Admission criteria Master’s programme Musculoskeletal Physiotherapy Sciences

The student has:

- knowledge of the anatomical nomenclature, knowledge and understanding of the conceptual aspects of the structure and function of muscles, knowledge and understanding of form and function of joints;
  Requirement achieved by students with Ba Physiotherapy, Ba Human Kinetic Technology, Ba Health sciences and Ba Human Movement Sciences

- basic knowledge and understanding of the neurophysiology of brain processes and neuromuscular control concerning membrane potential, ion channels, ion pumps, between neuron communication, spinal cord circuits and motor units, function of different brain structures, movement control;
  Requirement achieved by students with Ba Physiotherapy, Ba Human Kinetic Technology, Ba Health sciences and Ba Human Movement Sciences

- knowledge and understanding of muscle physiology: understanding of the anatomy of skeletal muscle, sarcomere function, twitch, tetanus, length-force, force- and power-velocity, and stimulation frequency-force relations, the size principle of motor unit recruitment, rate coding, EMG, electrical stimulation, fibre type related differences in contractile properties, cross-bridge kinetics, excitation contraction coupling, the basic metabolic changes during exercise (changes in ATP and PCr, glycolysis, oxidative phosphorylation, pH);
  Requirement achieved by students with Ba Physiotherapy, Ba Human Kinetic Technology and Ba Human Movement Sciences
  Requirements not achieved by students with Ba Health sciences

- knowledge and understanding of mathematics (differential, integral and vector calculus, matrix calculations);
  Requirement achieved by students with Ba Health sciences and Ba Human Movement Sciences
  Requirements not achieved by students with Ba Physiotherapy and Ba Human Kinetics

- basic knowledge and understanding of biomechanics (translation, rotation, free body diagrams, kinetic energy, work done by forces and moments, power);
  Requirement achieved by students with Ba Human Movement Sciences
  Requirements not achieved by students with Ba Physiotherapy, Ba Human Kinetics and Ba Health sciences

- basic understanding of and skills in statistics (correlation, regression analysis, Student t tests, ANOVA);
  Requirement achieved by students with Ba Human Movement Sciences
  Requirements not achieved by students with Ba Physiotherapy, Ba Human Kinetics and Ba Health sciences

- understanding of and skills in processing digital signals in MATLAB;
  Requirement achieved by students with Ba Human Movement Sciences
  Requirements not achieved by students with Ba Physiotherapy, Ba Human Kinetics and Ba Health sciences