopedic surgeries

15 Hrs.

Principles of Pre and post-operative PT assessment, goals, precautions and PT management of Orthopedic surgeries: Arthrodesis, Osteotomy, Arthroplasty-partial and total - Excision arthroplasty, excision arthroplasty with implant, interpositional arthroplasty and total replacement; Tendon transplant, Soft tissue release- tenotomy, myotomy, lengthening; Arthroscopy, Spinal stabilization, Re-attachment of limbs, External fixators, Synovectomy..

UNIT IV: Degenerative and inflammatory conditions and Infective conditions

15 Hrs.

Degenerative and inflammatory conditions Definition, signs and symptoms, clinical features, path physiology, radiological features, deformities, medical, surgical management. Describe the PT assessment and management and home program for the following conditions – Osteoarthritis - emphasis mainly on knee, hip and hand, Rheumatoid Arthritis, Ankylosing spondylitis, Gout, Perthes disease, Periarthritic shoulder. Infective conditions Definition, signs and symptoms, clinical features, pathophysiology, radiological features, medical, surgical management. De- scribe PT assessment and

management for following conditions – Osteomyelitis – acute and chronic, Septic arthritis, pyogenic arthritis, TB spine and major joints - knee and hip.

UNIT V: PT Management in Spine Fractures

15 Hrs.

Traumatic conditions of spine spinal fractures cervical thoracic lumbar Spinal cord injury Intervertebral disc prolapsed (PIVD) sprain contusion Non traumatic condition of spine: Cervical and lumbar spinal disorders: spondylosis, spondylolisthesis, Stenosis Cervical spondylosis, Lumbar spondylosis, Spondylolisthesis, Spinal canal stenosis, Spondylolysis, Sacroiliac joint dysfunction, Sacralisation, Lumbarisation, Intervertebral disc prolapse, Coccydynia, Spina bifida occulta, Thoracic Outlet Syndrome TB SPINE, non-specific low back pain Ankylosis spondylitis Scoliosis, kyphosis, Lordosis, sway back, torticollis Pre and peri operative PT management following spine surgeries Concepts of mechanize school of spinal disorders, back school.

PRACTICAL

60 Hrs.

Practical shall be conducted for all the relevant topics discussed in theory in the following forms Bedside case presentations and case discussions, Lab sessions consisting of evaluation and assessment methods on student models, treatment techniques and practice sessions, Student should be able to execute independently the following procedures on self / human model / patient History taking: examination observation palpation tests, investigation, diagnosis, functional diagnosis [impairment, functional restriction, activity limitation] documentation, Planning and execution of management protocol for various conditions of upper limb, lower limb, and spine in various clinical settings with respect to adult and Paediatric conditions, Active exercise regimen, Passive mobilization procedures Selection of electrotherapeutic modalities, Patient education Functional training programme, Orthotic and prosthetic checkout and training Ergonomic advice.

Total Hours: 135

TEXT BOOKS :

1. Orthopaedic Physiotherapy, Robert A Donatelli, Churchill Livingstone.
2. Tidy's Physiotherapy, Ann Thomasons, Varghese publishing House.

3.	Physical Rehabilitation Assessment and Treatment, Susan Sullivan, Japee brothers
4.	Textbook of Orthopaedics, John Ebnezar, Japee Brothers.
5.	Textbook of Orthopaedics and Rheumatology for Physiotherapists, Patricia A Downie.

REFERENCE BOOKS :

1.	Apley's system of Orthopaedics and fractures -Louis Solomon, David J. Warwick Arnold Publishers, London
2.	Turek's Orthopaedics: Principles and their Application, Weinstein SL and Buckwalter JA, Lippincott
3.	Clinical Orthopaedic Rehabilitation, Brent Brotzman.
4.	Peripheral Mobilisation – GD Maitland, Butterworth
5.	Vertebral Mobilisation – GD Maitland, Butterworth and Heinmann Publication.

WEB REFERENCES :

1.	https://www.apta.org/physical-therapy/specifications/orthopedic
2.	https://www.cpsso.on.ca/
3.	https://pubmed.ncbi.nlm.nih.gov/?term=pediatric+orthopedic+physiotherapy
4.	https://pubmed.ncbi.nlm.nih.gov/?term=adult+orthopedic+physiotherapy
5.	https://www.sciencedirect.com/topics/medicine-and-dentistry/orthopedic-physical-therapy

K.N. Jeera
BoS Chairman

U24PTB507	Physical & Functional Diagnosis and Prescription (PFDP)-I	L	T	P	C	Total
		4	0	2	5	90

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Demonstrate the assessment of musculoskeletal dysfunction using the ICF framework, clinical examination techniques, and relevant orthopedic special tests.
CO2 :	Assess different types of pain using subjective evaluation methods and standardized pain measurement and documentation scales.
CO3 :	Apply clinical reasoning to evaluate musculoskeletal dysfunction through manual therapy assessment, tissue examination, joint integrity testing, and functional diagnosis based on the ICF framework.
CO4 :	Perform comprehensive neurological assessment and functional evaluation of movement dysfunction using clinical examination techniques and electrodiagnostic procedures within the ICF framework.
CO5 :	Interpret electromyography, nerve conduction studies, and standardized functional assessment scales to support the evaluation and management of neurological disorders.

UNIT I : Introduction to ICF and Assessment of Musculoskeletal Dysfunction	12 Hrs.
Introduction to International Classification of Function, Disability & Health (I.C.F.) as a basis Functional Diagnosis of impairment, activity limitation and participation restriction. Assessment of Musculoskeletal Dysfunction, soft tissue flexibility, Joint mobility, Muscle strength & Endurance, Trick movement, Sensations, Limb length, Abnormal posture, Gait deviations due to musculoskeletal dysfunction Special Tests Cervical Spine: Foraminal compression, Distraction, Shoulder depression, vertebral artery, Dizziness tests Shoulder: Yergason's, Speed's, Drop- Arm, Supraspinatus, Impingement, Anterior & Posterior Apprehension, Allen's, Adson's test. Elbow: Cozen's, Miller's, Tinel's sign Forearm, Wrist & Hand: Phalen's, Bunnel-Littler, Froment's sign Lumbar Spine: Schober's, SLR, Prone, Knee Bending, Slump. Sacro Iliac joint: Faber- Patrick's, Gaenslen, Gillet, March's test Hip: Nelaton's line, Bryant's triangle, Thomas, Ober's, Tripod sign,	

Trendelenburg sign **Knee:** Tests for collateral & cruciate ligaments (valgus, varus, Lachman, Drawer's, McMurray's, Fluctuation, Patellar tap, Q- angle, Clarke's test **Ankle & Foot:** Anterior Drawer, Talar Tilt, Homan's & Moses test.

UNIT II : Assessment of pain	12 Hrs.
Assessment of pain Types of pain: Somatic, Somatic referred, Neurogenic, Visceral Subjective Assessment: Location, duration, progression, distribution, quality, diurnal variations, modifying factors, Severity, nature of pain, tissue irritability Objective Measurement & Documentation- Visual Analogue Scale (V.A.S), Numerical Rating Scale(N.R.S.), McGill's modified questionnaire (including Body Charts),	

UNIT III : Manual Therapy with Clinical Reasoning	12 Hrs.
Basics in Manual Therapy with Clinical Reasoning: Assessment of Articular and extra articular soft tissue status Contractile tissues, Non contractile tissues, Examination of joint integrity, Accessory movement, End feel Examination of musculoskeletal Dysfunction: Subjective examination, Objective examination, Special tests, Functional Diagnosis using ICF.	

UNIT IV: Neurological Assessment and Movement Dysfunction	12 Hrs.
Neurological Assessment and Movement Dysfunction, Higher functions, Cranial nerves, Sensations, sensory organization & body image, Joint mobility, Tone, Reflexes-Superficial & Deep, Voluntary control, Muscle Strength, Co-ordination, Balance, Endurance, Trick movements, Limb Length, Posture deviations, Gait deviations due to neurological dysfunction, Functional Diagnosis using I.C.F., electro diagnosis- Faradic Galvanic Test, Strength Duration Curve-tests, Test for Sensory & Pain Threshold/Pain Tolerance.	

UNIT V: Electro-Myography and Scales	12 Hrs.
Electro-Myography Definition Instrumentation Basic components like C.R.O., Filter, Amplifier & Preamplifier and Types of Electrodes Normal & Abnormal E.M.G. pattern at rest on minimal contraction on maximal contraction Nerve Conduction Studies, Principles & Technique, F wave H reflex), routine Biochemical Investigations. SCALES: Berg Balance, Modified Ashworth, F.I.M., Barthel Index, G.C.S., D.G.I., M.M.S., S.T.R.E.A.M. & A.S.I.A..	

Practical:	30 Hrs.
Student shall be able to perform the Demonstration of all the test procedures mentioned in the syllabus on self / human model and provide interpretation of x ray image.	

Total Hours: 90

TEXT BOOKS :	
1.	Orthopaedic Physical Examination–Magee
2.	Clinical Electro Therapy – Nelson – Currier --- Appleton & Lange publication
3.	Clinical Electromyography–Mishra
4.	Physical Rehabilitation, Assessment and treatment - Susan BO's Sullivan
5.	Neurological Examination –John Patten

REFERENCE BOOKS :	
1.	Maitland''s book on Manual therapy,
2.	Mobilisation of Extremities – Kaltenborn
3.	Clinical Electromyography–Kimura
4.	Orthopaedic Physical therapy–Donnatelli

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|----|---------------------------------------|
| 5. | NAGS, SNAGS and MWMS – Brian Mulligan |
|----|---------------------------------------|

WEB REFERENCES:

- | | |
|----|---|
| 1. | https://www.apta.org/patient-care |
| 2. | https://www.mayoclinic.org/healthy-person |
| 3. | https://www.ncbi.nlm.nih.gov/books/NBK309/ |
| 4. | https://www.who.int/classifications/icf/en/ |
| 5. | https://orthobc.com/ |

K. N. Jena
BoS Chairman

U24PTP508	Clinical Education (CEd)-I	L	T	P	C	Total
		0	0	6	3	120

Students will be posted in rotation in the various wards hospitals and physiotherapy OPDs attached with the college. The students will be clinically trained to provide physiotherapy care for the patients under supervision. They will be trained on bed side approach, patient assessment, performing special tests, identifying indications for treatment, ruling out contraindications, decision on treatment parameters, dosage and use relevant outcome measures under supervision. Evidence based practice will be part of training. Critique Enquiry, Case Presentation, and Case Discussion shall be essential part of posting. Each student shall maintain a case portfolio / diary to record the various activities performed during clinical posting. This diary should be presented before the final exam and the grade should be awarded by the college.

K. N. Jena
BoS Chairman

U24PTP509	Cupping Therapy	L	T	P	C	Total
		0	0	2	1	30

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the complete concept of cupping therapy, it's method and types, uses on different diseased conditions etc.
CO2 :	Discuss cupping from the point of modern concept, Sunnah (horary) points used in the treatment to treat physical ailments.
CO3 :	Display basic knowledge of commonly occurring disorders.
CO4 :	Identify various types of cups used in dry and wet cupping therapy.
CO5 :	Demonstrate the methods of disinfecting and cleaning the instruments and material along with the treatment room according to the SOPs.

UNIT I: Principles of cupping therapy	6 Hrs.
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Discuss the mode of action of cupping therapy, Describe the concept of segmental therapy, Explain the concept of 'Qi', Explain the theory of yin and yang or five elements as per Traditional Chinese Medicine, differentiate between the traditional and modern approaches to cupping therapy, Explain the physical and metaphysical aspects to cupping therapy.

UNIT II : Introduction to Cupping Therapy	6 Hrs.
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Explain the concept of alternative and complementary medicine, Describe the history and significance of cupping therapy with respect to various countries such as China, Egypt, Greece, Arab, India, etc. Discuss the rise in popularity of cupping therapy in India, Describe the concept of cupping therapy according to different systems of medicine such as Hijama in Unani and Raktamokshana in Ayurveda.

UNIT III : Commonly used equipment in Cupping Therapy	6 Hrs.
Discuss the functioning and merits of –Automatic Electro-Magnetic Cupping Machine, plastic cups/pistol-handle valve cups/ suction gun cups, twist-top/screw top cups, cups with rubber tops/self- suction cups, magnetic cups/magnetic rubber Cups, bamboo cups, glass cups, rubber cups, silicon cups, Describe the significance of maintaining hygiene and following infection control policies in equipment and material management.	

UNIT IV: Dry Cupping Therapy	6 Hrs.
Explain Dry Cupping/ Cupping without scarification (hijamat bila shurt/hijamat jaffa), Explain the indications, contraindications, advantages of dry cupping (Imala-eMavad). Describe the concept, indications, contraindications, advantages, and steps of carrying out Weak / Light, medium, strong, moving or massage, needle, hot, moxa, herbal, empty, flash, ice/ water and magnetic cupping therapy, List various patient positions used in dry cupping therapy such as prone, Sim's lateral, sitting, supine, etc. Explain the rationale behind the dietary restrictions before the procedure in dry cupping therapy, Explain the pre-operative recommendations to be followed before dry cupping. Explain the post-operative recommendations to be followed for dry cupping therapy.	

UNIT V: Wet Cupping Therapy	6 Hrs.
Wet Cupping (Tanqiya-e- Mavad) with scarification/hijamat bil shurt/hijamat rataba/ hijamat damiya according to Unani medicine, Explain the indications of wet cupping therapy such as Apoplexy, Bronchial asthma, chronic, high blood pressure, pneumonia, influenza, Gastritis, Headache, Polyemia (polycythemia) etc, List the contraindications to wet cupping therapy such as Tuberculosis of the lung, neoplasms, hypotonia, hemophilia, anemic conditions etc, Discuss the advantages of wet cupping therapy (Imala-e- Mavad), List various conditions in which wet cupping therapy is contra-indicated such as pregnant women, patients with pacemaker, heart diseases, organ transplant etc, Describe the concept of bloodletting procedure (Raktamokshan therapy) according to Ayurveda, Differentiate between the types of bloodletting procedure ie. Shastraprayoga and anushastraprayoga, List the types of Shastraprayoga raktamokshana i.e. Pracchana (bloodletting) and Siravedhana (venepuncture), List the types of anushastraprayoga i.e. jalaukapyoga (use of leech), sringaprayoga (use of horns), alabuproyaga (use of bottle gourd), and yantraprayoga, Explain the rationale behind the dietary restrictions before the procedure in wet cupping therapy, Explain the pre-operative recommendations	

to be followed before wet cupping, Explain the post-operative recommendations to be followed before wet cupping, Explain the process of diagnosis with cupping marks.

Total Hours: 30

TEXT BOOKS :

1.	The guide to Modern Cupping Therapy –Shannon Gilmartin
2.	Cupping Therapy Guide For Beginners-Archie Clayton

REFERENCE BOOKS :

1.	Cupping Therapy –Katharina Dorwart
2.	Complete Book of Cupping Therapy- Dr. Sheeri Siddiqui

WEB REFERENCES :

1.	https://my.clevelandclinic.org/health/treatments/16554-cupping
2.	https://pmc.ncbi.nlm.nih.gov/articles/PMC6435947/pmc.ncbi.nlm.nih
3.	https://www.frontiersin.org/journals/neurology/articles/10.3389/fneur.2023.1266712/full
4.	https://www.sciencedirect.com/science/article/pii/S2005290117302042sciencedirect
5.	https://www.ncbi.nlm.nih.gov/pmc/ [derived from patterns in]

K.N. Jena
BoS Chairman

U24PTT510	Podiatry - I	L	T	P	C	Total
		2	0	0	2	30

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Demonstrate adherence to appropriate infection control procedures.
CO2 :	Take a basic patient history and conduct a podiatric physical examination.
CO3 :	Perform routine podiatric treatments and biomechanical, musculoskeletal and basic neurovascular assessments.
CO4 :	Apply padding and strapping to the foot and ankle.
CO5 :	Describe and demonstrate appropriate professional behaviour and communication.

UNIT I : Introduction	6 Hrs.
What is Podiatry? , Branches of Podiatry, Role of podiatrists- Screening, Management strategies- (Foot injury, Footwear, Ulceration, High grade clinical care), Education, Wound management & mini debridement, Patient intervention – (Guidelines on risk, Annual risk assessment, Wound care, Routine care ,Treating calluses and corns, Padding to distribute pressure, Trimming toe nails), Foot (size, style, region, construction), Suturing (common less of unilateral edema, bilateral edema, Professional advice on – (Prevention of foot problems, Proper care of foot, All ages, See with risk of amputation /DM /Arthritis), Why in Diabetics?	

UNIT II : General Diabetology	6 Hrs.
What is Diabetes?, Definition, GTT Fasting, Post prandial sugars, HBA1C, Why is it important in India?, Status of diabetic patients, Bare foot walking, Neuropathy, The different types of diabetes - Type 1, Type 2, FCPD, Causes and Risk factors of diabetes: Hereditary, Life style, Age, BMI & stress, Complications and treatment of diabetes: Neuropathy, Retinopathy, Nephropathy, Infections,	

Peripheral vascular disease, Coronary artery disease, Management of Diabetes: Diet & Exercise, Treatment: Oral hypoglycemic agents, Insulin (GLP1 analogues, DPP4 inhibitors).

UNIT III: Definition	6 Hrs.
Diabetic foot, Diabetic foot syndrome, Natural history, Neuropathy (Callus, plantar neuropathy ulcer, infection, diabetic gangrene, PVD (Peripheral Vascular Disease), concurrent dental illness Primary risk factors: Neuropathy, Ischemic, Ischemic Neuropathy Secondary Risk Factors: Late diagnosis, Risk of PVD (Peripheral vascular disease), Depression.	

UNIT IV: Structure / Anatomy	6 Hrs.
Shapes of foot. Skin/ Nails, Arches, Bones, Joints, Muscles, Vascular, Neurological Callus: Present in review application of Ischemic callus, callus around ulcers	

UNIT V: Functional Anatomy / Bio Mechanics	6 Hrs.
Standing, Stability, Walking, Midstance, Gait cycle, Gravity Callus: Present in, Removal of callus, Application, Ischemic callus, Callus around ulcers	

Total Hours: 30

TEXT BOOKS :	
1.	Frowen P, O'Donnell M, Burrow G, Lorimer DL (Eds). (2010) Neale's disorders of the foot (8th edition) Churchill Livingstone Elsevier. Edinburgh.

REFERENCE BOOKS :

1.	Turner W, Merrimen L (Eds). (2005) Clinical Skills in treating the foot (2nd edition). Churchill Livingstone Elsevier Yates B (Ed). (2009) Merriman's Assessment of the Lower Limb (3rd Edition). Elsevier. Edinburgh; New York
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WEB REFERENCES :	
1.	https://www.sciencedirect.com/topics/medicine-and-dentistry/podiatrysciencedirect
2.	https://pubmed.ncbi.nlm.nih.gov/16546956/
3.	https://www.acfas.org/research/classic-articles-list
4.	https://nslhd.libguides.com/podiatry
5.	https://inova.libguides.com/podsinova.libguides

K. N. Teera
BoS Chairman

U24XX5XXX	Generic Elective –III Ergonomics importance for students	L	T	P	C	Total
		1	1	0	2	30

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the principles of workplace biomechanics and analyze the effects of cumulative trauma on the back, hand/wrist, shoulder, and neck.
CO2 :	Evaluate workplace environments by considering employee body size, anthropometric data, and individual differences to improve ergonomic fit.
CO3 :	Apply standard ergonomic assessment tools such as OWAS, RULA, REBA, and the Strain Index to identify and assess workplace risk factors.
CO4 :	Design ergonomic workplace solutions to reduce musculoskeletal disorders and enhance employee safety and productivity.
CO5 :	Assess the influence of psychosocial and work organization factors on employee health and develop strategies for implementing and maintaining an effective ergonomics program.

UNIT I : Biomechanical analysis	6 Hrs.
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Structure of the back, hand/wrist, shoulder, and neck, and how these joints are impacted by cumulative trauma, Principles of workplace biomechanics.

UNIT II : Work place Assessment	6 Hrs.
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Integrating employee body size and individual differences in workplace

UNIT III: Ergonomic Assessment	6 Hrs.
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The use of state-of-the-art ergonomics assessment tools including OWAS, RULA, REBA, and the Strain Index

UNIT IV: Workplace design	6 Hrs.
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Workplace design solutions for reducing musculoskeletal disorders and improving productivity

UNIT V: psychosocial analysis

6 Hrs.

How psychosocial and work organization factors impact employee health, setting up and maintaining an effective ergonomics process, Ergonomics Importance for Students.

Total Hours: 30

TEXT BOOKS :

1. Kreighbaum E., Barthels K: Biomechanics _ A Qualitative approach for studying human motion, 2nd edn. 1985, Macmillan.
2. Rasch& Burk: kinesiology and Applied Anatomy, Lee & Fabiger

REFERENCE BOOKS :

1. White and Punjabi – Biomechanics of Spine – Lippincott.
2. Norkin&Levangie: Joint Structure and function - A Comprehensive Analysis – F.A. Davis

WEB REFERENCES :

1. <https://www.osha.gov/ergonomics>
2. <https://www.cdc.gov/niosh/topics/ergonomics/>
3. <https://iea.cc/>
4. <https://ergonomics.cornell.edu/>
5. <https://www.ccohs.ca/topics/hazards/ergonomic/>

K.N. Jena
BoS Chairman

U24UMP510	Takshashila Innovative Learning -V	L	T	P	C	Total
		0	0	2	1	30

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Leading physiotherapy care center, leverages cutting-edge technology and innovation to optimize recovery processes.
CO2 :	We use modern technology in diagnostics and which help us plan therapy for you at a personalized level, so that you can be on your best path to recovery.
CO3 :	We also offer tele-rehabilitation which provides convenient, remote access to expert guidance, while wearable devices offer real-time monitoring and feedback.
CO4 :	These innovations enable to deliver superior patient-centered care, promoting faster, more effective recovery.
CO5 :	Leading physiotherapy care center, leverages cutting-edge technology and innovation to optimize recovery processes.

WEEK 1

The pandemic accelerated the adoption of telehealth, including virtual physiotherapy. This trend provides remote access to consultations, tele rehabilitation, and home exercise programmers, improving accessibility and convenience.

WEEK 2

Wearable devices and mobile health apps are revolutionizing physiotherapy.

WEEK 3

These technologies monitor physical activity and vital signs, allowing physiotherapists to offer personalized treatment plans and track progress accurately.

WEEK 4

AI and machine learning are set to transform physiotherapy.

WEEK 5

AI algorithms can analyse patient data to predict outcomes and customize rehabilitation programmes, improving early diagnosis and intervention.

WEEK 6

Robotic technology, including exoskeletons and assistive devices, aids in rehabilitation, especially for patients with severe injuries or neurological conditions.

WEEK 7

These devices enhance recovery by providing support and resistance during exercises.

WEEK 8

3D printing allows for the creation of custom orthotics and prosthetics, providing precise and personalized fit, enhancing patient comfort, and improving mobility.

K. N. Teera
BoS Chairman

U24UMP512	Green Credit-V Terrace Garden Establishment	L	T	P	C	Total
		0	0	2	1	30

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the concepts, types, importance, site selection, layout, benefits, and essential tools and materials required for establishing a terrace garden.
CO2 :	Apply appropriate water, soil, pest, and plant management practices, including plant protection measures, to maintain a healthy and productive terrace garden.

UNIT I : Introduction	15 Hrs.
Definition and importance of terrace gardening, Types of terrace gardening, Selection of site and layout, Benefits of a terrace garden, Basic tools and materials required	

UNIT II : Management Practices	15 Hrs.
Water management, Soil management, Pest management, Plant maintenance, Plant protection measures	

Total Hours: 30

TEXT BOOKS :	
1.	Kreighbaum E., Barthels K: Biomechanics _ A Qualitative approach for studying human motion, 2nd edn. 1985, Macmillan.
2.	Rasch& Burk: kinesiology and Applied Anatomy, Lee & Fabiger

REFERENCE BOOKS :	
1.	White and Punjabi – Biomechanics of Spine – Lippincott.

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K.N. Jena
BoS Chairman

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