School of Rehabilitation
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Course Description Guide

Islamic Republic of Iran

Ministry of Health, Treatment & Medical Education

Tehran University of Medical Sciences & Health Services

School of Rehabilitation

Bachelor of Science, Physical Therapy Program

2021

In the Name of God

Section I

Title: Physiotherapy

Degree: Bachelor of Science

Introduction:

Due to an increase in the population and the quality of medical health care and treatment, the necessity and need for non-pharmacological treatment was felt. According to World Health Organization (WHO) about 10% of people in each country have a certain type of disability spreading across vast population and a lack of professional physical therapists is obvious. Therefore, a bachelor degree in physical therapy was created in the universities. These course syllabi and its description is created after thorough evaluation of courses in accredited universities across 35 countries and studying recommendations of well-known specialists and thinkers.

Definition:

Physical therapy is a branch of Rehabilitation sciences, whose graduates, try to assess and diagnose the disabilities with effective patient communication. In addition, with the application of physical modalities such as light, electricity, heat, etc. and mechanical elements such as exercises and different therapeutic movements to solve their problems.

History and New Developments:

Physical therapy history in world: For a long time, humans have tried to treat different diseases and their effects by using natural and physical phenomena. For example, mineral water was applied for therapeutic purposes in Japan in 3000 B.C. In addition, in classic medicine in Iran different physical factors were applied for treatment. After the First World War, which led to the use of destructive weapons leading to a lot of injuries and disabilities, rehabilitation and especially physical therapy were considered. Today, with different scientific and technical improvements in medicine, physical therapy as a branch of medical science has been extensively researched and instructed throughout most universities in the world.

History of Physical Therapy in Iran: The first modern physical therapy in Iran dates back to 85 years ago. After that, in 1941, a physician allocated a place in his office for physical treatments. In the late of 1950, the first modern physical therapy center launched in a charity clinic. Today, different physical therapy centers are established all over the country. In early 1960s, the first educational physical therapy center with the name of superior physical therapy institute established by the World Health Organization (WHO) in Iran. Now, different educational centers in our country accept students in B.Sc., some of them accept students in M.Sc., and Ph.D. degrees. The first graduated students in Ph.D. degree in physical therapy graduated in 2001 from Tarbiat Modarres University. Today, the increase of the population and industry development have led to the increase of different injuries and disabilities, consequently, the need to have physical therapy as a discipline is felt greatly. Physical therapy treatments can make up for many disabilities. In

addition, making suitable information accessible can prevent from physical and motor injuries or help their improvement.

Roles:

- Physical therapy treatment under medical supervision
- Educational
- Research

General Competencies

Graduates of this course are expected to be able to:

- Use communication-interactive skills effectively.
- Use critical thinking and problem-solving skills in clinical practice.
- Apply the knowledge and skills learned in a professional and committed manner.

The Terms and Conditions of Admission to the Course

Student admission will be based on the final high school grade point average.

Educational Strategies, Methods and Techniques

The educational strategies, Methods and Techniques are composed of below main issues:

- A combination of teacher-centered and student-centered learning;
- Problem solving;
- Self-study;
- Case study;
- Task-based learning;
- Systematic learning.

Student Assessment

- Written Exam;
- Oral Exam;
- Practical Exam.

Number and Type of Credits and Tables of the Courses:

The duration of B.Sc. in physical therapy is four years of full time study. Students must pass 106 credits total, including 82 credits of main courses and 24 credits of clinical internship. Courses are presented in theoretical, practical, theoretical/ practical and clinical practice formats. Each theoretical credit is 17 hours and practical credit is 34 hours and clinical practice is 51 hours.

Table of Main Courses (Non-Core & Core)

Title of the Course	Prerequisite	Credit(s)			Hour(s)		
		The.	Prac.	Total	The.	Prac.	Total
Biochemistry and pharmacology	-	2	0	2	34	0	34
General Physiology	-	1	1	2	17	34	51
Muscle and Nerve Physiology	-	1.5	0.5	2	26	17	43
Anatomy Head, Neck	-	1	0	1	17	0	17
Anatomy Trunk		0.5	0.5	1	9	17	26
Anatomy Shoulder Girdle &Upper Extremities	-	1	0.5	1.5	17	17	34
Anatomy pelvic & Lower Extremities	-	1	0.5	1.5	17	17	34
NeuroAnatomy	Anatomy I, II, III, IV	2	0	2	34	0	34
Anatomy Surface, Clinical & Functional	Anatomy I, II, III & IV	1	0.5	1.5	17	17	34
Histology	-	1	0.5	1.5	17	17	34
Pathology	-	2	0	2	34	0	34
General & Handicaps Psychology	-	2	0	2	34	0	34
Psychiatry	Psychology	2	0	2	34	0	34
Genetics	-	1	0	1	17	0	17
Neurology	NeuroAnatomy	2	0	2	34	0	34
Cardiovasculo-pulmonary Diseases	-	2	0	2	34	0	34
Skin and Rheumatologic Diseases	-	2	0	2	34	0	34
General Surgery	-	2	0	2	34	0	34
Orthopedics	Anatomy I, II, III, IV	2	0	2	34	0	34
Radiology	Anatomy I, II, III, IV	2	0	2	34	0	34
First Aides & Emergencies	-	0	1	1	0	34	34

Table of Main Courses (Non-Core & Core)

Title of the Course	Prerequisite	Credit(s)			Hour(s)		
		The.	Prac.	Total	The.	Prac.	Total
Principles of Rehabilitation	-	2	0	2	34	0	34
Advance English & Medical Terminology	-	2	0	2	34	0	34
Physical Therapy in cardiovasculo-pulmonary conditions	Cardiovasculo-pulmonary Diseases	2	0	2	34	0	34
Physical Therapy in Skin and Rheumatologic diseases	Skin and Rheumatologic Diseases	2	0	2	34	0	34
Physical Therapy in Surgical Condition	General Surgery	2	0	2	34	0	34
Orthopedic Physical Therapy (I)	Orthopedics	1	1	2	17	34	51
Orthopedic Physical Therapy (II)	Orthopedics	2	0	2	34	0	34
Biomechanics & Kinesiology I (General & Upper limbs)	Anatomy III (Shoulder Girdle & Upper Limbs)	2	0	2	34	0	34
Biomechanics & Kinesiology II (lower limbs)	Anatomy IV (Pelvic& Lower Limbs)	2	0	2	34	0	34
Biomechanics & Kinesiology III (Vertebral column)	Anatomy I, II (Head. Neck & Trunk)	2	0	2	34	0	34
Therapeutic Exercises I (Principles)	Anatomy III, IV and Biomechanics & Kinesiology I	2	1	3	34	34	68
Therapeutic Exercises II (PNF & MET)	Therapeutic Exercises I	1	1	2	17	34	51
Physical Therapy in neurological diseases I	Neurology	2	0	2	34	0	34
Physical Therapy in neurological diseases II (Hemiplegic)	Physical Therapy in neurological diseases I	1	1	2	17	34	51
Physical Therapy in neurological diseases III (Cerebral Palsy)	Physical Therapy in neurological diseases I& II	1	1	2	17	34	51
Electrotherapy I (Thermal Agents)	-	2	1	3	34	34	68
Electrotherapy II (Electrical Modalities)	Muscle and Nerve Physiology	2	1	3	34	34	68
Orthetics, Prosthetic & Assistive Device	Therapeutic Exercises I (Principles)	1	1	2	17	34	51
Musculuskeletal Physical Examination (Muscle Testing)	Anatomy I, II, III, IV	1	1	2	17	34	51
Manual Therapy I (Therapeutic Massage)	Anatomy I, II, III, IV	1	1	2	17	34	51
Manual Therapy II (Mobilization)	Anatomy I, II, III, IV	0	1	1	0	34	34

Evidence-Based physical therapy	-	1	0	1	17	0	17
Professionalism		1	0	1	17	0	17
Management of Physical Therapy Clinic		1	0	1	17	0	17
Total		67	16	83	1139	544	1683

Table of Clinical Practice Courses

Title of the Course	**Prerequisite**	**Credit(s)**			**Hour(s)**		
		The.	**Prac.**	**Total**	**The.**	**Prac.**	**Total**
Clinical Practice (Observation)		0	2	2	0	102	102
Clinical Practice (cardiovascular-pulmonary)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice (Rheumatology and Skin)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice (Burn and repair)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice I (Orthopedics)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice II (Orthopedics)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice (Geriatrics)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice (Pediatrics)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice I (Neurology)	Clinical Practice (Observation)	0	2	2	0	102	102
Clinical Practice II (Neurology)	Clinical Practice (Observation)	0	2	2	0	102	102

Table of Clinical Practice Courses

Title of the Course	Prerequisite	Credit(s)			Hour(s)		
		The.	Prac.	Total	The.	Prac.	Total
Clinical Practice (Independent Practice)	-	0	4	4	0	204	204
Total		0	24	24	0	1224	1224

Ethical issues

The graduates should,

- Observe the Patient's Bill of Rights[1] when working with the patients.
- Strictly observe Biosafety and Patient Safety Rules* concerning the patients, personnel and workplace.
- Observe the Rulebook for Dress Code[2].
- Strictly observe the Regulations of Working with the Laboratory Animals[3].
- Carefully preserve resources and equipment.
- Truly respect faculty members, the staff, classmates and other students and work for creating an intimate and respectful atmosphere.
- Observe social and professional ethical considerations in criticism.

1, 2 and 3 are contained in the Enclosures.

* Biosafety and Patient Safety Rules will be set out by the Educational Departments and will be available to the students.

Section II

Title of the Course: Biochemistry and Pharmacology

Code of the course: 01

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course involves the study of the molecular composition of living cells, the organization of biological molecules within the cell, and the structure and function of these biological molecules. The biological macromolecules which this course focuses on are proteins, polysaccharides, and polynucleic acids (DNA and RNA), the monomeric units of these macromolecules. This course also provides students with an overview of pharmacology with an emphasis on clinical applications within the context of the nursing process and prioritization of needs; with special consideration given to the physiological, psycho/social, cultural, and spiritual needs of patients. Explores indications, modes of action, effects, contraindications and interactions for selected drugs.

Principal objective(s) of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge and skills in different aspects of biochemistry and pharmacology with more emphasis on areas that related to physical therapy.

Course syllabus:

- The structure and function of important biomolecules such as carbohydrates, lipids, amino acids, proteins and nucleic acids; enzyme kinetics
- Use of cofactors & coenzymes
- Metabolic pathways

- Introduction: definition, branches and scope of the subject of pharmacology
- Nature and sources of Drugs, Drug nomenclature and dosage
- Routes of drugs' administration and relation with other medical professionals

Principal reference(s):

1. Vella F. Biochemistry: A synopsis: By Diane S Colby. Lange Medical Publications, California.. Wiley Online Library; 1986.

2. Baynes J, Dominiczak MH. Medical biochemistry. Elsevier Health Sciences; 2009.

3. Ciccone CD. Pharmacology in rehabilitation. FA Davis; 2015.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: General Physiology

Code of the course: 02

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course Description:

This course deals with fundamental aspects of Physiology, cell structure and function, including but not limited to the cardiopulmonary and integumentary system.

Principal objective(s) of the course:

The aim of this class is to offer the students opportunities to acquire basic knowledge in physiology and cellular office.

Course syllabus:

A- Theory:

- Including cell structure, cell functions, introduction to physiology.
- Physiology of intracellular fluid and lymphatic, blood and blood circulation system.
- Physiology of urinary and excretion system.
- Physiology of cardiopulmonary and respiratory system.
- Physiology of digestive system.
- Physiology of integumentary and sensation.
- Physiology of fluid balance and electrolytes, reproductive system, endocrine gland and body temperature regulation system.
- Physiology of peripheral and central system.
- Physiology of musculoskeletal system.

B- Practice in Laboratory

Principal reference(s):

1. Hall JE, Hall ME. Guyton and Hall textbook of medical physiology. Elsevier Health Sciences; 2020.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Muscle and Nerve Physiology

Code of the course: 03

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

Physiology of Central Nervous System and Muscle

The aim of this class is to offer the students opportunities to acquire basic and fundamental knowledge regarding muscle and nerve physiology.

Principal reference(s):

1. Hall JE, Hall ME. Guyton and Hall textbook of medical physiology. Elsevier Health Sciences; 2020.

2. Vander AJ, Sherman JH, Luciano DS. Human physiology: the mechanisms of body function. New York, US: McGraw-Hill, 1990.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Anatomy I (Head & Neck)

Code of the course: 04

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0	1
Hour (s):	17	0	17

Course Description:

This course deals with putting in basic and rudimentary aspects of Anatomy of head and neck.

Principal objective(s) of the course:

The purpose of this course is to provide the students the opportunities to acquire basic knowledge and skills in head and neck.

Course syllabus:

A- Theory:

- Osteology of the head and neck
- Myology, including description of muscular attachments (origin and insertion) and their direction.
- Nerve distribution in the areas of head & neck.
- Types of joints and their function.
- Ligaments and Tendons.
- Vascular network, including Arteries, Veins and Lymphatic system.

B- Practice in laboratory (observation and practice on cadaver).

Principal reference(s):

1. Palastanga N, Field D, Soames R. Anatomy and human movement: structure and function. Elsevier Health Sciences; 2006.

2. Drake R, Vogl AW, Mitchell AW. Gray's anatomy for students. Elsevier Health Sciences; 2009.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Anatomy II (Trunk)

Code of the course: 05

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	0.5	0.5	1
Hour (s):	9	17	26

Course Description:

This course deals with putting in basic and rudimentary aspects of Anatomy of trunk including spine and rib cage.

Principal objective(s) of the course:

The purpose of this course is to provide the students the opportunities to acquire basic knowledge and skills in trunk and spine Anatomy.

Course syllabus:

A- Theory:

- Osteology of the trunk and spine.
- Myology, including description of muscular attachments (origin and insertion) and their direction.
- Nerve distribution in the areas of trunk and spine.
- Types of joints and their function.
- Ligaments and Tendons.
- Vascular network, including Arteries, Veins and Lymphatic system.
- Intervertebral discs.

B- Practice in laboratory (observation and practice on cadaver).

Principal reference(s):

1. Palastanga N, Field D, Soames R. Anatomy and human movement: structure and function. Elsevier Health Sciences; 2006.

2. Drake R, Vogl AW, Mitchell AW. Gray's anatomy for students. Elsevier Health Sciences; 2009.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Anatomy of Shoulder Girdle & Upper Extremities

Code of the course: 06

Type of the course: □General (Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0.5	1.5
Hour (s):	17	17	34

Course Description:

This course deals with advanced and detailed aspects of the upper extremity anatomy.

Principal objective(s) of the course:

The purpose of this course is to provide the students the opportunities to acquire advanced knowledge and skills in upper extremity anatomy.

Course syllabus:

A- Theory:

- Osteology of the upper extremities in details.
- Myology, including description of muscular attachments (origin and insertion) and their direction.
- Nerve supply in upper extremities, including distribution of the major nerves as well as detailed branch outs and innervations.
- Types of joints and their function.
- Ligaments and Tendons of upper extremities.
- Vascular network, including Arteries, Veins and Lymphatic system.

B- Practice in laboratory (observation and practice on cadaver

Principal reference(s):

1. Palastanga N, Field D, Soames R. Anatomy and human movement: structure and function. Elsevier Health Sciences; 2006.

2. Drake R, Vogl AW, Mitchell AW. Gray's anatomy for students. Elsevier Health Sciences; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Anatomy of Pelvic & Lower Extremities

Code of the course: 07

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0.5	1.5
Hour (s):	17	17	34

Course Description:

This course deals with advanced and detailed aspects of lower extremity anatomy.

Principal objective(s) of the course:

The purpose of this course is to provide the students the opportunities to acquire advanced knowledge and skills in lower extremity anatomy.

Course syllabus:

A- Theory:

- Osteology of lower extremities in details.
- Myology, including description of muscular attachments (origin and insertion) and their direction.
- Nerve supply in lower extremities, including distribution of the major nerves as well as detailed branch outs and innervations.
- Types of joints and their function.
- Ligaments and Tendon of lower extremities.
- Vascular network, including arteries, veins and lymphatic system.

B- Practice in laboratory (observation and practice on cadaver

Principal reference(s):

1. Palastanga N, Field D, Soames R. Anatomy and human movement: structure and function. Elsevier Health Sciences; 2006.

2. Drake R, Vogl AW, Mitchell AW. Gray's anatomy for students. Elsevier Health Sciences; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: NeuroAnatomy

Code of the course: 08

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): Anatomy I, II, III, IV

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course deals with the anatomy of central and

Peripheral nervous systems. This also includes autonomic nervous system.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge regarding neuro-anatomy.

Course syllabus:

- Central nervous system
- Cerebrum (gray matter, white matter), Thalamus, Cerebellum, Mid brain, Pons, Medulla oblongata, Ventricles, Brain stem, Basal ganglia, extra pyramidal system.
- Spinal cord
- Cranial nerves, Spinal nerves and plexus
- Peripheral nervous system
- Autonomic nervous system

Principal reference(s):

1. Snell's R. Clinical neuroanatomy for medical students, By RICHARD S SNELL. 200.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Anatomy (Surface, Clinical & Functional)

Code of the course: 09

Type of the course: □General (Basic □Main

Prerequisite Title (s): Anatomy I, II, III, IV

	Theo.	Prac.	Total
Credit (s):	1	0.5	1.5
Hour (s):	17	17	34

Course Description:

This course deals with advanced and detailed aspects of defining landmarks.

General Objective of the Course:

The purpose of this course is to provide the students opportunities to acquire advanced knowledge and skills in upper/lower and trunk surface anatomy.

Course Syllabus:

A- Theory:

- Defining thorax landmarks of the thorax: ribs and stern lungs and diaphragm.
- Defining the landmarks of viscera.
- Defining the landmarks of upper and lower.

B- Practice in laboratory

Principal reference(s):

1. Reichert B. Palpation techniques: surface anatomy for physical therapists. Wolfgang Stelzenmueller; 2010.

2. Field D, Hutchinson JSO. Field's anatomy, palpation, and surface markings. Elsevier Health Sciences; 2006.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Histolog

Code of the course: 10

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0.5	1.5
Hour (s):	17	17	34

Course Description:

This course deals with fundamental aspects of history with more emphasis on musculoskeletal. Neuromuscular, cardiopulmonary and integumentary systems.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge in histology and cellular structure.

Course syllabus:

A: Theory:

- Cytology
- Study of different kinds of tissues from histological points of view including:
- Muscular, Nervous, Osseous, Cartilaginous, Epithelial, Glandular, Connective & Blood tissues.

Practice in laboratory.

Principal reference(s):

1. Amlacher E. Jc Junqueira, J. Carneiro and A. Contopoulos: Basic Histology.

Lange Medical Publication, Canada, 1975.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Patholog

Code of the course: 11

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course deals with fundamental aspects of pathology: cellular pathology and dysfunction with more emphasis on the pathology of the musculoskeletal nervous system. Cardiovascular, respiratory and connective tissue pathology.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge in pathology and cellular dysfunctions.

Course syllabus:

- General pathology.
- Cellular pathology.
- Pathology of inflammation, edema coagulation necrosis etc.
- Pathology of cardio vascular and cardiopulmonary system.

Pathology of musculoskeletal and neuromuscular system. Pathology of connective tissue and integumentary system.

Principal reference(s):

1. Hoda SA, Cheng E. Robbins basic pathology. Oxford University Press US; 2017.

Student assessment practices:

- Written Exam
- Oral Exam

Title of the Course: General & Handicaps Psychology

Code of the course: 12

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course deals with fundamental aspects of psychology, different school of thought and points of view in psychology. This also includes a mental status in normal and abnormal conditions.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge and attitudes toward understanding fundamental aspects of psychology.

Course syllabus:

- Definition, history, nature of psychology.
- Different school of thought and points of view in psychology
- Cognition
- Psychology of religions and prophets point of view.
- Psychological divisions: Basic facts on experimentation, development and maturity, child development, personality, mental deficiency and learning psychology.
- Individual differences and various types of intelligence tests and different rules and regulations for studying it.
- Motivation and emotion and related nervous mechanism.
- Drives, aggression, frustration and various defense mechanisms.
- Learning process, kinds of learning, perceptions and their difference.
- Expressions
- General psychological aspects of disorders to normal and abnormal behavior.
- General psychological aspects of mental disorders accompany brain damage.
- General psychological aspects of mental status in normal and abnormal situation.
- Psychology of physical disability and handicapped in various types and from different points of view.

Principal reference(s):

1. Dunkin N. Psychology for physiotherapists. Macmillan International Higher Education; 1981.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Psychiatry

Code of the course: 13

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): Psychology

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course deals with fundamental aspects of psychiatry, different psychiatric disorders and the way for prevention of them.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge and attitudes toward understanding fundamental aspects of psychology.

Course syllabus:

- Definition & a brief history of psychiatry
- The cause of mental illness
- Clinical syndromes
- The major psychoses
- The neuroses and personality disorders
- Organic states
- Psychosomatic illness
- Drug addictions and abuse
- Fundamental of treatment
- Brain mechanism and behavior

The biological basis of psychoanalysis.

Principal reference(s):

1. Kaplan HI, Sadock BJ, Grebb JA. Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences, clinical psychiatry. Williams & Wilkins Co; 1994.

Student assessment practices:

- Written Exam
- Oral Exam

Title of the Course: Genetics

Code of the course: 14

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0	1
Hour (s):	17	0	17

Course Description:

This course deals with fundamental aspects of Genetics: DNA structure, replication and synthesis gene regulation, chromosomal analysis.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge of genetics.

Course syllabus:

- Cell structure
- DNA structure, DNA replication, DNA synthesis.
- Gene regulations.
- Principles of chromosomal analysis and karyotype.
- Genetic counseling.
- Pharmacogenetics prenatal diagnosis.
- Immunogenetics and genetic disease.
- Molecular genetics in medicine.
- Mendel’s experience and Mendel's law.
- Pattern of inheritance of monogenic dominant.
- Recessive and sex-linked trails.
- Sex cremation.
- Lyan hypothesis.

Principal reference(s):

1. Nussbaum RL, McInnes RR, Willard HF. Thompson genetics in medicine. Elsevier Health Sciences; 2015.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Neurology

Code of the course: 15

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): NeuroAnatomy

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course Description:

This course deals with fundamental aspects of neurology.

General objective of the course:

The purpose of this course is to provide the students the opportunities to acquire basic and fundamental knowledge in neurology.

Course syllabus:

- Preface and introduction of neurology.
- Clinical study of neurological patients.
- Motor, sensory and reflex assessments.
- General items related to cerebro-spinal fluid, and lumber puncture.
- Epilepsy and its different types,
- Brain humors, glopma, abscess, hematoma infection.
- General items related to cereberovascular disorders, trauma and their out coming result.
- Headaches.
- Different kinds of paralysis caused by upper and lower motor neuron lesions and comparison of their clinical symptoms.
- Abnormal tones, reflexes and movements (tremor, athetoid, chorea, hemibalismus).
- Variations in muscle tone in pyramidal and extrapyramidal syndromes, balance disorders, sensory disorders, different kinds of senses and sensory tests. Assessment of paresthesia caused by neuropathy.
- Sensory disorders caused by spinal cord injuries.
- Spinal degenerative disease, multiple sclerosis.
- General items related to speech disorders.
- Peripheral nervous system disorders and diseases, neuritis, neuropathies, lesions of peripheral nerves.
- General explanation about cranial nerves and their involvement and detailed description of seventh cranial nerve lesions.
- Central nervous system infections (viral infections, syphilis, meningitis, encephalitis, poliomyelitis.
- Developmental anomalies (cerebrum and spinal cord).

Principal reference(s):

1. Lennon S. The theoretical basis of neurological physiotherapy. Physical Management in Neurological Rehabilitation 2nd edn Edinburgh: Elsevier Mosby. 2004.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Cardiovasculo-pulmonary Diseases

Code of the course: 15

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

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	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

_____

Course description:

This course deals with cardiopulmonary and cardiovascular physiology and diseases. This also includes circulatory problems, digestive and urogenital system conditions, as well covers pediatric conditions.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge of internal medicine with more emphasis on cardiopulmonary, cardiovascular digestive and urogenital system and pediatrics conditions and diseases.

Course syllabus:

- Anatomy, physiology and Mechanics of cardiovascular & respiratory system.
- Patient evaluation in cardiopulmonary and cardiovascular diseases.
- Examination including clinical and Para clinical.
- Respiratory diseases (kinds, etiology, sign and symptoms)
- Cardiovascular diseases (kinds, etiology, sign and symptoms)
- Digestive system conditions and diseases
- Urogenital system conditions and diseases.
- Pediatrics conditions and diseases.

Principal reference(s):

1. Goldman L, Ausiello DA. Cecil medicine. Saunders Elsevier Philadelphia; 2008.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Skin and Rheumatologic Diseases

Code of the course: 17

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with rheumatologic and dermatologist (integumentary) diseases.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge of internal medicine with a concentration on Rheumatologic and Dermatological conditions and diseases.

Course syllabus:

- Rheumatoid diseases.
- Septic arthritis.
- Osteoarthritis.
- Rheumatoid arthritis.
- Collagen and dermatology diseases.
- Ankylosing spondylitis.
- Non – arthropathic rheumatism.
- Gout.
- Pseudo gout.

Principal reference(s):

1. Dziedzic K, Hammond A. Rheumatology: evidence-based practice for physiotherapists and occupational therapists. Elsevier Health Sciences; 2010.

Student assessment practices:

- Written Exam
- Oral Exam

Title of the Course: General Surgery

Code of the course: 18

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with common surgeries and complications that physical therapist deals with those after surgery.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge regarding common complications after surgery.

Course syllabus:

- Common complications after surgeries (general)
- Common complications after gynecologic surgeries.
- Common complications after neurosurgery.
- Common complications after spinal cord and soft tissue lesions and surgeries.
- Common complications after thoracic surgeries.

Surgeries and common complications of conditions such as tumors, burns, and wounds.

Principal reference(s):

1. Quick CR, Biers S, Arulampalam T, Deakin PJ. Essential Surgery: Problems, Diagnosis and Management. Elsevier Health Sciences; 2019.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Orthopedics

Code of the course: 19

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): Anatomy I, II, III, IV

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals basic and fundamental aspects of orthopedic conditions, injuries and diseases. This also includes various types of surgeries such as amputations and different kinds of management in fractures and dislocations.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge in orthopedics.

Course syllabus:

- General items related to the structure and kinds of bones, joint, muscles and soft tissues.
- Congenital malformations of vertebral column.
- Congenital malformations of extremities.
- Dislocations and their complications and management.
- Fractures and their complications and management.
- Bone diseases such as metabolic, infectious and etc.
- Bone diseases caused by endocrine system deficiency
- Tumors.
- Joint & Muscular diseases.
- Tendon and ligament injuries.
- Amputations.

Principal reference(s):

1. Brotzman SB, Manske RC. Clinical orthopaedic rehabilitation: An evidence-based approach-expert consult. Elsevier Health Sciences; 2011.

2. Mercier L. Practical Orthopedics E-Book. Elsevier Health Sciences; 2008.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Radiology

Code of the course: 20

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): Anatomy I, II, III, IV

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with basic and fundamental aspects of radiology. This also includes radiological diagnosis of various diseases and conditions.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge and skills in radiology and radiological diagnosis of various diseases and conditions.

Course syllabus:

- Definitions of radiology terms.
- Properties and application of radiation (x-ray)
- Positioning in radiology.
- Different types of radiography.
- Radiological signs of disorders and diseases, including but not limited to:

Tumors, Metabolic diseases of bone and joint, Rheumatic diseases, Osteoarthritis, Bony disorders caused by blood circulation deficiency, Deformities of extremities, Deformities of vertebral column, Vertebral column disorders and diseases, Radiological diagnosis of fractures.

Principal reference(s):

1. Harper RK. Book Review: Roentgenologic Diagnosis. SAGE Publications; 1972.

2. Butler P, Mitchell AW, Ellis H. Applied radiological anatomy. Cambridge University Press; 1999.

3. Harman B. Diagnostic Imaging for Physical Therapists. New Zealand Journal of Physiotherapy; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: First Aides & Emergencies

Code of the course: 21

Type of the course: □General ☑Basic □Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course description:

First aid at the pre-hospital stage, intensive therapy in various types of shock and comatose states.

Emergency services in various diseases and conditions such as: cardiovascular system, respiratory system, nervous system, digestive organs, urogenital system, obstetrics and gynecology, infectious disease.

Emergency services in accidents and traumatic injuries.

Injuries of musculoskeletal, locomotors and weight bearing organs.

Abdominal, Skull and brain injuries.

Burns and thermal injuries.

Acute poisoning and bites of venomous animals and insects.

Pediatric emergency services.

Airway clearance techniques and cardiopulmonary resuscitation.

Required medicines at home.

Practice in the class.

Principal reference(s):

1. Clement I. Textbook on First Aid and Emergency Nursing. Jaypee Brothers Publishers; 2013.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Principles of Rehabilitation

Code of the course: 22

Number of Credits: 2 Units
Type of the course: Theoretical
Prerequisite: None

Principal objective(s) of the course:
Familiarity of students with the history, definitions and philosophy of rehabilitation, its sub-disciplines & its common processes, approaches.

Course description:
In this course, the student gets acquainted with the general objectives of rehabilitation, its classification and definitions, members of the rehabilitation team, and the role of speech therapy/ audiology/ physiotherapy/ occupational therapy expert in the team. In addition, the student practically observes rehabilitation activities in the centers so that s/he can work in the rehabilitation team in the future.

Main topics: 34 hours

Theoretical: 2 units (34 hours)

1- Definition of rehabilitation

2- History of rehabilitation

3- Familiarity with the members of the rehabilitation group (the rehabilitation team):

a) Speech therapy

b) Audiology

c) Physiotherapy

d) Occupational therapy

e) Optometry

f) Technical orthopedics

4- Types of rehabilitation:

a) Preventive rehabilitation

b) Medical rehabilitation

c) Professional rehabilitation

5- Definition of health

6- Definition of injury, disability and participation

7- Definition of the client

8- Definition of disability, injury & rehabilitation

9- Introducing the World Health Organization & its affiliated institutions

10- Introducing the rehabilitation team & describing the functions of team members.

11- Introducing two approaches (ICF & CBR) & explaining the role of occupational therapists in these two approaches

12- Physical therapy settings, categorizing diseases and disabilities which physical therapists can participate in their treatment and rehabilitation.

13- Principles of primary physical examination: Introduction to a physical therapy program, considered courses & skills which student is expected to acquire.

14- Introduction to physical therapy intervention methods including: Electrotherapy: instruments, methods, indications and contraindications. Mechanotherapy: instruments, methods of therapeutic exercises, outline on treatment of various methods and Hydrotherapy: instruments, water properties, indications and contraindications.

15 – Familiarity with legal and ethical aspects of physical therapy, professional behaviors and touch in physical therapy, dress code, principals of administration, roles and responsibilities of physical therapists.

Principal reference(s):

1. Katz J. Handbook of Clinical Audiology. Last edition, Baltimore: Willams & wilkins.
2. Mitra R. Principles of Rehabilitation Medicine. McGraw-Hill; 2019.

Student assessment practices:

- Written Exam
- Oral Exam

Title of the Course: Advance English & Medical Terminology

Code of the course: 23

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course is designed to provide study practical application of medical vocabulary according to body systems.

Basic construction of medical words.

Word origins and roots.

Prefix and suffixes.

Specialized language abbreviation, acronyms, synonyms and symbols.

Body systems, laboratory tests, radiology and other diagnostic and therapeutic procedures and diseases.

Principal reference(s):

1. Didari, English for students of rehabilitation, Last edition.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Physical therapy in Cardiovasculo-Pulmonary conditions

Code of the course: 24

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Cardiovasculo-pulmonary Diseases

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course description:

This course deals with indication of physical therapy in cardiopulmonary conditions. This also includes detailed evaluation and management of vascular disorders, chest and core shape.

General objectives of the course:

The purpose of this course is to provide the student opportunities to acquire basic knowledge, skills and attitudes, relevant to the evaluation, examination, administrative and interventions of cardiopulmonary conditions.

Course syllabus:

- Review of Anatomy and physiology of cardio respiratory system.

- General items related to breaking exercise (aerobic capacity, external respiration, circulation, respiration an aerobic conditioning).
- Principles of physical therapy evaluation and intervention in respiratory condition and diseases, including but not restricted to:
- Respiratory infections
- Chronic bronchitis
- Emphysema
- Asthma
- Pulmonary emboli
- Lung tumors
- Pleural diseases, etc.
- Principles of physical therapy evaluation and intervention in thoracic conditions a surgery.
- Principles of physical therapy evaluation and intervention in cardiovascular conditions and operations.
- Methods of endurance and aerobic conditioning exercises.

Principal reference(s):

1. Hillegass E. Essentials of Cardiopulmonary Physical Therapy. Elsevier Health Sciences; 2021.

2.Frownfelter DL. Chest physical therapy and pulmonary rehabilitation. Year book medical publishers. 1987.

3. Bath J, Scarle E, Jones C, Bohin G. Cardiac rehabilitation: a workbook for use with group programmes. John Wiley & Sons; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Physical therapy in skin and Rheumatologic Diseases

Code of the course: 25

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Skin and Rheumatologic Diseases

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with indication of physical therapy in rheumatologic conditions that include complete and detailed evaluation and management of rheumatologic diseases.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes, relevant to the evaluation, administrative management and interventions of rheumatologic condition and diseases.

Course syllabus:

Principles of physical therapy in rheumatologic conditions and diseases, including but not restricted to:

- Physical therapy evaluation and interventions in rheumatoid arthritis and juvenile rheumatoid (steel's disease)
- Physical therapy evaluation and intervention in ankylosing spondylitis.
- Physical therapy evaluation and interventions in inflammatory arthritis, rheumatic fever and infections arthritis.
- Physical therapy evaluation and intervention in tuberculosis of bone.
- Physical therapy evaluation and intervention in osteomyelitis.
- Physical therapy evaluation and intervention in degenerative joint disease.

Principal reference(s):

1.Banwell BF, Gall V. Physical therapy management of arthritis. Churchill Livingstone; 1988.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Physical therapy in Surgical Condition

Code of the course: 26

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): General Surgery

	Theo.	Prac.	Total
Credit(s):	1	1	2
Hour (s):	17	34	51

Course description:

This course deals with indication of physical therapy in surgical conditions. This also includes detailed evaluation and management in burn. Debridement, wound care and associated topics in integumentary system.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge. Skills and attitudes, relevant to evaluation, examination administration and interventions of surgical conditions and integumentary system.

Course syllabus:

- Common complication after surgeries.
- Physical therapy in general operation.
- Physical therapy in gynecology and related matters such as: normal and abnormal pregnancy and labor, therapeutic exercises during pregnancy and preparation for easy labor, labor positions, as well general regulations for gynecology and obstetrics wards.
- Physical therapy in neurosurgery (brain, spinal cord, and so on)
- Physical therapy in burn, debridement and wound care.
- Physical therapy in plastic and reconstructive surgery, Integumentary and soft tissue lesions and surgical procedure.
- Physical therapy in sport injuries
- Physical therapy in dislocation, and touched on soft tissue lesions.\Physical therapy in amputation.

Principal reference(s):

1. Downie PA. Cash's Textbook of General Medical and Surgical Conditions for

Physiotherapists: Patricia A Downie. 1984.

2. Kisner C, Colby L. Theraputc Exercise, Function and Techniques. NewDehli: Jaypee

Brother’s Medical Publishers; 1996.

Student assessment practices:

• Written Exam

• Oral Exam

•Practical Exam

Title of the Course: Orthopedic Physical Therapy (I)

Code of the course: 27

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Orthopedics

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course description:

The course deals with indication of physical therapy in orthopedic condition. This also includes complete and detailed evaluation and intervention of musculoskeletal disorders

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes, relevant to the evaluation, examination, administration and interventions of orthopedic and musculoskeletal conditions of upper quadrant and upper extremities.

Course syllabus:

- Appraisal and evaluation of musculoskeletal disorders, including but not restricted to: Congenital, familial and acquired.

- Pathophysiology of joint lesions including but not restricted to: Dislocation, subluxation, fractures and intra articular derangements.
- Physical therapy in soft tissue lesions.
- Physical therapy in tumors.
- Physical therapy during the process of healing in musculoskeletal system.
- Physical therapy in grafts of tendons and muscle.
- Different school of thought in exercise therapy in musculoskeletal and orthopedic conditions.
-

Principal reference(s):

1. Magee DJ. Orthopedic physical assessment. Elsevier Health Sciences; 2014.

2. Hertling D, Kessler RM. Management of common musculoskeletal disorders. Physical therapy principles and methods. 1996.

3. Saidoff DC, McDonough AL. Critical pathways in therapeutic intervention: Extremities and spine. CV Mosby; 2001.

4. Brotzman SB, Manske RC. Clinical orthopaedic rehabilitation: An evidence-based approach. Elsevier Health Sciences; 2011.

5. Maxey L, Magnusson J. Rehabilitation for the postsurgical orthopedic patient. Elsevier Health Sciences; 2013.

6. Skirven TM, Osterman AL, Fedorczyk J, Amadio PC, Felder S, Shin EK. Rehabilitation of the Hand and Upper Extremity. Elsevier Health Sciences; 2020.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Orthopedic Physical Therapy (II)

Code of the course: 28

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Orthopedics

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

The course deals with indication of physical therapy in orthopedic condition. This also includes complete and detailed evaluation and intervention of musculoskeletal disorders.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes, relevant to the evaluation, examination, administration and interventions of orthopedic and musculoskeletal conditions of lower quadrant and lower extremities.

Course syllabus:

- Appraisal and evaluation of musculoskeletal disorders, including but not restricted to: Congenital, familial and acquired.
- Pathophysiology of joint lesions including but not restricted to: Dislocation, subluxation, fractures and intra articular derangements.

- Physical therapy in soft tissue lesions.
- Physical therapy in tumors.
- Physical therapy during the process of healing in musculoskeletal system.
- Physical therapy in grafts of tendons and muscle.

Different school of thought in exercise therapy in musculoskeletal and orthopedic conditions.

Principal reference(s):

1. Magee DJ. Orthopedic physical assessment. Elsevier Health Sciences; 2014.

2. Hertling D, Kessler RM. Management of common musculoskeletal disorders. Physical therapy principles and methods. 1996.

3. Saidoff DC, McDonough AL. Critical pathways in therapeutic intervention: Extremities and spine. CV Mosby; 2001.

4. Brotzman SB, Manske RC. Clinical orthopaedic rehabilitation e-book: An evidence-based approach-expert consult. Elsevier Health Sciences; 2011.

5. Maxey L, Magnusson J. Rehabilitation for the postsurgical orthopedic patient. Elsevier Health Sciences; 2013.

6. Skirven TM, Osterman AL, Fedorczyk J, Amadio PC, Felder S, Shin EK. Rehabilitation of the Hand and Upper Extremity. Elsevier Health Sciences; 2020.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Biomechanics & Kinesiology I (General & Upper limbs)

Code of the course: 29

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Anatomy III (Shoulder Girdle & Upper Limbs)

	Theo.	Prac.	Total
Credit(s):	2	0	2
Hour (s):	34	0	34

Course description:

The course deals with principles of kinesiology and mechanics in the human body, anatomic and physiologic basic of human motions. The course also deals with principles of kinesiology and mechanics in upper extremity that includes detailed study of motion analysis.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge in kinesiology and biomechanics of the upper extremity.

Course syllabus:

- General aspects in kinesiology and biomechanics.
- Mechanical Principles and their application in human body.
- Bio mechanics of bone, joint and muscular tissue.
- Structure and shape of the upper extremity including;
  Bones, Joints, Muscles, Ligaments, Axis of motion, Range of motion.

Movement analysis, joint integrity and mobility in: Shoulder, elbow, forearm, wrist, hand, fingers.

Principal reference(s):

1. Neumann DA. Kinesiology of the musculoskeletal system; Foundation for rehabilitation. Mosby & Elsevier. 2010.

2. Levangie PK, Norkin CC. Joint structure and function: a comprehensive analysis. 2011.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Biomechanics & Kinesiology II (lower limbs)

Code of the course: 30

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Anatomy IV (Pelvic& Lower Limbs)

	Theo.	Prac.	Total
Credit(s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with principles of kinesiology and mechanics in lower extremity that includes detailed study of motion analysis.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge in kinesiology and biomechanics of the lower extremities.

Course syllabus:

- Structure and shape of lower extremity including:
  Bones, joints and muscles,
- Axis of motions
- Range of motion analysis, joint integrity and mobility including:
  Hip, hip, knee, ankle, foot, toes,
- Posture and postural assessment
- Gait analysis

Principal reference(s):

1. Neumann DA. Kinesiology of the musculoskeletal system; Foundation for rehabilitation. Mosby & Elsevier. 2010.

2. Levangie PK, Norkin CC. Joint structure and function: a comprehensive analysis. 2011.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Biomechanics & Kinesiology III (Vertebral column)

Code of the course: 31

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Anatomy I, II (Head, Neck & Trunk)

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

The course deals with principles of kinesiology and mechanics of trunk and spinal column.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge in kinesiology and human body mechanics of the vertebral column.

Course syllabus:

- Anatomic and physiologic basis of spinal movement
- Kinesiology and biomechanics of truck and spinal column.
- Structure and shape of the spinal column, including muscles, bone, joints, curvatures, ligaments.

Spinal column functions and balance.

Principal reference(s):

1. Neumann DA. Kinesiology of the musculoskeletal system; Foundation for rehabilitation. Mosby & Elsevier. 2010.

2. Levangie PK, Norkin CC. Joint structure and function: a comprehensive analysis. 2011.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Therapeutic Exercises I (Principles)

Code of the course: 32

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Anatomy III, IV and Biomechanics & Kinesiology I

	Theo.	Prac.	Total
Credit(s):	2	1	3
Hour (s):	34	34	68

Course description:

This course deals with principles of movement and exercise, classification of movement, physiology of exercise, classification of physiology of exercise and fatigue. This also includes Hydrotherapy and Mechanotherapy.

General objective of the course:

The purpose of this course is to provide the student opportunities to acquire basic and fundamental knowledge and skills in different aspects of exercise therapy, principles of movement and exercise in land and water (Hydrotherapy) with and without instrument also includes Mechanotherapy.

Course syllabus:

A. Theory
- Principles of movement and exercise.
- Starting position exercise therapy.
- Classification of movements.
- Methods of relaxation.

- Methods of muscle strengthening.
- Neuromuscular co-ordination
- Trick movements
- Educational techniques
- Hydrotherapy
- Mechanotherapy
- Physiology of exercise and fatigue
- Methods of suspension and its instruments.
- Mats exercises.
- General exercises.

B. Practice in Lab

Principal reference(s):

1. Kisner C, Colby LA, Borstad J. Therapeutic exercise: foundations and techniques. Fa Davis; 2017.

2. Hollis M, Cook PF. Practical exercise therapy. Wiley-Blackwell; 1999.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Therapeutic Exercises II (PNF & MET)

Code of the course: 33

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Therapeutic Exercises I

	Theo.	Prac.	Total
Credit(s):	1	1	2
Hour (s):	17	34	51

Course description:

This course deals with principles of movement and exercise with More emphasis on proprioceptive neuromuscular facilitation. This also includes exercises and movement according to neuromotor development**.**

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire fundaments and advanced knowledge and skills in exercise therapy with emphasis on reflux and sensory integrity including proprioception and kinesthesia.

Course syllabus:

A. Theory

- Principles of treatment by proprioceptive neuromuscular facilitation.
- Patterns of facilitation
- Various methods of facilitation
- Facilitation in upper extremity

- Facilitation in lower extremity
- Facilitation in trunk

B. Practice in Lab (gym)

Principal reference(s):

1. Voss DE. Proprioceptive neuromuscular facilitation. Patterns and Techniques. 1985.

2. Chaitow L, Crenshaw K. Muscle energy techniques. Elsevier Health Sciences; 2006.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Physical Therapy in neurological disease 1

Code of the course: 34

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Neurology

	Theo.	Prac.	Total
Credit (s):	2	0	2
Hour (s):	34	0	34

Course description:

This course deals with indication of physical therapy in neurological conditions that includes complete and detailed evaluation and management of neurological and neuromuscular conditions.

General objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes, relevant to the evaluation examine administration and the interventions of neurological and neuromuscular conditions.

Course syllabus:

- Indication of physical therapy in neurological and neuromuscular conditions.
- Examination and evaluation of neurological patients.
- Classification of neurological disorders.
- Principles of physical therapy in nervous and neuromuscular system.
- Principles of physical therapy evaluation and management in central nervous system, such as: Hemiplegia, Trauma, Spinal cord injuries, Spina-bifida, Cerebral palsy, Parkinson's, Viral infections,

- Principles of physical therapy evaluation and management in the peripheral nervous system, such as: Neuritis, Peripheral nerve disorders and lesions.
- Principles of physical therapy evaluation and management in neuromuscular conditions.
- Principles of physical therapy evaluation and management in psychopathic disorders.

Principal reference(s):

1. Lennon S, Stokes M. Pocketbook of Neurological Physiotherapy E-Book. Elsevier Health Sciences; 2008.

2. O'Sullivan SB, Schmitz TJ, Fulk G. Physical rehabilitation. FA Davis; 2019.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Physical Therapy in neurological diseases II (Hemiplegic)

Code of the course: 35

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Physical Therapy in neurological diseases I

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course description:

The course deals with principles of evaluation and assessment of reflexes as well sensory integrity with emphasis on patients with hemiplegia.

General Objective of the course:

The purpose of this course is to provide the students opportunities to acquire advanced knowledge and skills in exercise therapy with emphasis on hemiplegia disease.

Course syllabus:

A. Theory

- Evaluation and reflex assessment
- Automatic assessment in patients with upper motor neuron diseases.
- Arranging short term and long term planning exercise therapy.
- Reassessment

- Treatment principles and techniques in different schools of thought, and different points of view, including but not limited to: Bobath, Frankle's, Braunstrom, Rood.

B. Practice in lab (gymnasium)

Principal reference(s):

1. Cech DJ. Functional movement development across the life span. Elsevier Health Sciences; 2011.

2. Stokes M, Stack E. Physical Management for Neurological Conditions:[Formerly Physical Management in Neurological Rehabilitation E-Book]. Elsevier Health Sciences; 2011.

3. Levitt S, Addison A. Treatment of cerebral palsy and motor delay. John Wiley & Sons; 2018.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Physical Therapy in neurological diseases III (Cerebral Palsy)

Code of the course: 36

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Physical Therapy in neurological diseases I & II

	Theo.	Prac.	Total
Credit(s):	1	1	2
Hour (s):	17	34	51

Course description:

The course deals with principles of evaluation and assessment of reflexes as well sensory integrity with emphasis on patients with different type of cerebral palsy.

General Objective of the course:

The purpose of this course is to provide the students opportunities to acquire advanced knowledge and skills in exercise therapy with emphasis on cerebral palsy.

Course syllabus:

A. Theory
- Evaluation and reflex assessment
- Reflex assessment in patients with upper motor neuron diseases.
- Arranging short term and long term planning exercise therapy.
- Reassessment
- Treatment principles and techniques in different schools of thought, and different points of view, including but not limited to: Bobath, Frankle's, Braunstrom, Rood.

B. Practice in lab (gymnasium)

Principal reference(s):

1.Stokes M, Stack E. Physical Management for Neurological Conditions:[Formerly Physical Management in Neurological Rehabilitation]. Elsevier Health Sciences; 2011.

2. Greenwood RJ, McMillan TM, Barnes MP, Ward CD. Handbook of neurological rehabilitation. Psychology Press; 2005.

3. Lennon S, Stokes M. Pocketbook of Neurological Physiotherapy E-Book. Elsevier Health Sciences; 2008.

4. O'Sullivan SB, Schmitz TJ, Fulk G. Physical rehabilitation. FA Davis; 2019.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Electrotherapy I (Thermal Agents)

Code of the course: 37

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit(s):	2	1	3
Hour (s):	34	34	68

Course Description:

This course deals with principles of Electrotherapy, Electrotherapeutic modalities and thermal agent.

General Objective of the Course:

The purpose of the course is to provide the students opportunities to acquire basic and fundamental knowledge and skills in Electrotherapy as well as an introduction to Thermal agent and modalities.

Course Syllabus:

A. Theory:
   - History of Electrotherapy
   - Introduction to Electrotherapy
   - Electrostatic
   - Concepts in thermal physics
   - Radiation and heat
   - Thermal agents

- Methods of heat generation
- Physiology and Therapeutic effects of thermal agents (heat and cold)

- Indications and contraindications in modalities such as: Hot pack, Paraffin bath, Infrared, Ultraviolet, Short wave diathermy, Micro wave diathermy. Laser, ultrasound.
- Phonophoresis.
- Therapeutic and physiologic effects of cold
- Indications and contraindications of cold

B. Practice in clinic.

Principal reference(s):

1. Cameron MH. Physical agents in rehabilitation: from research to practice. Elsevier Health Sciences; 2012.

2. Cornwall MW. Electrotherapy Explained: Principles and Practice, 4 edition. 2007.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Electrotherapy II (Electrical Modalities)

Code of the course: 38

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Muscle and Nerve Physiology

	Theo.	Prac.	Total
Credit (s):	2	1	3
Hour (s):	34	34	68

Course Description:

This course deals with advanced aspects of Electrotherapy in the field of thermal agents and radiation therapy.

General Objective of the Course

The purpose of this course is to provide the students opportunities to acquire advanced knowledge and skills in Electrotherapy with emphasis on thermal agents and radiation therapy.

Course Syllabus:

A. -Theory:

- Electrical currents, Electrical shocks, Electrical stimulation of nerve and muscle.
- Introduce and indication of:
- Low frequency currents such as TENS, Faradic, High voltage, Micro current, Diadynamic currents,
- Medium frequency currents such as:
- Interferential and Russian currents.
- Direct and Modified direct currents.

- Strength Duration Curve (SDC).
- Iontophoresis.
- Contraindication of electrical stimulation.
- Biofeedback.

B. Practice in clinic

Principal reference(s):

1. Cameron MH. Physical agents in rehabilitation: from research to practice. Elsevier Health Sciences; 2012.

2. Cornwall MW. Electrotherapy Explained: Principles and Practice, 4edition. 2007.

Student assessment practices:

• Written Exam
• Oral Exam
• Practical Exam

Title of the Course: Orthetics, Prosthetic & Assistive Device

Code of the course: 39

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Therapeutic Exercises I (Principles)

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course Description:

This course deals with indication, examination, evaluation and interventions of orthotics and prosthetics in physical therapy and rehabilitation. This also includes mechanical principles, prescription, application, fabrication of assistive, adaptive, protective, supportive, orthotic and prosthetic devices and equipment.

General Objective of the Course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes relevant to examination, evaluation and interventions of orthotics and prosthetics in physical therapy and rehabilitation.

Course syllabus

A. -Theory
   - Mechanical principles of orthotics and prosthetics
   - External power sources for brace
   - Reasons for prescription
   - Metals and kinds of plastic and rubber materials in manufacturing process
   - Corsets and soft assistive devices
   - Cervical, thoracic, lumbar, lower and upper extremity braces

- Different types of upper extremity splints for forearm, wrist, hand and fingers
- Brace in scoliosis, spasticity and muscular weakness
- Medical shoe
- Furniture, assistive devices for handicapped
- Adjustment in car (automobile) and its adaptive devices for handicapped
- Causes of amputation, statistics and related surgical and medical problems and ramifications
- Patient assessment prior to prescription of prosthetics
- Proper methods of prosthetics prescription
- Process of manufacturing
- First preliminary inspection
- Preliminary application and training
- Course (period) examination and re-evaluation
- Final review and valuation as well as follow up process
- Occupational problems with prosthetics
- Psychological problems related to amputation
- Gait analysis
- Biomechanics of lower extremity prosthetics at different levels of amputation
- Ready-made and trade products

B. Practice:

Methods of making prosthetics (manufacturing) adapting and controlling (follow-up) lower extremity prosthetics.

Hand prosthetics clinic (upper extremity)

Foot prosthetics clinic (lower extremity)

Wheel chair

Crutches, walking stick and various walking aids

Principal reference(s):

1. Park R, Kim D, Kim S, Kim J, Nam G, Nam H. Saunders manual of physical therapy practice.

Seoul: Daehak Publishing Co. 2006.

2. Nawoczenski D, Belyea B. Orthotics in functional rehabilitation of the lower limb.

Edinburgh; 1997.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Musculoskeletal Physical Examination (Muscle Testing)

Code of the course: 40

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Anatomy I, II, III & IV

	Theo.	Prac.	Total
Credit (s):	1	1	2
Hour (s):	17	34	51

Course Description:

This course deals with the different tests and measurement used in the evaluation process. This also includes history taking and proper documentation through the use of SOAP format.

General Objective of the course:

The purpose of this course is to provide the students opportunities to acquire basic knowledge, skills and attitudes, relevant to the administration of physical therapy tests and measurements on patients.

Course Syllabus:

A. -Theory

- Introduction
- History
- Principles of range of motion measurements
- Joint kinetic and kinematics
- Goniometry
- Principles of manual muscle testing
- Different positions of muscle testing
- Testing charts
- Muscle testing of: neck, trunk, upper and lower extremity.
- Gait analysis

- Normal gait phases
- Causal factors of gait
- Causes of pathological gait
- Testing of limb and muscle length and sizes

B: Practice in Laboratory

Principal reference(s):

1. Kendall HO, Kendall FP. Muscles. Testing And Function. LWW; 1949.

2. Hislop H, Avers D, Brown M. Daniels and Worthingham's muscle Testing: Techniques of manual examination and performance testing. Elsevier Health Sciences; 2013.

3. Norkin CC, White DJ. Measurement of joint motion: a guide to goniometry. FA Davis; 2016.

4. Jacquelin Perry M. Gait analysis: normal and pathological function. New Jersey: SLACK. 2010.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Manual Therapy I (Therapeutic Massage)

Code of the course: 41

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Anatomy I, II, III & IV

	Theo.	Prac.	Total
Credit(s):	1	1	2
Hour (s):	17	34	51

Course Description

This course deals with principles and fundamental aspects of massage and mobilization. This also includes different types and methods of massage and mobilization application.

General Objective of the Course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge and advanced skills in different types and methods of massage and its applications

Course syllabus:

A. -Theory

- History
- Physiological effects of massage on circulatory system (blood-lymph)
- Physiological effects of massage on nervous and neuromuscular system
- Physiological effects of massage on muscular tissue and musculoskeletal system
- Physiological effects of massage on lungs
- Physiological effects of massage on skin adipose (fatty) and integumentary system
- Physiological effects of massage on metabolism
- Types of massage

- Methods of massage application on whole body and limbs

B. Practice in laboratory

Principal reference(s):

1. Clay JH. Basic clinical massage therapy: integrating anatomy and treatment. Lippincott Williams & Wilkins; 2008.

2. Fritz S, Fritz L. Mosby's Essential Sciences for Therapeutic Massage: Anatomy, Physiology, Biomechanics, and Pathology. Elsevier Health Sciences; 2020.

3. Fritz S, Fritz L. Mosby's Fundamentals of Therapeutic Massage. Elsevier Health Sciences; 2020.

4.Hendrickson T. Massage for orthopedic conditions. Lippincott Williams & Wilkins; 2003.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Manual Therapy II (Mobilization)

Code of the course: 42

Type of the course: □General □Basic ☑Main

Prerequisite Title (s): Anatomy I, II, III & IV

	Theo.	Prac.	Total
Credit(s):	0	1	1
Hour (s):	0	34	34

Course Description:

This course deals with principles and fundamental aspects of massage and mobilization. This also includes different types and methods of mobilization application.

General Objective of the Course:

The purpose of this course is to provide the students opportunities to acquire basic and fundamental knowledge and advanced skills in different types and methods of mobilization and its applications.

Course syllabus:

A. -Theory
- History
- Physiological effects of mobilization on circulatory system (blood-lymph)
- Physiological effects of mobilization on nervous and neuromuscular system
- Physiological effects of mobilization on muscular tissue and musculoskeletal system
- Physiological effects of mobilization on lungs
- Physiological effects of mobilization on skin adipose (fatty) and integumentary system
- Physiological effects of mobilization on metabolism

- Types of massage
- Methods of mobilization application on whole body and limbs

B. Practice in laboratory

Principal reference(s):

1. Yaver J. Maitland's Peripheral Manipulation, 4th edition. Physical Therapy. 2007.

2. Hertling D, Kessler RM. Management of common musculoskeletal disorders. Physical therapy principles and methods. 1996.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Evidence-Based Physical Therapy

Code of the course: 43

Type of the course: (Main)

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0	1
Hour (s):	17	0	17

Course description:

According to the increasing trend of information, it seems necessary to classify this information according to evidences. The students should be able to analysis, formulate and respond to a special question related to various fields of clinical physical therapy.

General Objective of the course:

The purpose of this course is to provide the students opportunities to familiarized with the evidence based physical therapy and how to collect the evidences.

Course syllabus:

Definition and foundations of evidence based physical therapy and introducing the guidelines of the methods of physical therapy.

Principal reference(s):

1. Dawes M, Davies PT, Gray AM, Mant J, Seers K, Snowball R. Evidence Based Practice: a primer for health care professionals. 2005.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Professionalism

Code of the course: 44

Type of the course: (Main)

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0	1
Hour (s):	17	0	17

Course description:

Knowledge of the basics of ethics and values and professional communication is necessary for physical therapy graduates. It is necessary for the graduates of this field to work in different fields including services, management, research, and consulting while taking into account the ethical criteria.

General Objective of the course:

Familiarity with ethics, values and professional communication in physical therapy and methods of facing the challenges ahead.

Course syllabus:

Defining the profession and its characteristics, defining ethics and its theories, the importance of ethical behavior in the physical therapy profession and its consequences, mentioning patients' rights, mentioning the main values of the profession based on 7 main values of accountability, altruism, compassion / care, excellence, integrity, duty, social responsibility, describing the basics of professional ethics based on 3 principles of autonomy, beneficence, non-maleficence, and justice, providing standard codes of professional ethics in physical therapy, familiarity with critical thinking and problem solving in the face of ethical challenges, familiarity with civil rights, familiarity with organizational behavior.

Familiarity with communication skills (verbal, non-verbal and written skills), communication skills with patients (child, elderly and other vulnerable groups), with colleague and health workers by taking into account individual and cultural differences, how to deal with the patient (child, the elderly and other vulnerable groups), effective factors in observing ethics and professional ethics.

Principal reference(s):

1. Gabard DL, Martin MW. Physical therapy ethics. FA Davis; 2010.

Student assessment practices:

• Written Exam

• Oral Exam

Title of the Course: Management of the Physical Therapy Clinic

Code of the course: 45

Type of the course: (Main)

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	1	0	1
Hour (s):	17	0	17

Course description:

Knowing and combining the contents related to the field of management and physical therapy can lead to the establishment of physical therapy clinic in private clinics, rehabilitation centers, institutions and organizations in the country. Additionally, it leads to delivering the high quality and regulated services of physical therapy and improving the quality of medical services in the country and the quality of life of patients.

General Objective of the course:

Gain the ability to manage the physical therapy clinic, including the private sector, public and private clinics and hospitals, and charities.

Course syllabus:

Knowing the legal steps of managing the physical therapy clinic and the necessary instructions (including obtaining the necessary licenses from the Ministry of Health, the country's medical system organization, health system insurance, tax office and municipality), knowing the various sections including electrotherapy (standardization of cabinets and maintaining safety tips), mechanotherapy, manual therapy, exercise therapy and sports therapy, hydrotherapy.

Familiarity with physical therapy management software, observing the necessary standards for maintaining the safety and quality of the clinic while equipping it, careful selection and equipment of physical therapy facilities (easy and convenient access for patients and the disabled to enter and leave the center), knowing the points related to environmental health and personal health of personnel, familiarity with how to admit patients, date and time of patients' referral and treatment costs, familiarity with how to record general and specialized information of patients, archiving physical therapy files, registering insurance affairs, familiarity with staff employment, professional ethics.

Principal reference(s):

1. Robbins SP, Bergman R, Stagg I, Coulter M. Management. Pearson Australia; 2014.

2. Melnick ME. Introduction to Physical Therapy. Pagliarulo MA. St Louis, Mo, Mosby-Year Book Inc, 1996.

Student assessment practices:

• Written Exam

• Oral Exam

Clinical Practice (Internship)

Clinical internship begins with observation and shadowing in the fifth term year and gradually progress towards dependent and finally fully independent practice.

In observation, students familiar with assessments and some screening tools and also learn how to take a case history and document the patients sign and symptoms. In the next clinical trainings, students trained more advance under supervision of experienced physical therapist who has at least M.S degree and is the member of the educational staff of the faculty.

During the internship students of physical therapy have to complete the practicum with rotation in different setting from acute to sub-acute and chronic condition in varieties of setting from inpatients (hospital) to outpatient and extended care facilities, which include but not limited to: neurology and neurosurgery, orthopedics, rheumatology, cardiopulmonary, geriatrics, pediatrics, neonatal icu, obstetrics and gynecology, ccu, icu, general surgery and burn center, reconstructive and plastic surgery, acute, (intensive) rehabilitation and traumatology centers and clinics .

Furthermore students have to attend mandatory theory/practical meeting, lectures and conferences as morning report, self and peer review and discussion, clinical sessions and independent study time as well as evaluation and interventions of systems such as; cardiopulmonary, neuromuscular, integumentary, and musculoskeletal, in addition to general sciences review, that includes, but not limited to; anatomy, physiology, biology, pathology also clinical sciences and techniques, such as; different aspects of electrotherapy and electrotherapeutic modalities, manual therapy, mobilization, soft tissue massage and myofascial release, physical agents and mechanical modalities, orthotics and prosthesis prescription, fabrication and application of assistive and supportive devices.

Practice treatment skills and also modification of exercises for the home setting based on the patient's problems, providing knowledge of community resources.

Therapeutic exercises such as aerobic, anaerobic exercises, work conditioning and hardening as well as functional training and activities of daily living (ADL) at home, work and community. Patient related instruction including preparing patient for self- care and managing his/her activities of daily living at home, work with safety as well as evaluating different aspect of home, work and environmental barriers and helping patient in the process of returning back to community with the maximum potential as possible.

Communication skills between physiotherapist and patients and other health care professionals.

Professional, ethical, management, legal and medical record documentation issues will be taught and put into practice.

Title of the Course: Clinical Practice (Observation)

Code of the course: 46

Type of the course: □General □ Basic ☑Main

Prerequisite Title(s): None

	Theo.	Prac.	Total
Credit(s):	0	2	2
Hour(s):	0	102	102

Course description:

To be familiarized with different wards of the hospitals, including physical therapy and how to fulfil the patients' documents, and how to assess the patients, plan the required treatment and the methods of physical therapy.

Principal reference(s):

1- Rosemary M. Scully, Marylou R. Barnes, Physical Therapy, Lippincott Williams & Wilkins; 1989.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice (Cardiovascular-pulmonary)

Code of the course: 47

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

Cardio care unit (CCU), outpatient and inpatient wards, chest physical therapy. Breathing exercises, mobilization, cardio- pulmonary rehabilitation,

Exercise, pre and post cardiac surgery patients (heart transplant, bypass, valve surgery), chest and cardio -vascular surgical condition. General abdominal surgery.

In summary assessment, examination, diagnosis, and treatment/management in all cardio - pulmonary and vascular diseases and conditions, general surgery and internal medicine which needs physical therapy.

Please refer to clinical internship.

Principal reference(s):

1. Hillegass E. Essentials of Cardiopulmonary Physical Therapy. Elsevier Health Sciences; 2021.

2. Bath J, Scarle E, Jones C, Bohin G. Cardiac rehabilitation: a workbook for use with group programmes. John Wiley & Sons; 2009.

3. Kasper D, Fauci A, Hauser S, Longo D, Jameson J, Loscalzo J. Harrison's principles of internal medicine, 19e. Mcgraw-hill New York, NY, USA; 2015.

4. Gray FD. Cecil essentials of medicine. JAMA. 1987.

Student assessment practices:

- Written Exam
- Oral Exam
- Practical Exam

Title of the Course: Clinical Practice (Rheumatology and Skin)

Code of the course: 48

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

Rheumatoid arthritis, Psoriasis, Ankilosan spondylosis …

In summery assessment, examination, diagnosis, and treatment/management in all Rheumatology and Skin diseases which needs physical therapy.

Please refer to clinical internship.

Principal reference(s):

1. Banwell BF, Gall V. Physical therapy management of arthritis. Churchill Livingstone; 1988.

2. Kisner C, Colby LA, Borstad J. Therapeutic exercise: foundations and techniques. Fa Davis; 2017.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice (Burn and repair)

Code of the course: 49

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

All burns, including electrical, chemical, thermal, …and the related surgery including grafts and flaps.

In summary assessment, examination, diagnosis, and treatment/management in all burn conditions which need physical therapy.

Please refer to clinical internship.

Principal reference(s):

1. Kisner C, Colby LA, Borstad J. Therapeutic exercise: foundations and techniques. Fa Davis; 2017.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice I (Orthopedics)

Code of the course: 50

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

DESCRIPTION

Musculoskeletal conditions& diseases and injuries of upper quadrant and upper limbs. Pre and Postoperative intensive care for orthopedic surgery, pediatric congenital diseases (Erb, torticollis, ...), orthopedic injuries fracture and dislocation, arthroplasty, bone tumor, scoliosis, kyphosis, sport medicine and injuries, soft tissue injuries, physical modulates and techniques, soft tissue reconstructive surgeries. Musculoskeletal age related conditions and diseases. Please refer to clinical internship.

Principal reference(s):

1. Brotzman SB, Manske RC. Clinical orthopaedic rehabilitation: An evidence-based approach-expert consult. Elsevier Health Sciences; 2011.

2. Hertling D, Kessler RM. Management of common musculoskeletal disorders. Physical therapy principles and methods. 1996.

3. Kisner C, Colby L. Theraputc Exercise, Function and Techniques. NewDehli: Jaypee Brother's Medical Publishers; 1996.

4. Cornwall MW. Electrotherapy Explained: Principles and Practice, ed 4. Physical Therapy. 2007.

5. Cameron MH. Physical agents in rehabilitation: from research to practice. Elsevier Health Sciences; 2012.

6. Magee DJ. Orthopedic physical assessment-E-Book. Elsevier Health Sciences; 2014.

7. Donatelli RA, Wooden MJ. Orthopaedic physical therapy. Elsevier health sciences; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice II (Orthopedics)

Code of the course: 51

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

Musculoskeletal conditions& diseases and injuries of lower quadrant and lower limbs. Pre and Postoperative intensive care for orthopedic surgery, pediatric congenital diseases (clubfoot, CDH, ...), orthopedic injuries fracture and dislocation, arthroplasty, bone tumor, scoliosis, kyphosis, sport medicine and injuries, soft tissue injuries, physical modulates and techniques, soft tissue reconstructive surgeries. Musculoskeletal age related conditions and diseases. Please refer to clinical internship.

Principal reference(s):

1. Brotzman SB, Manske RC. Clinical orthopaedic rehabilitation: An evidence-based approach-expert consult. Elsevier Health Sciences; 2011.

2. Hertling D, Kessler RM. Management of common musculoskeletal disorders. Physical therapy principles and methods. 1996;

3. Kisner C, Colby L. Theraputc Exercise, Function and Techniques. NewDehli: Jaypee Brother's Medical Publishers; 1996.

4. Liebenson C. Rehabilitation of the spine: a practitioner's manual. Lippincott Williams & Wilkins; 2007.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice (Geriatrics)

Code of the course: 52

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

To familiarize with geriatrics conditions and home visit.

Admission, assessment and management of the different types of outpatients and those that cannot come to the clinics and are at home.

Principal reference(s):

1. Avers D, Wong R. Guccione's Geriatric Physical Therapy. Elsevier Health Sciences; 2019.

2. Kisner C, Colby L. Theraputc Exercise, Function and Techniques. NewDehli: Jaypee Brother's Medical Publishers; 1996.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice (Pediatrics)

Code of the course: 53

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

The purpose of this course is to provide the students the opportunities to acquire advanced clinical skills in pediatrics since these diseases are prevalent in the community.

Different methods and modalities of physical therapy for congenital, developmental and acquired conditions.

Principal reference(s):

1. Tecklin JS. Pediatric physical therapy. Lippincott Williams & Wilkins; 2008.

2. Palisano RJ, Orlin M, Schreiber J. Campbell's Physical Therapy for Children Expert Consult-E-Book. Elsevier Health Sciences; 2016.

3. Martin SC, Kessler M. Neurologic interventions for physical therapy. Elsevier Health Sciences; 2007.

4. Kisner C, Colby LA, Borstad J. Therapeutic exercise: foundations and techniques. Fa Davis; 2017.

5. Cornwall MW. Electrotherapy Explained: Principles and Practice, 4th edition. Physical Therapy. 2007.

6. Cameron MH. Physical agents in rehabilitation: from research to practice. Elsevier Health Sciences; 2012.

7. Donatelli RA, Wooden MJ. Orthopaedic physical therapy. Elsevier health sciences; 2009.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice I (Neurology)

Code of the course: 54

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

Course description:

Outpatient and neurology ward patients and rehabilitation, including ICU, neurologic diseases, disorders and injuries, CVA, Coma, brain surgery, stroke and hemiplegia, cerebral palsy, neuro-developmental treatment, exercise and technics, pain clinic, regaining functional activity ADL, education, diagnosis, examination and treatment, management in all neurological conditions, applying exercise and physical agents and modulates programs and exercise education. Please refer to clinical internship.

Principal reference(s):

1. Stokes M, Stack E. Physical Management for Neurological Conditions:[Formerly Physical Management in Neurological Rehabilitation]. Elsevier Health Sciences; 2011.

2. Lazaro RT, Reina-Guerra SG, Quiben M. Umphred's Neurological Rehabilitation. Elsevier Health Sciences; 2019.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice II (Neurology)

Code of the course: 55

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): Clinical Practice (Observation)

	Theo.	Prac.	Total
Credit (s):	0	2	2
Hour (s):	0	102	102

DESCRIPTION

Outpatient and neurology ward patients and rehabilitation, including ICU, neurologic diseases, disorders and injuries, CVA, Coma, brain surgery, stroke and hemiplegia, cerebral palsy, neuro-developmental treatment, exercise and technics, pain clinic, regaining functional activity ADL, education, diagnosis, examination and treatment, management in all neurological condition, applying exercise and physical agents and modulates programs and exercise education. Please refer to clinical internship.

Principal reference(s):

1. Stokes M, Stack E. Physical Management for Neurological Conditions:[Formerly Physical Management in Neurological Rehabilitation]. Elsevier Health Sciences; 2011.

2. Lazaro RT, Reina-Guerra SG, Quiben M. Umphred's Neurological Rehabilitation-E-Book. Elsevier Health Sciences; 2019.

3. O'Sullivan SB, Schmitz TJ, Fulk G. Physical rehabilitation. FA Davis; 2019.

4. Brunnstrom S. Movement therapy in hemiplegia. A neurophysiological approach. 1970.

5. Davies PM, Bobath B. Steps to follow: a guide to the treatment of adult hemiplegia. Springer; 1985.

Student assessment practices:

• Written Exam

• Oral Exam

• Practical Exam

Title of the Course: Clinical Practice (Independent Practice)

Code of the course: 56

Type of the course: □General □ Basic ☑Main

Prerequisite Title (s): None

	Theo.	Prac.	Total
Credit (s):	0	4	4
Hour (s):	0	408	408
