UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Kinesiology 2

2526-1-I0201D129-I0201D187M

Aims

At the end of the course students should know and be able to apply basic principles of biomechanics to the assessment of standing posture and to the analysis of human locomotion.

Contents

Principles of biomechanics and kinesiology applied to the analysis of standing posture and human locomotion.

Detailed program

- Joint movements
- Body balance
- Force of gravity and muscle force
- Upright standing posture
- Human locomotion
- Gait phases
- Spatiotemporal gait parameters
- Movements of the center of mass during walking
- Gait kinematics
- Gait kinetics
- Energy expenditure during walking
- Leg muscle activity during walking
- Measuring walking

Prerequisites

Basic concepts of biomechanics (Introduction to kinesiology 1)

Teaching form

Standard teaching in presence: topics are discussed by the teacher in the classroom
Integrated teaching in presence: students will give presentations to deepen the topics proposed by the teacher.

Textbook and teaching resource

- Neumann, D.A. (2016). Kinesiology of the Musculoskeletal System. Foundations for Rehabilitation. Terza edizione.
- F. Kendall and E. Kendall McCreary. (2005). I muscoli. Funzioni e test con postura e dolore. Quinta edizione.
- Judith Burnfield and Jacquelin Perry. (2010). Gait Analysis : Normal and Pathological Function. Second edition.
- Richards & Whittle Levine. (2012). Whittle's Gait Analysis. 5th Edition.
- Scientific papers.

Semester

First semester

Assessment method

Written test with: (i) open questions to evaluate the level of knowledge of the students about the topics covered in the classes; and (ii) problems with multiple-choice questions to evaluate the students' problem-solving skills on relevant topics.

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY