UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# COURSE SYLLABUS

# Kinesiology

**2324-1-I0201D129-I0201D007M**

## Aims

The course aims to provide students with basic and advanced knowledge of biomechanics and kinesiology of the human body and to promote clinical reasoning.

Specific objectives are:

- teach students: 1) the analysis of the physiological movement of the movement from the point of view of its mechanics; 2) biomechanics and joint kinesiology of the foot, knee, hip, spine (cervical, thoracic and lumbar), shoulder, elbow and hand.

- promote the ability to reason, with respect to clinical signs of physiotherapy kinesiological competence, as an essential contribution to decision-making processes in physiotherapy

## Contents

The physiology of the joints of the locomotor system, application of biomechanical principles to the analysis of human movement. Topics include developmental, anatomical, electromyographical, and physiological elements of kinesiology with regard to individual joints. The content of this course are theoretical prerequisites in order to understand the organization of common functional activities such as gait and transitional movements.

## Detailed program

- general osteoarticular physiology of the spine

- osteoarticular physiology of the pelvic girdle and SI joint

- osteoarticular physiology of the lumbar ,thoracic and cervical spine

- osteoarticular physiology of the upper limbs

- osteoarticular physiology of the lower limbs

- Kinematic and osteokinematic

- joint kinematics

- Principles of biomechanics

- Spine: interaction between muscles and joints

- upper limb: interaction between muscles and joints

- lower limb: interaction between muscles and joints

- Physiology of gait

## Prerequisites

## Teaching form

Lessons in attendance.

## Textbook and teaching resource

- KINESIOLOGY OF THE MUSKULOSKELETAL SYSTEM FOUNDATIONS FOR REHABILITATION NEUMANN D.A. Mosby

- Carol A. Oatis, Kinesiology: The Mechanics and Pathomechanics of Human Movement – Lippincott Williams & Wilkins ISBN: 9780781774222

## Semester

1st semester

## Assessment method

Described in the subject's syllabus

## Office hours

By appointment

## Sustainable Development Goals

GOOD HEALTH AND WELL-BEING