



# คณะเทคนิคการแพทย์ มหาวิทยาลัยขอนแก่น Faculty of Associated Medical Sciences KKU

## Doctor of Philosophy Programs in Human Movement Science (International Program)

### Faculty of Associated Medical Sciences

### Khon Kaen University

#### 1. Course Management:

- 3 academic years for program 1.1
- 5 academic years for program 1.2

#### 2. Program Philosophy:

The Doctor of Philosophy Program in Human Movement Sciences International Program aims to create analytical thinkers and researchers who can independently pioneer and seek new knowledge and create original dissertations that apply and develop bodies of knowledge. Besides, the program emphasizes producing a Doctor of Philosophy with a good foundation in research methodology and high-quality academic experience, especially issues under research questions in human movement sciences. Furthermore, these Doctor of Philosophy should be able to sustainably create, link, and integrate the science of their expertise with other sciences.

#### 3. Qualifications:

- Qualification of applicants: Bachelor or Master of Science in related health sciences such as Physiotherapy, Occupational Therapy, Physical Education, Sports & Exercise Science, Prosthetics and Orthotics, Nursing, Applied Thai Traditional Medicine, Anatomy, Medical physiology, Ergonomics, Public health, etc.
- Applicants are subjects other than health sciences. Applicants must register for elective courses without credit or through a short training course workshop related to human movement science, research methodology, biostatistics, and other necessary relevant to the dissertation before the qualifying examination

Plan 1.1: Master's degree with  $GPA \geq 3.50$

Plan 1.2: Bachelor's degree with  $GPA \geq 3.50$  and have research experience at least one as the following lists

- Oral research presentation
- a peered-review publication as either first or corresponding author
- has a research framework that can be developed into a doctoral thesis



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### 4. Program Structure & Elective Courses:

- Plan 1.1: AM 317 996 Dissertation 48 credits
- Plan 1.2: AM 317 997 Dissertation 72 credits
- Students can register for other relevant courses under the guidance of a doctoral advisor.

Course Code	Course Title	Credits
<b>Core Courses</b>		
AM 317 996	Dissertation	48 credits
AM 317 997	Dissertation	72 credits
<b>For Example, Elective Courses</b>		
AM 217 124	Advance Physical Therapy Management in Musculoskeletal Disorder.	3 credits
AM 217 223	Physical Therapy in Neurorehabilitation	3 credits
AM 217 421	Early Intervention and Advance Neuroprediatric Physical Therapy	3 credits
AM 217 511	Research Methodology Biostatistics and Evidence-based Practice for Physical Therapy	4 credits
AM 217 512	Integrative Human Movement Science	3 credits
AM 217 526	Therapeutic Thai Massage for Musculoskeletal Disorder.	3 credits

### 5. Course descriptions

#### **AM 317 996 Dissertation 48 credits**

Conducting advanced scientific research, writing the research results in the form of a thesis, for students who graduated with a Master's degree, with the ability to initiate and effectively conduct research in order to identify problems and culminate a new body of knowledge for developing and modeling of aspects of human movement, ethical issue in research and writing an original article, and at least one article on the research study must be published or accepted in an internationally recognized journal.

#### **AM 317 997 Dissertation 72 credits**

Conducting scientific research, writing the research results in the form of a thesis, for students who graduated with a Bachelor's degree, with the ability to initiate and effectively conduct research in order to identify problems and culminate a new body of knowledge for developing



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and modeling of aspects of human movement, ethical issue in research and writing an original article. In addition, at least one article on the research study must be published or accepted in an internationally recognized journal.

### **AM 217 124 Advance Physical Therapy Management in Musculoskeletal Disorder.**

Advanced management in muscle, bone, and joint: grade of movement, selection of advanced technique, advanced management in regional disorders including the cervical spine, thoracic spine, lumbar spine, pelvic and sacral, temporomandibular joint, shoulder, elbow, wrist, hand, hip. Knee, ankle and foot, clinical reasoning of upper quadrant management, clinical reasoning of lower quadrant management.

### **AM 217 223 Physical Therapy in Neurorehabilitation**

Application of ICF in neurological PT clinical reasoning, intervention models for physical therapy, motor relearning program, problems in patients with neurological conditions and contemporary approaches, upper limb, lower limb and trunk control training strategies, functional training for bed and upright activities, balance, abnormal gait and training strategies, physical therapy treatments in traumatic brain injury and Parkinson disease, physical therapy assessments for patients with spinal cord injury, medical complications in stroke and spinal cord injury patients and managements, training strategies for bed, wheelchair, and upright activities in patients with complete spinal cord injury patients, screening and follow-up tools for individuals with movement impairments, and case study

### **AM 217 421 Early Intervention and Advance Neuropediatric Physical Therapy**

Principle and importance of early intervention, physical examination, problem analysis, plan and treatment, pediatric physical therapy in children with the neurological condition, treatment evaluation, updated research, literature review, case study and clinical implication.

### **AM 217 511 Research Methodology Biostatistics and Evidence-based Practice for Physical Therapy**

Research methodology in physical therapy: meaning and steps in conducting research, formulation of research questions, research objective and hypotheses, qualitative and quantitative study designs, sampling and randomized allocation, code of conduct and research



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ethics; Biostatistics in physical therapy: an overview of biostatistics, descriptive statistics, inferential statistics, analysis of continuous outcome, analysis of categorical outcome, non-parametric statistics, sample size estimation, statistics for physical therapy measurement tools and statistical program for data analysis); and Evidence-based Practice in Physical Therapy: definition, introduction, and importance of evidence-based physical therapy, the process of evidence-base physical therapy such as the clinical or related question, systematic search, critical appraisal, conclusion, and application for improving physical therapy practice

### **AM 217 512 Integrative Human Movement Science**

Theory of learning and motor control, Application of the theory of learning and motor control in promoting and restoring motor abilities. Neurophysiology of motor control and movement learning Advanced muscular physiology and muscle training Advanced physiology of exercise on the nervous system, The immune system, the respiratory system, the cardiovascular system. Factors affecting human performance and enhancing human performance Application of human movement science for the improvement of human performance in children, athletes and the elderly

### **AM 217 526 Therapeutic Thai Massage for Musculoskeletal Disorder.**

Theory and history of therapeutic Thai massage, interpretation in the view of modern medicine, principles of practice, physiological effects, indications, contra-indications, therapeutic techniques, and screening for individuals with musculoskeletal disorders including neck, back, abdominal, pelvis, extremities, stress, anxiety, and depression, and case studies

#### **Contact Person:**

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