Master in Physiotherapy (MPT) Program

The Master's Program in Physiotherapy (MPT) has been established at Al-Quds University in 2018/2019, it is the first master's program in Physiotherapy in Palestine. The MPT is devoted to the development of the healthcare in the Palestinian community consistent with the dynamic healthcare environment, by optimizing physiotherapy contribution to the health and well being at both national and international levels.

The program is based on the principles and concepts of clinical reasoning and evidence-based practices in physiotherapy. The curriculum consists of theoretical, practical and research courses covering a wide range of areas of physiotherapy including cardiopulmonary, orthopedics, neurology, pediatrics and geriatrics.

Duration of studies:

The duration of the MPT is two academic years of full time study.

Admission Prerequisites:

- Bachelor degree in Physiotherapy from an accredited Physiotherapy program, with at least cumulative average 70% (good or equivalent).
- A minimum of two years' experience post B.Sc. in Physiotherapy field.
- English proficiency.
- Successful completion of a personal interview with the MPT committee.

Program goals:

- Improve quality of physiotherapy and rehabilitation services provided by qualified physiotherapists to the Palestinian community in various sub-specialties of orthopedic, neurology, cardiopulmonary, pediatric and geriatric.
- Build up competencies required to effectively work as a postgraduate level in clinical work including initiative, leadership and interdisciplinary team work skills.
- Develop the scientific research capabilities of the graduates by initiating and enhancing productive research in physiotherapy.

- Strengthen the competencies of clinical standards and policies supported by evidence-based practice and clinical reasoning in physiotherapy and rehabilitation.
- Create opportunities for further professional and scientific development in the field of physiotherapy.

Career prospects:

The Master's program in Physiotherapy provides employment opportunities for graduates in clinical, administrative and research fields, including:

- Specialists in clinical departments at hospitals, rehabilitation centers and private clinics in various areas of physiotherapy, including orthopedic, neurological, cardiopulmonary, pediatric and geriatric.
- Specialists in applied research and project writing in physiotherapy.
- Instructors of continuing education programs in physiotherapy.
- Academic staff members at both bachelor and diploma levels in physiotherapy.
- Specialists of quality assurance in physiotherapy at the department of licensing and legislation at the Ministry of Health and other related institutions.

Acquired Skills

Upon completion of the program graduation requirements, the graduate will be able to acquire and practice the following skills and learning outcomes:

- Communication skills and work in an atmosphere of interaction and cooperation with patients and specialists, whether in the field of private independent career or work within a team.
- Effective analysis of the patient's physical, psychological and social functional problems, consistent with a formulation and implementation of a treatment plan according to the patient's needs.
- Apply methods and strategies of contemporary research in the field of health and physiotherapy.
- Expanding the updated knowledge of advanced techniques in physiotherapy and the optimal use of modern technology at the professional and research levels.
- Management of multidisciplinary programs for physiotherapy and rehabilitation.
- Propose innovative solutions based on evidence-based practice in physiotherapy.
- Professional commitment to ethical practice.
- Contribution to academic, scientific and professional development at both national and international levels.

Academic plan (Master in Physiotherapy-MPT)

- **Academic Curriculum:**

Students must complete 36 credit hours for a master's degree in physiotherapy. Three study tracks are offered for MPT students: Thesis Track "TT", Action Research Track "ART", and Comprehensive Track "CT".

The MPT curriculum consists of four categories of academic requirements:

1. **Required courses**: 15 credits for all tracks ("TT", "ART", and "CT").
2. **Specialty courses**: 9 credits for "TT", "ART", and for "CT".
3. **Research and comprehensive required courses**: 6 credits for Thesis Track "TT", Action Research Track "ART", and 2 credits for Comprehensive Track "CT" students.
4. **Elective courses**: 6 credits for thesis and action research tracks, and 10 credits for the comprehensive track.

1- Required courses (15 credits): During the four semesters of the MPT program, all students must complete 15 credits of required courses as illustrated in (Table 1).

Table 1. Required Courses (15 credits for Thesis Track "TT" , Action Research Track "ART", and Comprehensive Track "CT"

Course #	Course Name	Credits for all tracks			Prerequisite
		TT	ART	CT	
8200601	Management and leadership in Physiotherapy	2	2	2	
8200602	Research Methods	3	3	3	
8200611	Biostatistics	3	3	3	8200602
8200612	Evidence Based Physiotherapy	2	2	2	
8200680	Advanced Clinical Physiotherapy 1	2	2	2	
8200681	Advanced Clinical Physiotherapy 2	3	3	3	
Total		**15**	**15**	**15**	

2- **Specialty Courses:** (9 credits for Thesis Track "TT", Action Research Track "ART" and comprehensive track). By completing a specialty combined set of at least **9 credit hours** of the following courses in (Table 2). The student will be able to tailor his/her study plan in a specific area of specialty including cardiopulmonary, orthopedics, neurology, pediatrics and geriatrics.

Table 2. Specialty Courses

Course #	Course Name	Credits	Prerequisite
8200630	Advanced Cardiopulmonary	3	
8200640	Advanced Orthopedics	3	
8200650	Advanced Adult Neuropathophysiology	3	
8200660	Advanced Neuropediatric	3	
8200631	Advanced Cardiopulmonary Physiotherapy	3	8200630
8200641	Advanced Orthopedic Physiotherapy	3	8200640
8200651	Advanced Neurological Physiotherapy	3	8200650
8200661	Advanced Pediatric Rehabilitation	3	8200660
8200671	Geriatric Rehabilitation	3	

3- **Research and comprehensive required courses**: 6 credits for Thesis Track "TT", Action Research Track "ART", and 2 credits for Comprehensive Track "CT" students.

In the thesis track and action research track, the students are required to pass thesis I and thesis II (6 credit hours). In the action research track, the students are required to submit the projects of action research I and action research II (6 credit hours). In the comprehensive track, students are required to pass a graduation research project of 2 credit hours and successfully passing the comprehensive exam (Table 3).

Table 3. Thesis or Comprehensive required courses "6 credits for TT and ART and 2 credits for CT"

Course #	Course Name	Credits for all tracks		
		TT	ART	CT
8200777	Comprehensive Exam "for CT only"			0
8200691	Research Project "for CT only"			2
8200692	Action Research 1 "for ART only"		3	
8200693	Action Research 2 "for ART only"		3	
8200694	Thesis 1 "for TT only"	3		
8200694	Thesis 2 "for TT only"	3		
	Total	**6**	**6**	**2**

4- Elective courses:

Elective courses of 6 credits for thesis and action research tracks, and 10 credits for comprehensive track students will be studied during the four semesters of the MPT program. Elective courses are illustrated in (Table 4).

Table 4. Program Elective Courses "6 credits for TT & for ART, 10 credits for CT"

Course #	Course Name	Credits
8200605	Clinical Exercise physiology	2
8200606	Special Topics in Physiotherapy	2
8200643	Motor and Gait analysis	2
8200652	Pain Management	2

8200653	Motor Control and Learning	2
8200654	Ergonomics	2
8200685	Advanced Academic writing	2
8200686	Marketing in Health Care	2
Total		**16**

- **Graduation requirements:**

- Successfully pass all the courses required by the program with grades and GPA according to the regulations of Al-Quds University (AQU) Graduate Studies.
- Successfully finish the M.Sc. thesis, action research reports or the comprehensive exam.
- Comply with the time-table as indicated in the regulations of AQU Graduate Studies.
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Advising Plan (Master in Physiotherapy)

First Year: First Semester				
Course #	**Course Name**	**Credits for all tracks**		
		TT	**ART**	**CT**
8200601	Management and leadership in Physiotherapy	2	2	2
8200602	Research Methods	3	3	3
	Elective course 1	2	2	2
	Elective course 2	2	2	2
Total		**9**	**9**	**9**
First Year: Second Semester				
8200611	Biostatistics	3	3	3
8200612	Evidence Based Physiotherapy	2	2	2
	Specialty course	3	3	3
	Specialty course	3	3	3
Total		**11**	**11**	**11**
Second Year: First Semester				
	Specialty course	3	3	3

8200680	Advanced Clinical Physiotherapy 1	2	2	2
8200692	Action Research 1 "for ART only"		3	
8200694	Thesis 1 "for TT only"	3		
	Elective course 3	2	2	2
Total		10	10	7
Second Year: Second Semester				
8200681	Advanced Clinical Physiotherapy 2	3	3	3
8200693	Action Research 2 "for ART only"		3	
8200694	Thesis 2 "for TT only"	3		
	Elective course 4			2
	Elective course 5			2
8200691	PT Research Project			2
Total		6	6	9

- Course Description

Management and Leadership in Physiotherapy (8200601) 2 credit hours

The aim of this course is to equip the postgraduate students with tools and skills needed to facilitate their expected managerial tasks and leadership abilities, within the capacity of physiotherapy department or rehabilitation institution management. As potential managers, this course will help the students to deal with public, stakeholders, insurance companies, and is expected to improve their skills in staff recruitment, staff motivation, evaluation, planning, and monitoring of institutional goals achievement. This course will also tackle important issues like negotiation, and marketing skills within the health care system.

Research Methods (8200602) 3 credit hours

This course will provide the students with the required knowledge to conduct applied scientific research in physiotherapy. Both quantitative and qualitative methods of research will be covered. Topics will include research methodology, types, research ethics and rationale, strengths and weaknesses of various research designs, validity and reliability, hypothesis formulation and testing, the implementation phase of the research process, data collection methods, proposal development phases, critical review of the literature, research

analysis, and research critique. Applied laboratory sessions on EndNote software as a citation manager system, research presentation, and publishing procedures will be also covered in this course.

Biostatistics (8200611) 3 credit hours

Prerequisite (Research Methods 8200602) 3 credit hours

This course focuses on the concepts of statistical analysis in both parametric and nonparametric descriptive and inferential statistics. Topics to be covered will include different central tendency and dispersion measures, t-tests, one and two-tailed analyses of variance ANOVA, MANOVA, repeated measurements ANOVA, logistic regression, Chi-Square, univariate correlation and regression, multiple regression. Methods of statistical results presentation and interpretation will also be addressed in this course. Statistical software will be used to complement hand calculation.

Evidence-Based Physiotherapy (8200612) 2 credit hours

This course builds on fundamental clinical experience using clinical reasoning models, exploring the actions and evolving thoughts used by a clinician to arrive at a diagnostic and management decision, and the subsequent application of that decision. Students are given the opportunity to use clinical reasoning models to study an area of interest. In addition, this course explores the principles of systematic reviews relevant to physiotherapy practice. Emphasis will be placed on the legal, ethical, socio-cultural, economic implications of research in health care. The philosophy of evidence-based practice is examined in detail with examples from sources such as the physiotherapy evidence database (PEDRO) and Cochrane Collaboration databases.

Advanced Clinical Physiotherapy 1 (8200680) 2 credit hours

This course is designed to allow the students to apply the postgraduate skills gained in the specialty courses, under the supervision of specialized mentors, and will also give the students the opportunity to demonstrate how their new skills, reflection, critical thinking, and evidence-based practice have been developed and applied to their clinical practice in the assessment, management, and follow up of patients treated in the specialty

fieldwork. This clinical course consists of 160 supervised contact hours, and it is submitted at the 3rd semester of the program and after the students have finished with success their two previously studied specialty courses.

Advanced Clinical Physiotherapy 2 (8200681) 3 credit hours

Prerequisite: Advanced Clinical Physiotherapy 1 (8200680) 2 credit hours

The scope of this course is to complement the application of the advanced mentored practical skills gained all the three specialty courses, this course will also be a tailored to provide a venue and time-space for data collection in both thesis and action research track. This course consists of 240 supervised contact hours in the specialty field.

Advanced Cardiopulmonary (8200630) 3credit hours

This course focuses on cardiopulmonary pathologies in terms of anatomy, epidemiology, advanced techniques of medical assessments, including recognizing relevant imaging variations related to different cardiopulmonary dysfunctions, ECG patterns in main cardiac dysfunctions, laboratory tests used in differential diagnoses of different cardiopulmonary diseases. Genetic predisposition and related genetic mutations associated with various congenital cardiopulmonary pathologies, in addition to the update in the surgical and medical management of cardiopulmonary pathologies, in association with the expected role of physiotherapy and rehabilitation from the point of view of medical specialists. The course will cover major obstructive, restrictive, vascular, congenital, occupational, and infectious types of pulmonary diseases, in addition to arterial, muscular, valves related, functional, and electrical dysfunction of the cardiovascular system. Cardio-pulmonary resuscitation (CPR) will be mastered in this course, in addition, to converge of main principles of Respiratory Pharmacology.

Advanced Cardiopulmonary Physiotherapy (8200631) 3 credits

*Prerequisite (Advanced Cardiopulmonary 820063*0*)* 3 credit hours

In this course, postgraduate students will study in depth the biomechanics of breathing, together with the implications of findings of medical respiratory examinations on physiotherapy management, including lung functional tests through volumetric lung testing, analysis of blood gases and X-ray and other imaging's findings implications on physiotherapy assessment and management of a cardiopulmonary patient. Students will

discuss how pulmonary disease affects exercise tolerance and will be practicing designing an effective rehabilitation program for patients with primary pulmonary dysfunctions. Physiotherapeutic techniques like Oxygen therapy, respiratory physiotherapy techniques to improve lung volume; techniques to reduce the work of breathing and techniques to clear secretions will be practiced and demonstrated during this course, within the process of management of restrictive, obstructive, congenital, infectious, occupational and postsurgical respiratory patients. Also, in this course, students will be discussing the findings implication of main medical evaluation cardiac function test, like ECG, exercise ECG testing, Holter monitoring, Echocardiogram, on rehabilitation decisions of a cardiac patient under rehabilitation. Intensive care unit – Concept and set-up, equipment, artificial airways, and ventilators will be discussed in relation to the clinical physiotherapy intervention in the ICU setting. Advanced techniques of physiotherapy evaluation using outcome measures will be practiced, including mechanical efficiency using polar watches, and heart rate will be practiced, in addition to main physiotherapy protocols in the management of patients after cardiac surgeries, and pathologies, including functional, electrical, valve related, arterial, and muscular dysfunctions of cardiac patients. Exercise Prescription and health promotion of fitness for special populations at risk like in, DM, Obesity, IHD, COPD, HTN will be simulated. Physiotherapy modalities used for wound healing will be presented. Pre- and post-operative Cardiac rehabilitation protocols will be practiced. Exercise testing, planning, and prescription, including aerobic and anaerobic exercise training, Physiotherapy management of peripheral vascular disorders will be experienced. The course is based on lecturing seminar format, laboratory training sessions with actual patient cases and peer group interaction will be used to develop evaluation, treatment and problem-solving skills.

Advanced Orthopedics (8200640) 3 credit hours

This course includes an intensive description of the common problems treated in orthopedic medicine and surgery, and the relationship of the basic science of the musculoskeletal tissues to the presentation of these problems, their diagnosis, non-operative and operative management. This course will cover the medical, pharmacological, and surgical intervention of a variety of orthopedic and musculoskeletal problems and pathologies, including trauma, fractures, and congenital deformities, osteoarthritis and rheumatoid joint problems, adult reconstruction surgeries, origin insertion transfer, and meniscus surgeries. Case-based presentations and the development of an understanding of orthopedic conditions, organization of data, assessment, and analysis of data and plan of management, will be the scope of this course.

Advanced Orthopedic Physiotherapy (8200641) 3 credit hours

Prerequisite: Orthopedics (8200640) 3 credit hours.

Management and treatment of orthopedic complains, including kinsio taping, trigger points release, Mulligan and Maitland mobilization, dry needling, and interactive behavioral modification of pain in musculoskeletal complications. In terms of body regions, this course also aims to cover the pathologies, biomechanics, clinical reasoning, and evidence-based practice of management of upper and lower quadrants regions (cervical, thoracic, shoulder, elbow, and wrist joints; lumbar, sacroiliac, hip, knee, and ankle joints). The course is based on lecturing seminar format, laboratory training sessions with actual patient cases and peer group interaction will be used to develop evaluation, treatment and problem-solving skills.

Advanced Adult Neuropathophysiology (8200650) 3 credit hours

This course will discuss the medical, theoretical and practical foundations of clinical practice for specialization in neurology. Principles of neurologic differential diagnosis, mechanisms of neural recovery, and rehabilitation of focal neurologic disorders will be covered. The course is designed to expand knowledge of neuromuscular, vestibular pathologies, improve clinical reasoning in differential diagnosis and present innovative intervention with emphasis on evaluation and management of patients in the areas of stroke, Parkinson, vestibular dysfunction, traumatic brain injury, spinal cord injury and others. The course will use a seminar format to introduce and discuss the course topic areas for each session. In addition, actual patient cases will be used in a case-based learning approach to develop skills in differential diagnosis and intervention that is based upon the latest research evidence.

Advanced Neurological Physiotherapy (8200651) 3 credit hours

*Prerequisite: Advanced Adult Neuropathophysiology (8200650)*3 credit hours.

The course will provide the student with the knowledge to complete a comprehensive neurological and functional examination of patients with multifaceted of various system neurological dysfunction. Where the student will gain advanced knowledge and skills in physiotherapy intervention neurological conditions. Advanced clinical interventions such as vestibular rehabilitation, proprioceptive neuromuscular facilitation (PNF) and Bobath techniques will be addressed. To be directed towards neurological rehabilitation and improving quality of life for patients after neurological disease or injury. The course is based on lecturing seminar format,

laboratory training sessions with actual patient cases and peer group interaction will be used to develop evaluation, treatment and problem-solving skills.

Advanced Neuropediatric (8200660) 3 credit hours

In this course, students will be discussing neurodevelopmental anatomy and physiology of the neural system and main medical assessment of a normal baby will be presented within the scope of screening and detection of a newborn baby. Main topics of neuropediatric pathologies and dysfunctions will be discussed in terms of assessment; main expected findings, medical management, genetic counseling possibilities, and the expected role of physiotherapy and rehabilitation from a medical point of view. Pathologies to be covered in this course will include, mental development and retardation, motor development pathologies, reflex maturation, developmental assessment and diagnosis, developmental screening , genetic basis of pediatric disorders, embryology & genetic counseling, maturational and pathophysiological recovery process in the CNS, medical management of spasticity, Cerebral Palsy, different types of muscular dystrophy, Epilepsy, Neuromuscular diseases, Nervous system infections and viral paralytic diseases in a addition to Central Nervous system degenerative disorders.

Advanced Pediatric Physiotherapy(8200661) 3 credit hours

*Prerequisite (Advanced Neuropediatric 8200660)*3 credit hours

Students in this course will master the assessment of normal child, in different developmental and chronological ages based on motor and mental developmental milestones and will be able to master uses of different relevant outcome measures in assessment and documentation of main Neuropediatric conditions, including GMFM, GMFCS, movement assessment battery for children (ABC), functional walking test (FWT), and functional mobility scale (FMS). Neonatal Behavioral assessment scale (NBAS), Pediatric Quality of Life Inventory (PEDS QL), and pediatric evaluation of disability inventory (PEDI). The proper use and prescription of assistive and supporting devices, splints, and walking aids will be discussed and debated, in the scope of management of different pediatric gait dysfunctions. Postgraduate techniques of pediatric interventions and rehabilitation strategies will be simulated and practiced, including but not limited to techniques in physiotherapy management of spasticity, Bobath neurodevelopmental rehabilitation, functional motor learning, vojta rehabilitation techniques, and Sensory motor integration (SMI). Discussion on the benefits, pros and cons and application of the above-mentioned rehabilitation strategies will be taking place, within the

process of mastering management and rehabilitation of children suffering from cerebral palsy, genetic and other congenital disorders, muscular dystrophy, spinal muscular atrophy, traumatic brain injuries, developmental delay, and other tone associated disorders. The course is based on lecturing seminar format, laboratory training sessions with actual patient cases and peer group interaction will be used to develop evaluation, treatment and problem-solving skills.

Geriatric Rehabilitation (8200671) 3 credit hours

This course is designed to enhance the examination and the intervention skills of graduate physiotherapists in the field of geriatrics; geriatric population includes the well elderly, impaired elderly, and the frail and institutionalized elderly. Specific emphasis will be given to the normal process of aging, preventive care and management of pathological age-related changes. The course will deliberate evidence-based physiotherapy examinations and intervention techniques that are utilized in the field of geriatric rehabilitation. Students will develop their skills through presenting case studies, assignments and group discussion. This will be based on the students' exploration of the elderly persons' conditions, and the role of the physiotherapist in geriatric rehabilitation in Palestine including preventive and interventional measures.

Comprehensive Exam (8200777) 0 credit hours

This exam will be for the comprehensive-track students, which aims to test and evaluate the knowledge and skills that the student has gained from the different course studied in the program.

Research Project (8200691) 2 credit hours

The student in this course is required to document his clinical performance related selected patients in the form of presentable project that should include critical review of literature, baseline and follow up assessment. The student should demonstrate the use of the evidence- based skills that he has learned in the advanced postgraduate courses.

Action Research 1(8200692) 3 credit hours

Action research track students are required to write a real action research report in order to qualify for the MPT degree. The student will work with one or two academic advisors from MPT staff members of the physiotherapy department. In this course, the student will select a given action research problem and develop the action

research proposal and conducts the applied procedures to solve that problem. Applied data collection, statement of the action research report, presentation and defense of that report, are the major elements of student assessment within this course. This course should be completed before the end of the first semester of the second year. Any prolongation of the deadline for submission of the complete action research report must be approved by the MPT committee based on the regulations of the graduate studies deanship at Al-Quds University.

Action Research 2(8200693) 3 credit hours

The students should get use from the gained experience from action research I and select a second action research problem from his/her field work and practically conduct the approved proposal of action research to solve that problem. Applied data collection, statement of the action research report, presentation and defense of that report, are the major elements of student assessment within this course. This course should be completed before the end of the second semester of the second year. Any prolongation of the deadline for submission of the complete action research report must be approved by the MPT committee based on the regulations of the graduate studies deanship at Al-Quds University.

Thesis 1 (8200694) 3 credit hours

Thesis-track students are required to write a thesis in order to qualify for the MPT degree. The student will work with one or two academic advisors from MPT staff members of the Physiotherapy department. In this course, the student will develop the pre-selected research proposal draft, which should be approved by the advisor and the MPT committee.

Thesis 2 (8200694) 3 credit hours

The students should conduct the field research for data collection, complete the statement of the research report (statistical analysis of study data, results presentation and discussion, and the final writing of the thesis) before the end of the second semester of the second year. Any prolongation of the deadline for submission of the complete thesis must be approved by the MPT committee based on the regulations of the graduate studies deanship at Al-Quds University¡

Elective Courses:

Clinical Exercise Physiology (8200605) 2 credit hours

This course focuses on the physiological effect of physical effort or exercise. Subjects to be covered in the course will include homeostatic response to different levels of acute "short-term" exercise, and physiological mechanisms of chronic adaptation with long-term physical training, principles of physical training load and programming, components of fitness, measuring and developing fitness, underlying physiology of fitness components. In addition to the clinical use of the common exercise physiology parameters as outcome measures in the rehabilitation of neuromuscular, musculoskeletal and cardio-respiratory conditions.

Special Topics in Physiotherapy (8200606) 2 credit hours

This course contributes to expand student's understanding related to special topics in physiotherapy such as cancer, burn, obstetrical and gynecological physiotherapy. The course is based on lecturing seminar format and will be guided by instructors from the University as well as by guest lecturers according to different areas of specialties.

Motor and Gait Analysis (8200643) 2 credit hours

This course will focus on the anatomical and mechanical "Kinematic and kinetic" aspects of motion analysis in normal and pathological conditions. Topics to be covered will include: biomechanics of body tissues, various types of mechanical loads, physical and sports injuries, quantitative measures of motion and balance. Emphasis will be given to practical acquaintance of motion measuring instrumentations, by using the recent biomechanical technologies and computerization in the diagnostic, assessment and therapeutic applications of rehabilitation.

Pain Management (8200652) 2 credit hours

The course will review the theoretical models of pain, types of pain; acute, recurrent and chronic pain. The course will focus on the multidimensional experience of pain including physiological basis of pain, sensory and affective dimensions and understanding the impact of mood state, anxiety, depression and wellbeing on pain behavior. Cognitive, behavioral and sociocultural-environmental dimensions of pain will be covered in terms of coping skills and strategies, interpersonal interactions, physical activity, and effect of persistent pain on work

home responsibilities and quality of life. Emphasis will be placed on the assessment and outcome measures of pain, issues of utility, reliability, and validity will be highlighted. This course is designed with the intent that the physiotherapy student will acquire knowledge and skills to be able to manage pain more effectively through different therapeutic modalities and to be familiar with the roles, responsibilities, and approaches of the interdisciplinary collaboration in the area of pain management.

Motor Control and Learning (8200653) 2 credit hours

This course focuses on concepts of motor control and learning. Topics to be covered include sensorimotor mechanisms involved with normal and abnormal neuromuscular systems' function, dynamics of motor skills acquisition, motor control, motor development, and skilled motor performance. During the course, the student will develop knowledge of human developmental milestones, progression, and regression across the lifespan, qualitative functional changes versus quantitative structural changes related to maturation and growth. The course is intended for the student to construct a mastery of the currently available tools and measures for assessing motor skills in the clinical settings and its applications in the physiotherapy interventions with different pathological conditions such as stroke and traumatic brain injury.

Ergonomics (8200654) 2 credit hours

This course examines and analyzes the effects of the workplace on employees and adaptations of the work environment to suit the individual. The focus is on the interaction of work and people, physiological and environmental stresses with the primary intent to establish ways to reduce injuries, accidents, and fatigue, and to improve the human performance of work. Subjects to be covered in this course include an introduction to ergonomics as a health-related science, causes, prevention, diagnosis, stages, and treatment of the common work-related cumulative trauma. Work place and risk factors analysis and the anthropomorphic characteristics of the worker, risk factors assessment for the common ergonomic musculoskeletal disorders, and the safety of the work environment will also be studied. Health professions and office work ergonomics will be discussed as models for study in this course.

Advanced Academic Writing (8200685) 2 credit hours

This course is designed for students who have started their research project and are in the process of writing a manuscript. The course is based on lectures, group work, peer review of other student's manuscript texts, as well as own work with figures, tables, and manuscript writing. By completing the course, post-graduate students will be able to recognize the structure of a scientific article, get insight into the process of article publication and peer review, and write an initial draft of an acceptable scientifically original manuscript based on their own original results.

Marketing in Health Care (8200686) 2 credit hours

The aim of this course is to introduce students to the basic principles of marketing. Then the course l links marketing theories to strategic and operational management decisions in health care. The role of marketing in product selection, product process design, market segmentation, the marketing mix and market power in health care including the competitive markets.