Course Description / Level Three

Physical therapy for internal diseases	**Course Name -1**
PTT301	**Course code -2**
First semester / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**
In-person lectures	**Available forms of attendance -5**
hours of theory + 45 hours of practical 30 work / 3 units	**Number of credit hours (total) / Number of units (total) -6**
Dr. Ali Hussein	**course coordinator Name of the list all names, if there is more than) (one -7**

Course Objectives-8

1. **Understanding the types of diseases that affect certain systems of the human body**
2. Understanding medical terminology related to internal diseases
3. **Identifying the causes of internal diseases: signs and symptoms**
4. **Understanding the field of medical rehabilitation and its role in treating internal diseases**

Teaching and learning strategies -9

A. Cognitive objectives

 Understanding **the** concept of common internal diseases (respiratory, cardiovascular, digestive, .(urinary, and endocrine diseases

) Understanding the physiological and pathological foundationspathophysiology associated (.with these diseases and their impact on the various body systems

 Identifying the basic clinical signs and symptoms that accompany internal diseases and their .impact on the patient's physical and functional activity

 Knowledge of the general principles of medical diagnosis and laboratory and radiological .examinations related to internal diseases

 Explaining the role of physiotherapy in the prevention, treatment, and rehabilitation of patients .with internal medicine conditions

 Analysis of methods of assessment and clinical examination of internal medicine patients from .the perspective of physical therapy

 Recognizing the importance of using therapeutic exercises, respiratory therapy techniques, and .rehabilitation programs in improving patients' quality of life

 Explaining the potential complications of internal diseases and how to deal with them within the .physical therapy plan
 Comparison between different therapeutic intervention methods according to the type of disease .and the patient's condition
) Applying scientific principles in developing evidence-based treatment plansEvidence-Based Practice .(

.B. The specific skills objectives of the course

thorough clinical examination of internal medicine patients Performing a B1- .(measuring vital signs, assessing respiration, and examining functional capacity)

Applying physiotherapy techniques specific to the respiratory system, such as: B2- ,deep breathing exercisespostural drainage and manual methods to help improve , .ventilation

B3- Implementing safe and effective treatment programs for patients with cardiovascular diseases (such as progressive endurance exercises and prevention of .(complications

B4- Mastering the use of assistive devices (such as theIncentive Spirometer lung , .(capacity measuring devices, and the stress monitor

B5- Training the patient onEnergy Conservation Techniques and managing shortness .of breath

Designing practical, individualized treatment plans that are appropriate to the B6- patient's internal condition, taking into account individual differences and functional .ability

B7- Implementing rehabilitation programs after internal surgical procedures (such as .heart or chest surgery) according to physical therapy protocols

B8- Applying manual therapy techniquesappropriate to certain cases to improve .movement and function

B9- Monitoring the progression of the disease through continuous reassessment and .adjustment of the treatment plan

Employing practical communication skills with the patient and his family to B10- teach them the exercises and precautions that must be followed after leaving the .hospital

Teaching and learning methods

,Theoretical lectures, practical lectures, clinical training, group discussions presentations

Assessment methods

Daily tests, term exams - final exams

C. Affective and value-based objectives

Developing a sense of professional and ethical responsibility in dealing with internal medicine .patients of different ages and conditions
Enhancing human empathy towards the patient, and the ability to understand his physical and • .psychological suffering
the Instilling values of respect for the patient and their rights, and preserving their privacy and .confidentiality of their medical data
 Encouraging work in the spirit of an integrated healthcare team (doctors, nurses, physical .therapists) in a way that serves the patient's best interests
Commitment to effective communication with patients and their families in clear and reassuring • .language
 Appreciating the importance of health education in preventing internal diseases and reducing .their complications
.Developing a spirit of patience and endurance in dealing with chronic or long-term conditions
 Establishing professional values associated with the practice of physiotherapy in accordance with .safety and quality standards
 Conviction in the importance of scientific research and scientific evidence in developing physical .therapy programs for internal diseases
 Promoting the values of humanitarian giving by supporting the patient to regain their .independence and improve their quality of life

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and .(personal development

D1- **Developing critical thinking and analytical skills** to understand complex .internal medicine cases and link them to an appropriate physical therapy plan
D2- **Enhancing problem-solving skills** by dealing with complications or unexpected .responses to treatment
to D3- **Acquiring effective communication skills** with patients and their families .explain treatment instructions and health guidelines
D4- **Developing teamwork skills** within the medical team (doctors, nurses, .nutritionists) to achieve integrated care
D5- **Developing time management skills** and organizing therapy sessions in a way .that suits the patient's condition and treatment plan
D6- **Enhancing adaptability and flexibility** in dealing with emergencies or patients .with chronic diseases
D7- **Instilling a culture of self-learning and continuous development** to keep up .with scientific and clinical developments in the physical therapy of internal diseases
D8- **Acquiring health education skills** to spread awareness of the importance of .preventing internal diseases through a healthy lifestyle

D9- **Developing scientific research and academic writing skills** to present clinical .cases or prepare scientific reports

D10- **Enhancing professional values and employability** through adherence to ethical and professional standards in the workplace

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	History taking	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hypertension: Definition, Etiology, Pathophysiology, Signs & Symptoms, Prevention, Effects of exercises on blood pressure.	Knowledge and Application	Theory 2 3 + Practical	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Diabetes mellitus: Definition, Etiology, Classification, Pathophysiology, Signs & Symptoms, Prevention, Complications, Role of physiotherapy	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Human deficiency syndrome: Definition, Epidemiology, Etiology, Pathophysiology, Staging, Signs & Symptoms, Prevention, Complications, Role of physiotherapy	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hepatitis: Definition, Etiology, Classification, Pathophysiology, Signs & Symptoms, Prevention, Complications	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Anemia: Definition, Epidemiology, Etiology, Signs & Symptoms, Prevention, Complications.	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written	Whiteboard, PowerPoint slides	Leukemia: Definition, Etiology, Classification, Staging, Signs &	Knowledge and Application	Theory 2 3 + Practical	Seventh

theory exams		Symptoms, Complications, Role of physiotherapy			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Multiple myeloma and lymphoma: Definition, Etiology, Pathophysiology, Signs & Symptoms, Complications, Role of physiotherapy	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Deep venous thrombosis: Definition, Etiology, Pathophysiology, Signs & Symptoms, Prevention, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Renal failure: Definition, Etiology, Classification, Signs & symptoms, Complications, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Gastroesophageal reflux, irritable bowel syndrome: Definition, Etiology, Signs & Symptoms, Prevention, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Liver cirrhosis: Definition, Etiology, Pathophysiology, Signs & Symptoms, Complications, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hypo and hyperthyroidism: Definition, Etiology, Signs & Symptoms, Complications, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Adrenal gland disorders: Definition, Etiology, Signs & Symptoms, Complications, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Revision	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11
Student activities and reports, oral and written theoretical and practical exams
12 Learning and Teaching Resources -

Hillegass, E. (2016). *Essentials of Cardiopulmonary Physical Therapy* (4th ed.). Elsevier	Required textbooks (curriculum (books, if available
Frownfelter, D., & Dean, E. (2012). *Cardiovascular and Pulmonary Physical Therapy: Evidence and Practice* (5th ed.). Elsevier	Main references (sources)
Journal of Cardiopulmonary Rehabilitation and Prevention	Recommended books and references (scientific journals (...and reports
Physiopedia – Cardiopulmonary Physiotherapy	Electronic references and websites

Physical therapy for advanced surgery	Course Name -1
PTT302	Course code -2
Chapter Two / 2025-2026	Semester / Year -3
15/9/2025	Date of preparation of the -4 description
In-person lectures	Available forms of -5 attendance
hours of theory + 45 hours of practical work 30 units 3 /	Number of credit hours -6 (total) / Number of units (total)
Dr. Salam Muhannad Salman	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

Enabling the student to apply rehabilitation programs appropriate to different surgical .1 .cases

and post-operative care for To familiarize the student with the role of physiotherapy in pre- .2 .advanced surgical procedures

3. .To equip the student with the skills to assess patients after surgical operations

Preparing the student to deal with common complications after surgical procedures (such .4 .(as blood clots, shortness of breath, adhesions

Teaching and learning strategies -9

A. Cognitive objectives

 To become familiar **with** the general principles of advanced surgery and its types (cardiac and .(…thoracic surgery, brain and nerve surgery, complex bones, tumor surgery
Understanding the physiological and pathological basis of the changes that occur after major .surgical operations and their impact on the body's systems
 Understanding the potential complications after surgery (such as: blood clots, infection, .hypokinesia syndrome) and the role of physiotherapy in preventing them
 Explanation of the different stages of rehabilitation after advanced surgical procedures and the .steps of physical therapy in each stage
 Identifying the specific indications and precautions for each type of surgical procedure before .starting physical therapy
 Analysis of rehabilitation protocols used in advanced surgeries (such as cardiopulmonary .(rehabilitation, neurological rehabilitation
Interpreting the results of medical, radiological, and laboratory tests and linking them to the .physical therapy plan

.B. The specific skills objectives of the course

thorough clinical assessment of advanced post-surgical Conducting a B1- patients (measuring vital signs, assessing respiration, muscle strength, and .(functional movement

B2- Applying physiotherapy protocols specific to different surgical cases such as: heart and chest surgeries, complex orthopedic surgeries, and nervous system .surgeries

Mastering respiratory therapy techniques (deep breathing exercises, B3- postural drainage, effective coughing techniques) for patients after chest or .abdominal surgeries

Implementing early rehabilitation programs within the hospital to reduce B4- .complications and improve the speed of recovery
B5- Using assistive devices (such as electrotherapy devices, respiratory exercise .devices, and walking aids) correctly and safely
Designing individual treatment plans that are appropriate to the patient's B6- .condition, the type of surgical procedure, and the stage of recovery
B7- Implementing strategies to prevent common post-operative complications .such as: deep vein thrombosis, muscle atrophy, and reduced mobility
Training patients in progressive therapeutic exercises to improve physical B8- .ability and restore daily functions
B9- Adjusting the treatment plan according to the patient's response and .clinical changes during the rehabilitation phases
Effective communication with the medical and nursing team to ensure the B10- .integration of care provided to the patient
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods
Daily tests, term exams - final exams
C. Affective and value-based objectives
Enhancing the sense of professional and ethical responsibility when dealing A1- .with patients after complex surgical procedures
spirit of human empathy towards the patient and Developing a Q2- .understanding his physical and psychological suffering after surgery
Commitment to the values of respecting the patient and his rights, and C3- .preserving his privacy and the confidentiality of his medical data
cooperation and teamwork with doctors and nursing staff to Encouraging Q4- .ensure the provision of integrated care
Instilling the values of patience and flexibility in dealing with chronic cases or C5- .those requiring long-term rehabilitation

Q6- Appreciating the importance of the role of physiotherapy in improving the quality of life of patients after surgery and supporting their independence

Conviction on the necessity of applying safety and quality standards in all C7- stages of post-operative physiotherapy

Developing effective communication skills with patients and their families to Q8- increase their awareness of the importance of rehabilitation and commitment to home exercises

Q9- Establishing a culture of scientific research and reliance on scientific evidence)Evidence-Based Practice .in making therapeutic decisions (

Promoting human values related to giving and supporting patients in their Q10- treatment journey

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and .(personal development

D1- Development Critical thinking and scientific analysis skills when dealing with complex surgical cases

Enhancing problem-solving skills by developing individualized treatment plans D2- tailored to each patient

D3- Acquisition Effective communication skills with patients, their families, and members of the multidisciplinary medical team

D4- Developing teamwork and cooperation skills within the healthcare environment .to ensure the integration of therapeutic services

D5- Development Leadership and decision-making skills in different clinical situations

D6- Strengthening Time management skills and organizing therapy sessions in .accordance with the patient's plan and clinical schedules

D7- Planting continuous development to keep up with A culture of self-learning and scientific advancements in the field of physiotherapy and surgery

D8- Acquisition Adaptability and flexibility skills in dealing with work pressures and emergencies

D9- Mastery Using and employing medical technology (physical therapy and .assessment devices) effectively

D10- Developing scientific research and academic writing skills to prepare reports or studies related to surgical cases

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Introduction: Role of physiotherapy in advanced surgery, principles of pre- and post-operative rehabilitatio n	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Thoracic surgeries: definitions, indications, surgical incisions, complications.	Knowledge and Application	Theory 2 3 + Practical	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Physiotherapy management after thoracic surgeries.	Knowledge and Application	Theory 2 3 + Practical	the third

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cardiac surgeries: open and closed heart surgery – indications, complications, physiotherapy management	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Pulmonary and chest injuries: etiology, clinical presentation, complications	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Traumatic Brain Injury (TBI): Causes, mechanism, Glasgow Coma Scale, surgical interventions.	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Physiotherapy in moderate to severe TBI.	Knowledge and Application	Theory 2 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Brain tumor surgery: indications, complications, physiotherapy management.	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Spinal surgeries (Cervical & Lumbar): Indications, complications, physiotherapy rehabilitation .	Knowledge and Application	Theory 2 3 + Practical	Ninth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Pelvic surgeries: indications, complications, physiotherapy management	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Peripheral vascular surgeries: varicose veins, bypass grafting – physiotherapy role.	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Abdominal and bariatric surgeries: post-operative complications and rehabilitation	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Gynecological surgeries: Cesarean section, hysterectomy – physiotherapy management.	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Organ transplantation: liver, kidney, lung – physiotherapy role in early recovery .	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Burns and reconstructive surgeries, ICU physiotherapy, revision of course	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11
Student activities and reports, oral and written theoretical and practical exams

Learning and teaching resources -12	
Payne, W. K., & Jan, Y. K. (2018). *Surgical Conditions and Physical Therapy Management.* F. A. Davis.	Required textbooks (curriculum (books, if available
Hertling, D., & Kessler, R. M. (2018). *Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods* (5th ed.). Wolters Kluwer	Main references (sources)
Journal of Rehabilitation Medicine	Recommended books and references (scientific journals and (...reports
American Physical Therapy Association (APTA)	Electronic references and websites

Fundamentals of physiotherapy for neurological diseases	Course Name -1
PTT303	Course code -2
Chapter One / 2025-2026	Semester / Year -3
15/9/2025	Date of preparation of the -4 description
In-person lectures	Available forms of -5 attendance
hours of theory + 45 hours of practical work 30 units 3 /	Number of credit hours -6 (total) / Number of units (total)

course Name of the -7 coordinator (list all names, if (there is more than one	Dr. Ibrahim Kazem Nouri

Course Objectives-8

Identifying diseases affecting the central nervous system and the peripheral nervous system
Understanding the basic sciences to provide knowledge about aspects related to 1- neuroscience and neurological diseases
Identifying various acquired neurological diseases and problems in adults -3 2- Familiarization with medical topics and terminology, pathophysiological causes, clinical 3- examination and evaluation, comparison of contemporary and traditional interventions, and the impact of developed technology in this field
Identifying appropriate rehabilitation programs for each medical condition using available 4- therapeutic methods and exercises

Teaching and learning strategies -9

A. Cognitive objectives

) A1-Introducing the basic principles of neuroscienceNeuroanatomy & Neurophysiology .related to physical therapy (

A2- Understanding the pathophysiologyof common neurological diseases such as: stroke, spinal cord injuries, multiple sclerosis, cerebral palsy, Parkinson's .disease, and others

A3- Distinguishing between different neurological signs and symptoms such as: .muscle weakness, balance disorders, loss of sensation, and convulsions

A4- Familiarity with the basics of neurological assessmentused in physiotherapy: assessment of muscle strength, muscle tone, reflexes, balance, .and gait

the basic principles of therapeutic interventions in neurological Identifying A5- conditions (such as therapeutic exercises, sensory-motor stimulation, functional .(movement training

A6- Understanding the role of the integrated medical team in the rehabilitation of neurological patients, and how physical therapy is integrated with other specialties

Understanding the relationship between the type of neurological injury and A7- appropriate rehabilitation in terms of short-term and long-term goals

A8- Acquiring knowledge about the assistive devicesused in neurological rehabilitation

A9- Understanding the principles of preventing secondary complications of neurological diseases such as bedsores, joint stiffness, and poor physical fitness

A10- The ability to link theoretical knowledge with practical application in developing initial physical therapy plans for various neurological conditions

.B. The specific skills objectives of the course

B1- Conduct a thorough neurological clinical assessment (such as examining (muscle strength, muscle tone, nerve reflexes, balance, and motor coordination

functional neurological assessment tests to determine the patient's ability to .perform daily living activities

B3- Designing and implementing initial physical therapy programs for neurological conditions in accordance with the individual rehabilitation goals of .each patient

***PNF* neuromuscular facilitation techniques , walking training, balance .(exercises**

B5- Properly employing assistive tools and devices in rehabilitation (crutches, .(splints, walking training devices

B6- Implementing strategies to prevent complications such as bedsores, joint stiffness, and muscle atrophy

B7- Training the patient and his family on self-care techniques and strategies to .improve quality of life

B8- The ability to monitor the patient's response to treatment and adjust the treatment plan according to clinical changes

B9- Demonstrate effective clinical communication skills with the patient, their family, and members of the medical team

theoretical knowledge with the practical aspect through clinical Integrating B10- simulation and virtual/realistic cases
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods
Daily tests, term exams - final exams
C. Affective and value-based objectives sense of human and professional responsibility in dealing with To promote a A1- .neurological patients with respect and dignity spirit of empathy and patience with patients and their families, Developing a C2- .due to the physical and psychological disabilities they suffer) C3- Adherence to professional ethics in the practice of physiotherapy Confidentiality, Integrity, Respect .(Instilling the value of teamwork and cooperation with the multidisciplinary C4- .medical team to achieve rehabilitation goals the student to adopt the principle of continuous learning and Encouraging Q5- .to keep up with modern developments in the treatment of neurological diseases Developing awareness of the importance of prevention and spreading health C6- .education to patients and their families Enhancing self-confidence and the ability to make decisions in clinical C7- .situations Instilling the value of humanity before the profession by dealing with the Q8- .patient as a complete person and not just a medical case commitment to time and discipline in clinical training and Encouraging C9- .professional work

Instilling values of positivity and hope in helping the patient improve their quality of life despite neurological disability Q10-
Teaching and learning methods
(In-person lectures)
●Assessment methods
Daily tests, term exams - final exams
D. General and transferable skills (other skills related to employability and (personal development D1- **Developing critical thinking and problem-solving skills** when dealing with .complex neurological cases D2- **Acquiring effective communication skills** with patients, their families, and .colleagues within the medical team D3- **Working as a team** and cooperating with other medical specialties to achieve an .integrated treatment plan .D4- **Effective time management** in therapy sessions and clinical training D5- **Developing scientific research skills** and staying informed about modern .references and studies in neurophysiotherapy D6- **Using modern medical technology** and computer programs in assessment and .rehabilitation D7- **Developing self-learning** and lifelonglearning skills .) D8- **Enhancing the ability to make** evidence-based clinical decisionsEvidence-Based Practice .(D9- **Developing leadership and supervisory skills** when dealing with cases or .training others D10- **Building self-confidence and independence** in practicing the profession, which enhances employability in the labor market
Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Medical terminology regarding neurological system, Anatomy and Physiology of the nervous system (Brain, CNS Support Structures, Neurons, PNS, Spinal Level Reflexes).	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Neurological assessment (Higher mental function, assessment of brain, evaluation of cranial nerves and evaluation of autonomic nervous system)	Knowledge and Application	Theory 2 3 + Practical	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Investigations (principles, methods, views, normal/abnormal values/features of following investigative procedures in brief- skull x-ray, CT, MRI, evoked potentials, lumbar puncture, EMG, NCV).	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cerebro-vascular diseases: Define stroke, TIA, stroke in evolution, Lacunar infarct, Classification of stroke – Ischemic, hemorrhagic, venous infarcts	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cerebro-vascular diseases: Early warning Sign & Prevention. Risk factors, causes of ischemic stroke, causes of hemorrhagic stroke, Classification of	Knowledge and Application	Theory 2 3 + Practical	Fifth

		hemorrhagic stroke, classification of stroke, stroke syndrome, investigations .			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cerebro-vascular diseases: complications, medical and surgical management, physical therapy management	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Facial palsy, Bell's palsy: Causes, clinical features, physical therapy management .	Knowledge and Application	Theory 2 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Multiple sclerosis: pathophysiology, causes, clinical presentation, physical therapy management	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Parkinson's disease: pathophysiology, causes, clinical presentation, physical therapy management.	Knowledge and Application	Theory 2 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Trigeminal neuralgia: pathophysiology, causes, clinical presentation, physical therapy management	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written	Whiteboard,	Higher cortical, neuropsychological and neurobehavioral disorders: Causes of	Knowledge and Application	Theory 2 3 + Practical	eleventh

theory exams	PowerPoint slides	blackouts, Neural basis of consciousness, causes and investigations of Coma. Perceptual disorders and Speech disorders.			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Movement disorders: Definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, medical management	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	. Movement disorders: Definition, etiology, risk factors, pathophysiology, classification, clinical signs & symptoms, investigations, medical management, surgical management and complications of following disorders –, Myoclonus and Wilson's disease	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cerebellar and coordination disorders: Etiology, Pathophysiology, classification, clinical signs and symptoms, investigations, differential diagnosis, management of Congenital ataxia, Friedreich's ataxia, Tabes dorsalis and Syphilis .	Knowledge and Application	Theory 2 3 + Practical	fourteenth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	General Revision	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Umphred, D. A., Lazaro, R. T., Roller, M., & Burton, G. U. (2013). *Umphred's Neurological Rehabilitation* (6th ed.). Elsevier	**Required textbooks (curriculum (books, if available**
Lundy-Ekman, L. (2020). *Neuroscience: Fundamentals for Rehabilitation* (6th ed.). Elsevier	**Main references (sources)**
Journal of Neurologic Physical Therapy (JNPT)	**Recommended books and references (scientific journals (...and reports**
Physiopedia – Neurological Physiotherapy:	**Electronic references and websites**

Physical therapy for spinal cord injuries	**Course Name -1**
PTT304	**Course code -2**
Chapter Two / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**

In-person lectures	Available forms of -5 attendance
hours of theory + 45 hours of practical 30 work / 3 units	Number of credit hours -6 (total) / Number of units (total)
Dr. Ibrahim Kazem Nouri	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

Understanding the anatomy, physiology, and function of the spinal cord and -1 .the most common injuries it is exposed to

Identifying spinal cord injuries and diseases that affect it -2

the most important pathological causes of diseases and disorders Identifying -3 affecting the spinal cord

medical treatments and surgical interventions for treating these Identifying -4 injuries

Recognizing clinical symptoms, differential diagnosis, and assessment of -5 disorders affecting the spinal cord

Understanding the role of physiotherapy and the necessary medical -6 rehabilitation to treat various injuries using appropriate therapeutic methods and exercises in rehabilitating those injuries

Teaching and learning strategies -9

A. Cognitive objectives

A1- Introduction to the neuroanatomy and neurophysiologyof the spinal cord .and its relationship to motor and sensory functions

A2- Understanding the pathophysiologyof spinal cord injuries of all types .(complete/incomplete) and their impact on neurological functions

Distinguishing the different clinical signs and symptoms associated with A3- levels of spinal cord injury such as: paralysis, loss of sensation, convulsions, and .bladder and bowel control disorders

with the basics of neurological assessment in cases of spinal cord injuries, including theASIA classification assessment of muscle strength, , muscle tone, .balance, and reflexes	Familiarity A4-
the basic principles of therapeutic interventions used in cases of spinal cord injury, such as: therapeutic exercises, training in sitting, standing .and walking, and electrical stimulation	Identifying A5-
A6- Understanding the role of the multidisciplinary medical team in the rehabilitation of spinal cord injury patients, and how to integrate physiotherapy .with medical, nursing, psychological and social therapy	
Understanding the relationship between the level of spinal cord injury and .appropriate rehabilitation plans in terms of short-term and long-term goals	A7-
A8- Acquiring knowledge about assistive devicessuch as wheelchairs, .orthopedic devices, and walking training devices	
A9- Understanding the principles of preventing secondary complications of spinal cord injuries such as: bedsores, joint stiffness, osteoporosis, and poor .physical fitness	
to link theoretical knowledge with practical application by developing initial and integrated physical therapy plans for patients with spinal cord injuries	The ability A10-
.B. The specific skills objectives of the course	
) B1- Developing the skill of taking a medical historyHistory Taking related to .spinal cord injuries accurately and comprehensively	(
B2- To equip the student with the ability to conduct clinical examination and neurological assessment of patients, including assessment of muscle strength, .balance, reflexes, and patient position	
Training the student to use and classify spinal cord injuries according to the)ASIA Scale .and to interpret its results practically	B3- (
Enabling the student to design individual physical therapy plans that suit .the level of injury and the treatment goals of each patient	B4-
Mastering the application of appropriate therapeutic exercises (movement therapy, balance exercises, walking exercises, breathing exercises) according to .the patient's needs	B5-

Equipping the student with the ability to use therapeutic devices and B6- equipment (such as electrical stimulation devices, orthopedic devices, .wheelchairs) efficiently and safely
Developing the skill of monitoring and evaluating the patient's progress on a B7- regular basis, and adjusting the treatment plan according to the clinical .response
Training the student to educate the patient and his family on methods of B8- daily care, prevention of complications, and promotion of functional .independence
Enhancing teamwork skills with other members of the multidisciplinary B9- .medical team to ensure comprehensive patient care
Developing clinical problem-solving skills and the ability to handle B10- emergencies or sudden complications during therapy sessions
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods
Daily tests, term exams - final exams
C. Affective and value-based objectives
sense of professional and ethical responsibility in dealing with Developing a A1- .patients with spinal cord injuries
C2- Enhancing empathywith the patient and appreciating their psychological and physical suffering, in order to achieve a supportive, humane therapeutic .relationship
Instilling the values of patience and commitment in following up on long- C3- .term treatment for these chronic conditions
Promoting respect for the patient's dignity and rights to choose and C4- .participate in treatment decisions
Establishing the concept of collaborative teamwork with the Q5- .multidisciplinary medical team to serve the patient in an integrated manner

C6- Encouraging the student to adopt the values of lifelong learning and to stay informed about the latest scientific developments in the field of .neurorehabilitation

spirit of initiative and positivity in facing the challenges and Instilling a Q7- .difficulties that may hinder the progress of the treatment plan

Strengthening adherence to occupational safety rules and protecting the C8- .patient from any complications during treatment sessions

Q9- Establishing the value of humanity in caring for patients with disabilities .and integrating them into society

Promoting respect for the cultural, social and psychological diversity of Q10- .patients to ensure the provision of fair and inclusive care

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and .(personal development

D1- Developing effective communication skillswith patients, their families, and .the multidisciplinary medical team

D2- Enhancing the ability to think criticallyand analyze logically when .developing treatment plans and making clinical decisions

D3- Equipping the student with time management skills and organizing therapy .sessions in a way that achieves efficiency and quality in providing the service

) D4- Developing the ability to work within a teamTeamwork Skills and to (.cooperate with various medical specialties to achieve common goals

D5- Enhancing problem-solving skillsand the ability to adapt to complex and .changing clinical situations

Equipping the student with leadership and supervisory skills in clinical D6- .practices and managing groups of patients or treatment teams

D7- Developing scientific research skillsand the ability to use scientific sources .to update professional knowledge

D8- Encouraging self-reliance and lifelong learningto keep pace with scientific .developments in the field of neurorehabilitation

) D9- Enhancing skills in using modern technologyDigital Literacy in (.assessment, documentation, and developing treatment plans

Preparing the student for the labor market by refining his professional, D10- clinical and personal skills in a way that increases his employability and future .professional development

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Introduction to the rehabilitation of SCI, effective system of SCI care, types of paralysis in SCI, etiology, complications, causes of death, aim of rehabilitation, rehabilitation team work, team work members, functions of team member	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Anatomy and physiology of spinal column and spinal cord: the spinal curvature functions, the ligaments & disks functions, spinal column functions, spinal cord functions, spinal circulation & meninges functions, spinal cord vascular anatomy, relationship of vertebrae to the spinal cord.	Knowledge and Application	Theory 2 3 + Practical	the second

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	ASIA classification and definitions: ASIA classification system, basic definitions of completeness with sacral sparing, sensory exam, motor exam, neurological level of injury, ASIA impairment scale	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	ASIA motor index score and guide: manual muscle testing, purposes of muscle test, factors affecting 'strength, preparation and information, assessment, contraindication and precautions, grading system in SCI, 10 key muscles	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	ASIA sensory index score and guide: types of sensory receptors, sensory nerves pathways, dermatome – sensory level, dermatomes distribution	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	SCI management at the scene of the accident: general rules, the unconscious patient: position & alignment correction, respiratory care, basic examination, 2/the conscious patient, evacuation	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Initial management of acute traumatic SCI: spinal shock, acute manifestations of spinal injury the primary medical procedures of the acute or unstable SCI, unstable SCI stages duration determining, medical procedures of the	Knowledge and Application	Theory 2 3 + Practical	Seventh

		unstable SCI, the stable (acute) injuries			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Respiratory rehabilitation functions for SCI: chest physical therapy definition, process of respiration, respiratory muscles function, respiratory system changes in SCI, respiratory complications, respiratory tests	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Respiratory rehabilitation plans the goals: exercises of respiratory muscles according to the level of injury, bronchial hygiene, treatment of spasticity effects on respiratory functions, use of the resistance in breathing, respiratory exercises, postural drainage: procedures and complications.	Knowledge and Application	Theory 2 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Respiratory rehabilitation functions for pressure ulcer: definition, stages and classification pressure ulcer causes locations, skin care and early treatment and preventio n	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of the spasticity: definition, types of SCI according to reflexes, patterns of spasticity, stretch reflex, classification of spasticity, spasticity physiology, clinical features, increasing factors, advantages and disadvantages, goal of all treatment, plan of treatment.	Knowledge and Application	Theory 2 3 + Practical	eleventh

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Deep vein thrombosis: anatomy, physiology, definition, physiological factors affected clots formation, etiology, locations, signs and symptoms, diagnosing, complications, prevention, treatment	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Contractures: definition, causes, common contractures and shortening, prevention and treatment.	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Heterotopic ossification, definition, classification, causes, diagnosis, clinical presentation, prevention and treatment, surgical intervention and physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Revision	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Kirshblum, S. C., & Lin, V. W. (2019). *Spinal Cord Medicine* (3rd ed.). Demos Medical	**Required textbooks (curriculum (books, if available**
1. Handbook of Physical Medicine and Rehabilitation Hardcover – October, 1982	**Main references (sources)**

2. Neurological Rehabilitation, 6e (Umphreds Neurological Rehabilitation) 6th Edition	
Journal of Spinal Cord Medicine	**Recommended books and references (scientific journals (...and reports**
American Spinal Injury Association (ASIA):	**Electronic references and websites**

Physical therapy for skeletal system diseases	**Course Name -1**
PTT305	**Course code -2**
Chapter One / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**

In-person lectures	Available forms of -5 attendance
hours of theory + 45 hours of practical 30 work / 3 units	Number of credit hours -6 (total) / Number of units (total)
Dr. Salam Muhannad Salman	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

Knowledge of the types of diseases that affect the musculoskeletal system-1

Familiarization with medical terminology related to the musculoskeletal -2 system

the causes of diseases affecting the musculoskeletal system: signs Identifying -3 and symptoms

Knowledge of the field of medical rehabilitation and its role in treating -4 diseases of the peripheral musculoskeletal system

treatment methods and rehabilitation programs for muscular Identifying -5 system diseases

Teaching and learning strategies -9

A. Cognitive objectives

A1- To understand the anatomical and physiological structure of the skeletal system (bones, joints, muscles, and ligaments) and its relationship to movement and function . A2- To understand
the pathophysiology of common diseases and injuries of the skeletal system, such as fractures, dislocations, arthritis, osteoporosis, spinal deformities, and sports . injuries
A3- To recognize the clinical signs and symptoms of musculoskeletal diseases such as pain, swelling, limited mobility, muscle weakness, and postural) .(deformities
A4- To be familiar with the principles of clinical assessment and examination of) patients with skeletal disorders: assessing range of motionROM muscle ,(. strength, joint stability, gait, and motor functions
A5- To learn the foundations and principles of physical therapy interventions

used in skeletal system diseases, such as therapeutic exercises, manual therapy, . electrotherapy, and heat and cold therapy **A6- To understand the relationship between risk factors (age, sex, lifestyle, . nutrition) and the occurrence of skeletal system diseases** **A7- Understanding the importance of prevention and rehabilitation and the role of physiotherapy in improving quality of life and reducing complications in patients with musculoskeletal disorders**
B1. Apply clinical examination and functional assessment skills to patients with . musculoskeletal disorders and injuries **B2. Design appropriate treatment and rehabilitation programs for each patient . based on the assessment results** **B3. Implement therapeutic interventions such as therapeutic exercises, manual . therapy, and physical therapy efficiently and safely** **B4. Use measurement tools (such asgoniometers and manual muscle testing to (. assess therapeutic progress** **B5. Document clinical data and prepare treatment reports systematically and .accurately. B. Course-Specific Skills Objectives**
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods
Daily tests, term exams - final exams
C. Affective and value-based objectives **sense of professional and ethical responsibility towards patient Developing a A1- . care** **Promoting patience and empathy towards patients and understanding their A2- . physical and psychological suffering** **A3- Adhering to professional values and ethics in dealing with patients and . colleagues** **spirit of teamwork and cooperation among members of the Fostering a A4- . healthcare team** **Raising awareness of the importance of health education and the prevention A5- .of musculoskeletal diseases**

Teaching and learning methods
(In-person lectures)
●Assessment methods
Daily tests, term exams - final exams
D. General and transferable skills (other skills related to employability and .(personal development **. Developing critical thinking and problem-solving skills in clinical settings .1** **Developing effective communication skills with patients, their families, and .2 . members of the medical team** **Acquiring the ability for continuous self-learning and keeping up with .3 . scientific advancements in physiotherapy** **Utilizing modern techniques and information technology in research and .4 . therapeutic evaluation** **Enhancing employability by equipping students with professional and applied .5 skills relevant to the job market. General and transferable skills (other skills .(related to employability and personal development**

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cervical pain: Definition, Acute and Chronic, Etiology, Clinical presentation, Physiotherapy .	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Adhesive capsulitis: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	the second

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rotator cuff tendonitis and tear: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Lateral and medial epicondylitis: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy .	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Carpal tunnel syndrome: Definition, etiology, pathology, clinical presentation, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	De Quervains tenosynovitis, Trigger finger, Dupuytren's contracture: Definition, Etiology, Clinical presentation, Physiotherapy .	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Low back pain: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Scoliosis: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written	Whiteboard, PowerPoint slides	Coccydynia: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	Ninth

theory exams					
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Diffuse Idiopathic Skeletal Hyperostosis: Definition, Etiology, Pathology, Clinical Presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Plantar fasciitis: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Patellofemoral pain syndrome: Definition, etiology, pathology, clinical presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Meralgia Paresthetica: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Bursitis and anserine bursitis: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy .	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Metatarsalgia: Definition, Etiology, Pathology, Clinical presentation, Physiotherapy.	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Magee, D. J. (2014). *Orthopedic Physical Assessment* (6th ed.). Elsevier	**Required textbooks (curriculum (books, if available**
Hertling, D., & Kessler, R. M. (2018). *Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods* (5th ed.). Wolters Kluwer	**Main references (sources)**
Journal of Orthopedic & Sports Physical Therapy (JOSPT)	**Recommended books and references (scientific journals (...and reports**
Physiopedia – Musculoskeletal Physiotherapy:	**Electronic references and websites**

Physical therapy for sports injuries	**Course Name -1**
PTT306	**Course code -2**
Chapter Two / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**
In-person lectures	**Available forms of attendance -5**

hours of theory + 45 hours of practical 30 work / 3 units	Number of credit hours -6 (total) / Number of units (total)
Dr. Fawzi Hammadi Mahdi	course Name of the -7 coordinator (list all names, if there is more than one

Course Objectives-8

Identifying sports injuries -1

Understanding the basic sciences to provide knowledge about aspects related -2 to sports injuries

the various sports injuries that affect joints, muscles, and Identifying -3 ligaments

Familiarization with medical topics and terminology, the physiological -4 variables of sports injuries, clinical examination and evaluation, comparison of contemporary and traditional interventions, and the impact of advanced .technology in this field

the appropriate rehabilitation programs for each medical Determining -5 condition using available therapeutic methods and exercises

Teaching and learning strategies -9

A. Cognitive objectives

A1- Defining the concept of sports injuries, their types (acute and chronic), and . their causes
A2- Understanding the functional anatomyof the musculoskeletal system and its relationship to different types of sports injuries . A3- Comprehending the pathophysiology of common sports injuries such as muscle tears, sprains, fractures, ligament and cartilage injuries, and overuse syndromes. -A4 Recognizing the clinical signs and symptoms associated with various sports . injuries, such as pain, swelling, limited mobility, loss of strength, and instability
A5- Familiarity with the basics of clinical assessment and examination methods used in diagnosing sports injuries: (assessing range of motion(ROM) muscle , .(strength, joint stability, and injury-specific tests
A6- Recognizing the basic principles of physical therapy interventions aimed at treating and rehabilitating sports injuries (such as exercise therapy, manual .(therapy, physical aids, and motor rehabilitation

A7- Understanding the different stages of sports rehabilitation (from first aid to . return to sports) and the goals of each stage **A8- Recognizing the importance of sports injury prevention programs and their relationship to biomechanicsand . proper physical training** **A9- Understanding the role of physiotherapy in improving athletic performance, .accelerating a safe return to the field, and reducing long-term complications**
B. Course-specific skill objectives **B1. Apply clinical examination and functional assessment skills to athletes with . sports injuries** **B2. Design comprehensive treatment and rehabilitation programs that consider . the type and severity of the injury and the athlete's skill level** **B3. Implement therapeutic interventions such as therapeutic exercises, manual . therapy, and the use of physical therapy effectively and safely** **. B4. Apply first aid skills for field sports injuries** **B5. Use measurement tools and methods to assess therapeutic improvement and .document clinical progress**
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods
Daily tests, term exams - final exams
C. Affective and value-based objectives **. A1- To foster a sense of professional responsibility towards injured athletes** **To cultivate empathy and respect for patients, taking into account the A2- . athlete's psychological state after injury** **A3- To adhere to the ethical values of the profession in dealing with players, . coaches, and medical staff** **. A4- To promote teamwork within the medical and sports team** **To recognize the importance of health education for athletes and coaches A5- .regarding injury prevention**
Teaching and learning methods
(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and (personal development

1. Developing critical thinking and problem-solving skills in sports clinical cases .

2. Developing effective communication skills with athletes, coaches, and medical staff .

3. The ability to engage in continuous self-learning and stay up-to-date with scientific advancements in sports medicine and physiotherapy .

4. Utilizing modern technology in sports assessment and rehabilitation (such as motion analysis devices and digital training programs) .

5. Enhancing employability by equipping students with practical, applied skills relevant to sports medicine centers and the job market .

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Introduction to sport injury management, physiological effects of exercise	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Shoulder injuries in sport, Shoulder Separation, Shoulder Dislocation,	Knowledge and Application	Theory 2 3 + Practical	the second
Reports, oral and written	Whiteboard, PowerPoint slides	Shoulder injuries in sports, rotator cuff tendonitis and supraspinatus tendonitis.	Knowledge and Application	Theory 2 3 + Practical	the third

theory exams					
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	The elbow and forearm, tennis and golfer elbow (medial and lateral epicondylitis), Olecranon Bursitis (Draftsman's Elbow)	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	The elbow and forearm, Little League Elbow, Anterior Interosseous Nerve Syndrome (Kiloh Nevin Syndrome), Triceps Tendinitis	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hand and Wrist Injuries, De Quervain's Tenosynovitis, Wrist Sprain	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hand and Wrist Injuries, Trigger Finger (Flexor Tenosynovitis), Jersey Finger	Knowledge and Application	Theory 2 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Lower Back Injuries, Lumbar Sprain and Strain,	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hip Injuries, Acetabular Labral Tears, Groin Strain or Hip Adductor Strain	Knowledge and Application	Theory 2 3 + Practical	Ninth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hip Injuries Piriformis Syndrome, Hamstring Strain, Greater Trochanter Bursitis	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Knee injuries, Anterior and posterior Cruciate Ligaments injuries	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Knee injuries, medial and lateral collateral injuries	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Knee injuries Medial and Lateral Meniscus, Osgood-Schlatter Disease	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Ankle and foot injuries, Ankle Sprains, Achilles Tendon Rupture Plantar Fasciitis	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Ankle and foot injuries, Tibialis Anterior Tendinopathy, Tibialis Posterior Tendon Injuries, Sprain of the First Metatarsophalangeal Joint	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Houglum, P. A., & Bertoti, D. B. (2018). *Therapeutic Exercise for Musculoskeletal Injuries* (4th ed.). Human	**Required textbooks (curriculum (books, if available**
Starkey, C. (2013). *Evaluation of Orthopedic and Athletic Injuries* (3rd ed.). F. A. Davis.	**Main references (sources)**
Journal of Orthopedic & Sports Physical Therapy (JOSPT	**Recommended books and references (scientific journals (...and reports**
Physiopedia – Sports Injuries & Rehabilitation	**Electronic references and websites**

Prosthetics and supports	**Course Name -1**
PTT307	**Course code -2**
Chapter One / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**
In-person lectures	**Available forms of attendance -5**
hours of theory + 45 hours of practical 15 work / 2 units	**Number of credit hours -6 (total) / Number of units (total)**

Dr. Fawzi Hammadi Mahdi	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

To provide students of the Department of Physical Therapy Technologies -1 with the basic knowledge and skills in the field of prosthetics and orthotics, enabling them to understand the medical and engineering principles associated with them, and to deal with patients in need of these means, with the aim of improving motor functions and quality of life, and enhancing their role as an .integrated rehabilitation team

the student to the principles of designing and manufacturing Introducing -2 .prosthetic limbs and supports

Explaining the types of prosthetic limbs (lower - upper) and their therapeutic -3 .uses

Clarifying the role of supports and prosthetic devices in rehabilitation -4 .processes

Differentiating between different clinical conditions that benefit from -5 prostheses or supports

Teaching and learning strategies -9

A1- To introduce the basic concepts of prostheses and orthotics and their role in . physical therapy plans for motor rehabilitation
A2- To understand the anatomy and biomechanics of the upper and lower limbs . and their relationship to therapeutic exercises and functional rehabilitation
A3- To grasp the basic principles of designing prostheses and orthotics in . accordance with physical therapy goals
A4- To identify the different types of prostheses (upper and lower) and orthotics (such as splints and braces) and their impact on facilitating physical therapy . programs
A5- To understand the different stages of prosthesis fitting and the importance . of early intervention by the physical therapist through preparatory exercises
A6- To recognize clinical conditions that require physical therapy intervention in conjunction with the use of prostheses (such as amputations, muscle .(weakness, and joint deformities

A7- To be familiar with the principles of functional and motor assessment of the . patient from a physical therapy perspective before and after prosthesis fitting
A8- To identify the problems and complications resulting from the use of prostheses and orthotics and the role of physical therapy in prevention and treatment (such as skin training, improving muscle strength, and gait correction .(
A9- Understanding the importance of integrating prosthetics and supports into the comprehensive motor rehabilitation programs supervised by the .physiotherapy department

B. Course-specific skill objectives

B1. Conduct a comprehensive clinical and motor assessment that links the . prosthesis to the needs of the physiotherapy program
B2. Participate in determining the most suitable prosthesis or assistive device . that achieves the best response to physiotherapy
B3. Train patients in the functional use of prostheses within physiotherapy .sessions (e.g., gait training, balance, motor skills)
B4. Design integrated treatment programs that include therapeutic exercises . and support with assistive devices
B5. Document the progress of the treatment and measure functional .improvement using physiotherapy assessment tools

Teaching and learning methods

,Theoretical lectures, practical lectures, clinical training, group discussions presentations

Assessment methods

Daily tests, term exams - final exams

C. Affective and value-based objectives

A1- To promote professional responsibility towards patients with special needs . within the framework of physiotherapy programs
A2- To demonstrate empathy and psychological support for amputees and . prosthetic limb users throughout their rehabilitation journey
A3- To adhere to the ethics of the profession and the values of the physiotherapy . department in dealing with patients and colleagues on the medical team
A4- To cultivate a spirit of teamwork among the physiotherapist, the prosthetics . manufacturing team, physicians, and nurses

A5- To contribute to disseminating health education about the importance of .integrating prosthetics and physiotherapy programs to improve quality of life
Teaching and learning methods
(In-person lectures)
●Assessment methods
Daily tests, term exams - final exams
D. General and transferable skills (other skills related to employability and (personal development **Developing critical thinking skills in selecting rehabilitation solutions most .1 . compatible with physiotherapy programs** **Enhancing effective communication skills with patients and their families to .2 . clarify the role of physiotherapy in their prosthetic training** **The ability to learn continuously and keep up with scientific advancements in .3 . the field of prosthetics and apply them in physical training** **Utilizing modern methods in assessment and motion analysis to serve the .4 . objectives of the physiotherapy department** **Increasing employability by linking course outcomes to the job requirements .5 .in hospitals, prosthetic centers, and rehabilitation institutions**

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Introduction, Rehabilitation, the handicap, concept, taking care, psychological effect of the handicap	Knowledge and Application	Theory 1 3 + Practical	the first
Reports, oral and written	Whiteboard,	Psychological effect of the handicap, the amputee, causes of amputation, level of	Knowledge and Application	Theory 1 3 + Practical	the second

theory exams	PowerPoint slides	amputation in the lower limbs .			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Training program for amputee, nursing after operation, nursing before prosthesis	Knowledge and Application	Theory 1 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Importance of stump, muscular exercise, nursing during prosthesis, temporary prosthesis & management	Knowledge and Application	Theory 1 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Normal gait & its analysis, gait deviation & its treatment	Knowledge and Application	Theory 1 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Early management (Clinic Team Approach to Rehabilitation, Computational Surgery: Osteomyoplastic Reconstructive Technique, Postoperative Management	Knowledge and Application	Theory 1 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Early management (Pain Management, Skin Disorders and Their Management, Psychological Consequences of Computation	Knowledge and Application	Theory 1 3 + Practical	Seventh
Reports, oral and written	Whiteboard, PowerPoint slides	Rehabilitation of adults with lower limb amputation (Partial Foot and Syme's Amputations	Knowledge and Application	Theory 1 3 + Practical	Eighth

theory exams		and Prosthetic Designs)			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with lower limb amputation (Transtibial Prosthetic Designs)	Knowledge and Application	Theory 1 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with lower limb amputation (Transfemoral Prosthetic Designs)	Knowledge and Application	Theory 1 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with lower limb amputation (Hip Disarticulations and Trans pelvic Prosthetic Designs, Basic Lower-Limb Prosthetic Training)	Knowledge and Application	Theory 1 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with upper limb amputation (Body-Powered Upper-Limb Prosthetic Designs)	Knowledge and Application	Theory 1 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with upper limb amputation (Upper-Limb Externally Powered Prosthetic Designs)	Knowledge and Application	Theory 1 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Rehabilitation of adults with upper limb amputation (Training Patients with Upper-Limb Amputations).	Knowledge and Application	Theory 1 3 + Practical	fourteenth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Revision	Knowledge and Application	Theory 13 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Kahle, J. T., Highsmith, M. J., & Hubbard, S. L. (2018). *Prosthetics and Orthotics* (2nd ed.). Wolters Kluwe	Required textbooks (curriculum books, if available
Moore, K. L., Dalley, A. F., & Agur, A. M. R. (2018). *Clinically Oriented Anatomy* (8th ed.). Wolters Kluwe	Main references (sources)

amputation rehabilitation	Course Name -1
PTT308	Course code -2
Chapter Two / 2025-2026	Semester / Year -3
15/9/2025	Date of preparation of the description -4
In-person lectures	Available forms of attendance -5
hours theory + 45 hours practical / 2 units 15	Number of credit hours (total) / Number of units (total) -6
Dr. Fawzi Hammadi Mahdi	course Name of the coordinator (list all names, if (there is more than one -7

Course Objectives-8

To provide the student with the theoretical knowledge and practical skills -1 necessary to assess and diagnose amputation cases at various levels, and to design and implement physical therapy and functional rehabilitation programs that contribute to improving the motor, psychological and social abilities of .amputees, and enable them to integrate into daily life and society

the types of amputations, their medical causes, and their Identifying -2 immediate and long-term complications

Understanding the physiological and mechanical changes that occur in the -3 musculoskeletal system after amputation

clinical and functional assessment of the patient after Conducting a -4 amputation, including an assessment of muscle strength, range of motion, and .functional abilities

Applying the principles of physiotherapy in the different stages of -5 stage, post-installation stage rehabilitation (post-operative stage, pre-installation .of the prosthesis).4

Teaching the patient how to care for the remaining limb to prevent -6 complications such as skin ulcers and muscle spasms.5

Training the patient to use the prosthetic limb effectively, and to achieve -7 .motor and functional integration in daily activities

Developing individualized treatment programs that take into account the -8 psychological and social aspects of amputees to increase adaptation and self-confidence

Teaching and learning strategies -9

A. Cognitive objectives

A1- To understand the anatomical and physiological basis of the upper and . lower limbs and their relationship to the amputation process
A2- To understand the medical and surgical causes of amputation (such as .(injuries, tumors, diabetic complications, and vascular diseases
A3- To be familiar with the different types of amputation (partial, total, above- . knee, below-knee, above-elbow, below-elbow) and their complications
A4- To distinguish the post-amputation stages: wound care, deformity .prevention, and pain management (especially phantom limb pain)

A5- To understand the principles of clinical and functional assessment of the amputee, including assessment of muscle strength, range of motion, and balance .

: A6- To understand physical rehabilitation strategies for amputees, including
A7- To know the theoretical basis for the use of prostheses and orthotics, and . how to integrate them with the rehabilitation program
A8- To understand the psychological and social aspects associated with . amputation and their impact on the treatment plan
A9- To understand the role of the multidisciplinary rehabilitation team .(surgeon, physical therapist, prosthetist, psychologist, and nurse)
A10- Identifying the latest scientific and technological trends in the field of .amputee rehabilitation (smart limbs, robotic limbs, and computerized limbs)

B. Course-specific skill objectives

B1. Mastering methods for clinically and functionally assessing amputees (range .(of movement, muscle strength, balance, gait
B2. Implementing therapeutic exercise programs specific to amputees .(strengthening, stretching, balance, breathing, and general fitness exercises)
B3. Training the patient in proper posture and contracture prevention. B4 Using practical strategies to reduce pain and manage phantom pain .. B5
Developing skills to train the patient in progressive load-bearing on the . . amputated limb in preparation for prosthetic use
B6. Teaching the patient how to care for the residual limband maintain the skin .and surgical scar . B7
Equipping the patient with walking skills using prosthetic devices (prostheses) ,or supports (crutcheswalkers .(
B8. Designing individualized rehabilitation programs that consider each . patient's needs based on the type of amputation, age, and activity level
B9. Training the patient in activities of daily livingto achieve independence and . self-reliance
Practical collaboration with the multidisciplinary rehabilitation team in B10- implementing an integrated treatment plan

Teaching and learning methods

,Theoretical lectures, practical lectures, clinical training, group discussions presentations

Assessment methods

Daily tests, term exams - final exams

C. Affective and value-based objectives

A1- To foster a sense of professional and humanitarian responsibility in dealing with amputees .

A2- To instill values of empathy and understanding of the patient's physical, psychological, and social needs .

A3- To adhere to the ethics of the physiotherapy profession by respecting the patient's privacy and dignity .

A4- To develop a positive attitude towards teamwork with the rest of the medical and rehabilitation team .

A5- To enhance the patient's confidence in their abilities and encourage their adaptation and integration into society after amputation .

A6- To instill values of patience, perseverance, and resilience in facing therapeutic challenges .

A7- To commit to keeping abreast of scientific and technological developments in the field of amputation rehabilitation and utilizing them to benefit patients .

A8- To promote a spirit of community service through participation in awareness and support programs for amputees .

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and personal development) .

Developing effective communication skills with patients, their families, and the medical team .1

Acquiring the ability to work effectively as part of a team within a multidisciplinary environment .2

Developing problem-solving skills in complex clinical situations .3

Enhancing critical thinking skills and the scientific analysis of medical cases .4

Acquiring time management skills and prioritizing tasks within the rehabilitation program .5

Developing self-learning skills and keeping up with scientific and .6

. technological advancements in the field of rehabilitation
Equipping students with presentation skills and .7the ability to effectively
. communicate knowledge to others
Developing the ability to use modern technologies in education and .8
rehabilitation (such as simulationand interactive software). 9. Enhancing
leadership . skills in guiding patients or small teams
Preparing graduates to be highly competent and ready to work in .10
.rehabilitation centers, hospitals, or private clinics

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Introduction to amputation: definition, history, epidemiology. Classification of calculation: by level (upper, lower) and by cause (traumatic, pathological, congenital).	Knowledge and Application	Theory 1 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Medical and surgical causes of amputation (diabetes, gangrene, tumors, trauma). Immediate postoperative complications	Knowledge and Application	Theory 1 3 + Practical	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Physiological changes after calculation: circulation, muscle imbalance, loss of balance. Biomechanical and functional consequences	Knowledge and Application	Theory 1 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Principles of postoperative care. Wound care and residual limb management	Knowledge and Application	Theory 1 3 + Practical	Fourth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Common complications: phantom pain, contractures, skin breakdown. Prevention and management strategies.	Knowledge and Application	Theory 1 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Post-amputation assessment: - Clinical examination. - Range of motion and muscle strength evaluation. -Functional assessments.	Knowledge and Application	Theory 1 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Early physiotherapy nterventions: breathing exercises, strengthening, balance training. Psychological and social preparation of the patient	Knowledge and Application	Theory 1 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Pre-prosthetic rehabilitation: - Preparation of the residual limb. -Bandaging and shaping techniques	Knowledge and Application	Theory 1 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Prosthetics introduction: types of prostheses (upper and lower limbs). Main components of prosthetic devices	Knowledge and Application	Theory 1 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Training in prosthetic use: - Donning and doffing. - Balance and posture control	Knowledge and Application	Theory 1 3 + Practical	tenth
Reports, oral and written	Whiteboard, PowerPoint slides	Gait training with lower limb prosthesis. Progression from parallel bars → walker	Knowledge and Application	Theory 1 3 + Practical	eleventh

theory exams		→ crutches → independent walking.			
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Functional training with upper limb prosthesis: - Grasping and releasing objects. - Activities of daily living (ADLs).	Knowledge and Application	Theory 1 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Designing individualized rehabilitation programs. Integration of physical, psychological, and social aspects	Knowledge and Application	Theory 1 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Role of the multidisciplinary team: physician, physiotherapist, prosthetist, psychologist, social worker	Knowledge and Application	Theory 1 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Comprehensive review. Case-based clinical applications and practical examination	Knowledge and Application	Theory 1 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Esquenazi, A., & DiGiacomo, R. (2013). *Rehabilitation After Limb Amputation.* Springer	Required textbooks (curriculum (books, if available

Kahle, J. T., Highsmith, M. J., & Hubbard, S. L. (2018). *Prosthetics and Orthotics* (2nd ed.). Wolters Kluwer	**Main references (sources)**
Prosthetics and Orthotics International (POI Journal)	**Recommended books and references (scientific journals (...and reports**
International Society for Prosthetics and Orthotics (ISPO	**Electronic references and websites**

therapeutic exercises	**Course Name -1**
PTT309	**Course code -2**
Chapter One / 2025-2026	**Semester / Year -3**
15/9/2025	**Date of preparation of the description -4**
In-person lectures	**Available forms of attendance -5**
hours of theory + 45 hours of practical 30 work / 3 units	**Number of credit hours -6 (total) / Number of units (total)**

Dr. Fawzi Hammadi Mahdi	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

To become familiar with all traditional and modern physiotherapy exercise -1 techniques used in the specialty

Knowledge of manual manipulation techniques for all body joints -2

Knowledge of Maitland and Mulcan's principles in manual joint -3 manipulation technique

Understanding the stages of injury and therapeutic exercises for treating soft -4 tissue injuries

Teaching and learning strategies -9

A. Cognitive objectives

A1- Introduction to the basic principles of therapeutic exercisesand their role in . physical therapy plans
A2- Understanding the anatomical and physiological basisof therapeutic . exercises
Comprehending the effects of therapeutic exercises on the musculoskeletal A3- and nervous systems. A4- Differentiating
between the various types of therapeutic exercises (range of motion exercises, corrective exercises, resistance exercises, aerobic exercises, and balance exercises) A5- Understanding .
exercise prescription principles such as intensity, repetition, and duration, and . how to adapt them to the patient's condition
A6- Familiarity with mechanisms for preventing complications resulting from . immobility, such as joint stiffness, muscle weakness, and atrophy
A7- Recognizing the role of therapeutic exercises in rehabilitationafter motor . injuries and surgeries
A8- Understanding the specific considerations in therapeutic exercises for . different patient groups: children, the elderly, and chronically ill patients
) A9- Learning methods for evaluating exercise responsesEvaluation of Exercise Outcomes .(
Understanding the scientific principles for selecting and matching the A10- .appropriate exercise with the diagnosis and physical therapy plan

B. Course-specific skill objectives

B1. Ability to conduct a clinical examination to determine range of motion and . muscle strength before prescribing exercises
) B2. Practical and safe application of various therapeutic exercisesROM , orthopedic exercises, resistance exercises, aerobic exercises, balance exercises) .
) B3. Skill in designing an individualized therapeutic exercise program Exercise Program Design (
that suits the patient's condition . B4. Mastery of exercise progression techniquesbased . on the patient's response
B5. Ability to use simple assistive devices and equipment for therapeutic exercises (such asTheraband, ball, weights .(
B6. Developing the skill of observing and evaluating the patient's response to . exercises and adjusting the program when necessary
B7. Practicing the skill of teaching and guiding the patient or their family on . how to perform home exercises correctly
B8. Ability to integrate therapeutic exercises into the comprehensive physical . therapy treatment plan
B9. Developing professional documentation skillsto record prescribed exercises . and patient responses
B10. Adherence to occupational safety rules during the performance of .therapeutic exercises to avoid injuries

Teaching and learning methods

,Theoretical lectures, practical lectures, clinical training, group discussions presentations

Assessment methods

Daily tests, term exams - final exams

C. Affective and value-based objectives

A1- To foster a sense of professional and ethical responsibility when dealing . with patients during therapeutic exercises
A2- To cultivate empathy towards patients, understand their suffering, and . encourage them to continue treatment
A3- To instill the values of cooperation and teamwork with members of the . medical and rehabilitation team
A4- To reinforce the importance of adhering to professional confidentiality and . respecting patient privacy

A5- To enhance self-confidence and the ability to make appropriate decisions in . prescribing and implementing therapeutic exercises
A6- To develop discipline and commitment to the ethics of the physiotherapy . profession
A7- To encourage students to develop positive attitudes towards the importance . of therapeutic exercises in improving patients' quality of life
A8- To instill the values of patience and perseverance in monitoring patient . progress, even with slow improvement
A9- To promote the concept of health education in the community and raise awareness of the importance of therapeutic exercises for prevention and . treatment
A10- To build a balanced professional personality that combines scientific .knowledge and ethical conduct

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and .(personal development

Developing effective communication skills with patients and colleagues in a .1 . multidisciplinary clinical environment
Developing teamwork and coordination skills with the medical team to .2 . achieve optimal therapeutic outcomes
Enhancing problem-solving and decision-making abilities when designing or .3 . modifying therapeutic exercise programs
Acquiring time management skills and the ability to efficiently organize .4 therapeutic exercise sessions . 5. Refining
critical . thinking skills and analyzing patient responses to exercises
Developing the ability for continuous self-learning and keeping up with .6 . scientific advancements in the field of therapeutic exercise
Developing leadership and supervisory skills when dealing with groups of .7 . patients or during clinical training
Equipping students with professional documentation and reporting skills in .8 . accordance with clinical practice standards
Enhancing adaptability skills to different professional environments .9

.(hospitals, rehabilitation centers, home care) Preparing students to acquire employable skills that contribute to increased .10 .job opportunities and career development					
Course Structure-10					
Evaluation Method	**Teaching method**	**Unit/Topic Name**	**Required learning outcomes**	**Hours**	**Week**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	**Joint mobilization: Definitions of terms, Mobilization, Manipulation, Self Mobilization (Auto-mobilization), Mobilization with Movement, Physiological Movements, Accessory Movements, Component motions, Joint play, Manipulation Under Anaesthesia, basic concepts of joint motion: arthrokinematics**	**Knowledge and Application**	**Theory 2 3 + Practical**	**the first**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	**Joint mobilization: indications, contraindications and precautions, procedures for applying passive joint mobilization technique: - Examination and Evaluation to various joints, Quality of pain, Capsular Restriction, Grades or Dosages of • Movement, Principles of Maitland, Mulligan and Meckzi joint Manipulation techniques**	**Knowledge and Application**	**Theory 2 3 + Practical**	**the second**

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization peripheral joint, Principles, Manipulation techniques MWM define, principle, indication, contraindication	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	joint mobilization of shoulder joint complex:- the mechanical movement of joint, accessory joint (AC joint, CS joint, SUB scapular joint, methods of application to increase all physiological movement of shoulder joint:- flexion, extension, hyperextension, abduction….extra.	Knowledge and Application	Theory 2 3 + Practical	Fourth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization of elbow joint complex, mechanical movement of joint, methods of applying joint mobilization to increase all physiological movement of the elbow joint, flexion, extension, accessory joint radioulnar joint for supination and pronation movements.	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization of wrist joint and hand complex, mechanical movement of joint, methods of applying mechanical movement of the joint, wrist joint, phalangeal joints	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization of knee joint complex, mechanical movement of the joint, methods of applying mechanical movement of the joint	Knowledge and Application	Theory 2 3 + Practical	Seventh

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization of the ankle joint complex & foot, mechanical movement of the joint methods of applying mechanical movement of the joint	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization for an axial part, define, Mulligan Principles, Manipulation techniques MWM& NAGs, SNAGs, indication, contraindication	Knowledge and Application	Theory 2 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Joint mobilization of the cervical spine, MWM& NAGs, SNAGs • Joint mobilization of the lumbar spine, MWM& NAGs, SNAGs	Knowledge and Application	Theory 2 3 + Practical	tenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Positional Release Technique: Introduction Keywords, three further PRT related modalities – each with a different fascial connection – are outlined: • Strain–counterstrain (SCS), • •Facilitated positional release (FPR) • •Functional positional release (FuPR).	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Mechanisms that may explain SCS effects Neurological changes • General SCS guidelines for achieving tender-point ease	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Myofascial Release technique: define, properties of soft tissue, mechanical and neurophysiologic properties of connective tissue,	Knowledge and Application	Theory 2 3 + Practical	thirteenth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Myofascial release technique for trigger points. • Myofascial release technique for axial part	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Revision	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Houglum, P. A., & Bertoti, D. B. (2018). *Brunnstrom's Clinical Kinesiology* (6th ed.). F. A. Davis.	**Required textbooks (curriculum (books, if available**
O'Sullivan, S. B., Schmitz, T. J., & Fulk, G. D. (2019). *Physical Rehabilitation* (7th ed.). F. A. Davis	**Main references (sources)**
Journal of Orthopedic & Sports Physical Therapy (JOSPT	**Recommended books and references (scientific journals (...and reports**
Physiopedia – Therapeutic Exercise	**Electronic references and websites**

Treatment devices	**Course Name -1**
PTT310	**Course code -2**
Chapter Two / 2025-2026	**Semester / Year -3**

15/9/2025	Date of preparation of the -4 description
In-person lectures	Available forms of -5 attendance
hours of theory + 45 hours of practical 30 work / 3 units	Number of credit hours -6 (total) / Number of units (total)
Dr. Mazhar Ali Aboud	course Name of the -7 coordinator (list all names, if (there is more than one

Course Objectives-8

Knowledge of the equipment used in physiotherapy in general -1

Introducing the student to each electrical device used in physiotherapy -2

Introducing the student to the operating principles of each device -3

Understanding the physiological and therapeutic effects of each system -4

Knowledge of the application methods and techniques for each physiotherapy -5 device

the standards for dosages, intensity, and frequency of treatment Knowledge of-6 .with physiotherapy devices

Teaching and learning strategies -9

A. Cognitive objectives

A1- To identify the physical and biological principles underlying physiotherapy . devices

A2- To understand the operating principles of various therapeutic devices, such) as: heat deviceshot packs, infrared) cold devices ,(cryotherapy ultrasound ,( ) devicesultrasound therapy) electrical stimulation devices ,(electrotherapy ,(. and laser devices

A3- To comprehend the physiological effectsof therapeutic devices on tissues . and vital organs

A4- To differentiate between types of therapeutic devices in terms of their . therapeutic uses, precautions, and contraindications

A5- To understand safety standardswhen using therapeutic devices in clinical

. practice A6- To be familiar with the principles of calibrating and testing devices to . ensure their safety and effectiveness A7- To recognize the role of therapeutic devices in rehabilitation programsfor . patients with various conditions A8- To understand the relationship between the choice of therapeutic device and) the type of injury or diseaseclinical indications .(A9- To understand the scientific principles of documenting the use of . therapeutic devices within the patient's medical record A10- Understanding modern developments and future trends in the field of therapeutic devices: Cognitive objectives
B. Course-specific skill objectives B1. Proficiency in operating various therapeutic devices according to approved . protocols B2. Ability to calibrate and adjust device settings (such as current intensity, . frequency, and time) to suit the patient's condition B3. Skill in determining the appropriate location for applying the device to the . patient's body to ensure effectiveness and safety B4. Practice initial device inspection and maintenance procedures to ensure . their safety before use B5. Develop the ability to apply therapeutic devices in practical treatment plans . for various clinical cases B6. Skill in monitoring the patient's response during and after device therapy . sessions and documenting observations B7. Ability to recognize early signs of any side effects or complications resulting . from device use and take appropriate action B8. Proficiency in integrating therapeutic devices with other treatment methods .(such as therapeutic exercises or manual therapy) B9. Skill in educating and informing the patient about the benefits of the device, . the session procedure, and what to avoid afterward B10. Adherence to occupational safety rules and protection of the patient and .medical team from any electrical or thermal hazards
Teaching and learning methods
,Theoretical lectures, practical lectures, clinical training, group discussions presentations
Assessment methods

Daily tests, term exams - final exams
C. Affective and value-based objectives **sense of professional responsibility when using therapeutic Developing a A1-** **. devices to ensure patient safety** **Promoting adherence to professional ethics and respect for patient privacy A2-** **. during therapy sessions** **Instilling values of precision and discipline when handling sensitive and A3-** **-modern equipment . A4** **Encouraging empathy towards patients and providing psychological support** **. during device therapy** **Enhancing self-confidence in operating devices and making appropriate A5-** **. clinical decisions** **Instilling the value of patience and perseverance when dealing with chronic A6-** **. or slow-recovering cases** **A7- Developing a spirit of teamwork and cooperation with the medical team in** **. implementing treatment programs** **students to focus on self-development and keep up with Encouraging A8-** **. technological advancements in the field of therapeutic devices** **A9- Establishing the concept of safety and prevention as a fundamental value in** **. the clinical work environment** **Building positive attitudes towards the importance of therapeutic devices A10-** **.as an integral part of the physical therapy plan**
Teaching and learning methods
(In-person lectures)
●Assessment methods
Daily tests, term exams - final exams
D. General and transferable skills (other skills related to employability and .(personal development **Developing effective communication skills with patients and colleagues on the .1** **. medical team when using therapeutic devices** **. Enhancing teamwork skills and coordination with other medical specialties .2** **Refining problem-solving and decision-making skills when encountering .3** **. malfunctions or contraindications to device use** **Developing time management skills and the ability to efficiently organize .4**

. therapy sessions using devices
Acquiring critical thinking skills .5in selecting the appropriate device based on
. the patient's condition
Developing the ability to learn independently and keep up with technological .6
. and scientific advancements in the field of therapeutic devices
Enhancing leadership and supervisory skills when training patients or .7
. colleagues on device use
Practicing professional documentation skills .8to record details of therapy
. sessions
Developing the ability to adapt to different work environments (hospitals, .9
.(rehabilitation centers, private clinics
Preparing students to acquire employable skills that increase job .10
.opportunities and support professional development in the healthcare market

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Traction: definition, the physiological effects of traction	Knowledge and Application	Theory 2 3 + Practical	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Traction: Clinical indication for the use of spinal traction, Contraindications and Precautions for the use of Spinal Traction	Knowledge and Application	Theory 2 3 + Practical	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Adverse Effects of Spinal Traction, Application Techniques (Mechanical Lumbar Traction)	Knowledge and Application	Theory 2 3 + Practical	the third
Reports, oral and written	Whiteboard,	Application Techniques (Mechanical cervical traction) intermittent versus sustained traction	Knowledge and Application	Theory 2 3 + Practical	Fourth

theory exams	PowerPoint slides				
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Cryotherapy, physiological effects of cold, Indication and contra indication and precaution of cold therapy	Knowledge and Application	Theory 2 3 + Practical	Fifth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Application technique cold packs or ice packs, Application technique ice massage	Knowledge and Application	Theory 2 3 + Practical	Sixth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Application technique cold compression unit and Vapocoolant Sprays and brief Icing	Knowledge and Application	Theory 2 3 + Practical	Seventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Application technique Cold Whirlpool. Application technique ice immersion	Knowledge and Application	Theory 2 3 + Practical	Eighth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: Physical Principles and Properties of Water,	Knowledge and Application	Theory 2 3 + Practical	Ninth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: Physiological Effects of Hydrotherapy, uses of Hydrotherapy, Contraindications and Precautions for Hydrotherapy	Knowledge and Application	Theory 2 3 + Practical	tenth

Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: application general technique hydrotherapy	Knowledge and Application	Theory 2 3 + Practical	eleventh
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: apply Whirlpool technique	Knowledge and Application	Theory 2 3 + Practical	twelfth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: method of applying Hubbard tank	Knowledge and Application	Theory 2 3 + Practical	thirteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Hydrotherapy: method of applying pool exercise	Knowledge and Application	Theory 2 3 + Practical	fourteenth
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Revision	Knowledge and Application	Theory 2 3 + Practical	fifteenth

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
Knight, K. L., & Draper, D. O. (2013). *Therapeutic Modalities: The Art and Science* (2nd ed.). Lippincott Williams & Wilkin	**Required textbooks (curriculum books, (if available**

Kitchen, S., & Bazin, S. (2015). *Clayton's Electrotherapy* (13th ed.). Elsevie	Main references (sources)
Journal of Electromyography and Kinesiology	Recommended books and references (...scientific journals and reports)
Physiopedia – Physical Agents & Modalities	Electronic references and websites

Medical research methods	Course Name -1
MTCD303	Course code -2
Chapter One / 2025-2026	Semester / Year -3
15/9/2025	Date of preparation of the description -4
In-person lectures	Available forms of attendance -5
hours of theory / 2 units 30	Number of credit hours (total) / Number of units (total) -6
M.M. Suleiman Musari Karim	course Name of the coordinator (list all names, if (there is more than one -7

Course Objectives-8

To provide students with basic knowledge about the principles and foundations .of scientific research in the medical field
Developing skills in designing and conducting medical research related to .physical therapy
.Enabling students to use appropriate statistical methods to analyze medical data
Enhancing the ability to critically evaluate published research and utilize it in .developing professional practice
Instilling academic values and research ethics in students

Teaching and learning strategies -9

A. Cognitive objectives

**To understand the concept of scientific research and its importance in A1-
. developing medical knowledge and the practice of physical therapy
To understand the types of medical research (quantitative, qualitative, and A2-
. mixed-methods) and the characteristics of each type
To grasp the steps of the scientific research methodology: identifying the A3-
problem, formulating hypotheses, designing the research, collecting data,
. analyzing results, and drawing recommendations
A4- To understand the principles of measurement tools (validity and reliability)
. in medical research and how to choose the appropriate tool
To be familiar with the basics of medical statistics used in data analysis and A5-
. results interpretation
mechanisms of literature review A6- To understand theand how to search
. medical sources and databases
fundamentals of writing a report or research paper according to To know the A7-
) academic standards and the scientific documentation styleAPA orVancouver .(
the ethics of scientific research, such as A8- To recognize quality standards and
confidentiality, informed consent, and avoiding plagiarism**

.B. The specific skills objectives of the course

To equip students with the skills to formulate a medical research problem in a .precise scientific manner, and to define the research objectives and hypotheses

Developing skills in designing research studies (descriptive, experimental, comparative, cross-sectional...) in a manner appropriate to the nature of health .and medical problems

Mastering the steps of data collection through scientific research tools .(questionnaires, interviews, medical records, laboratory/clinical measurements)

Applying statistical analysis skills using computer programs (such asSPSS or Excel .to accurately interpret research results (

Developing medical report/research writing skills according to academic templates and principles (summary, introduction, methodology, results, .(discussion, conclusions, references

To equip students with the skill of critiquing and evaluating published scientific .research in terms of methodology, tools, and the validity of results

Employing presentation and scientific communication skills to present the .results of medical research through lectures, posters, or scientific seminars

Developing the ability to work as a team when conducting joint research and .distributing tasks among team members

Teaching and learning methods

,Theoretical lectures, practical lectures, clinical training, group discussions presentations

Assessment methods

Daily tests, term exams - final exams

C. Affective and value-based objectives

Developing **positive attitudes towards scientific research** as a key tool for developing medical .practice and physical therapy

 Promoting the values of accuracy, objectivity, and scientific integrity in data collection, .documenting results, and adhering to intellectual property rights

 Instilling a sense of ethical responsibility in dealing with research participants, including .respecting their privacy and the confidentiality of their information

Encouraging **students to be creative and think critically** in choosing research topics that serve the .community and the health sector

 To promote cooperation and team spirit among students in carrying out joint research and .managing scientific discussions

 To instill in students the value of adhering to academic standards in writing and presenting .research in a way that reflects a high professional image

• s research abilities and encouraging him to continue with '**Instilling self-confidence** in the student .postgraduate studies and future scientific projects

Teaching and learning methods

(In-person lectures)

●Assessment methods

Daily tests, term exams - final exams

D. General and transferable skills (other skills related to employability and (personal development

• **skills** through analyzing scientific data and drawing **Critical thinking and problem-solving** .conclusions

Developing skills in using technology through dealing with statistical software and reference management programs (such asEndNote orMendeley .(

To acquire time management and work organization skills to complete research within • .specific timeframes

Enhancing oral and written communication skills through the preparation of research reports • .and the presentation of findings at seminars or conferences
The ability to continuously learn independently to keep up with the latest developments in the • .field of medical and scientific research
Developing .**leadership and teamwork skills** through participation in joint research projects
Acquiring skills to adapt to diverse work environments in the health and academic fields, • .which increases employment opportunities
Enhancing skills in searching for information in digital scientific sources and electronic • .libraries
Developing professional and ethical awareness in accordance with labor market requirements and .international standards in medical research

Course Structure-10

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	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.	Knowledge	Theory 2	the first
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Research problem: Statement of research problem., Statement of purpose and objectives of research problem, Necessity of defining the problem	Knowledge	Theory 2	the second
Reports, oral and written theory exams	Whiteboard, PowerPoint slides	Research design: Meaning of research design, Need for research design, Features for good design, Different research designs, Basic principles of research design	Knowledge	Theory 2	the third

Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Sampling Design: Criteria for selecting sampling procedure, Implications for sample design, steps in sampling design, characteristics of good sample design, Different types of samples design	**Knowledge**	**Theory 2**	**Fourth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	the same lecture as the last week	**Knowledge**	**Theory 2**	**Fifth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Measurement and scaling techniques: Measurement in research- Measurement scales, sources of error in measurement, Technique of developing measurement tools, Meaning of scaling, its classification., Important scaling techniques	**Knowledge**	**Theory 2**	**Sixth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	the same lecture as the last week	**Knowledge**	**Theory 2**	**Seventh**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Methods of data collection: collection of primary data, collection of data through questionnaires & schedules, difference between questionnaires & schedules	**Knowledge**	**Theory 2**	**Eighth**

Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Sampling fundamentals, need for sampling & some fundamental definitions, Important sampling distributions	**Knowledge**	**Theory 2**	**Ninth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Processing & analysis of data: Processing operations, problems in processing, Types of analysis, Statistics in research, Measures of central tendency, Dispersion, Asymmetry, relationship.	**Knowledge**	**Theory 2**	**tenth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	the same lecture as the last week	**Knowledge**	**Theory 2**	**eleventh**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	Testing of hypothesis: What is hypothesis? Basic concepts concerning testing of hypothesis, Procedure of hypothesis testing, measuring the power of hypothesis test, Tests of hypothesis, limitations of the tests of hypothesis	**Knowledge**	**Theory 2**	**twelfth**
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	the same lecture as the last week	**Knowledge**	**Theory 2**	**thirteenth**
Reports, oral and written	**Whiteboard, PowerPoint slides**	Computer technology: Introduction to Computers, computer application in research,	**Knowledge**	**Theory 2**	**fourteenth**

theory exams		computers & researcher			
Reports, oral and written theory exams	**Whiteboard, PowerPoint slides**	General Revision	**Knowledge**	**Theory 2**	**fifteenth**

Course Evaluation -11	
Student activities and reports, oral and written theoretical and practical exams	
Learning and teaching resources -12	
An introduction of Biostatistics: Sunder Rao.PSS	**Required textbooks (curriculum (books, if available**
Methods in Bio-Statistics 6th Edn. 1997: BK Mahajan **4. Biostatistics: A manual of statistical methods: K. Visweswara Rao**	**Main references (sources)**
***The Lancet* - Journal of Clinical and Medical Research.**	**Recommended books and references (scientific journals (...and reports**
National Institutes of Health (https://www.nih.gov	**Electronic references and websites**