UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Amputee Rehabilitation

2627-3-I0201D146-I0201D163M

Aims

Knowledge of rehabilitation pathways for restoring function after limb amputation and appropriate prosthetic management.
Knowledge of the principal rehabilitation protocols aimed at functional recovery following the use of external fixation systems and the Ilizarov technique.

Contents

- Morphological and Biomechanical Characteristics of the Residual Limb Following Surgical Amputation
- Major Postoperative Issues and Their Rehabilitation Management
- Maintenance of Tissue Trophism, Prevention of Secondary Complications, and Functional Recovery
- Limb Prostheses: Types, Components, and Prescription Criteria
- Prosthetic Rehabilitation Pathway, Prosthetic Training, and Adaptation

Detailed program

- Morphological and Biomechanical Characteristics of the Residual Limb Following Surgical Amputation
  Analysis of the anatomical, tissue, and biomechanical characteristics of the residual limb, with particular

emphasis on load distribution, residual joint mobility, muscle function, and their implications for functional recovery and prosthetic fitting.

- Major Postoperative Issues and Their Rehabilitation Management
  Identification and management of early and late postoperative complications, including residual and phantom limb pain, edema, scar-related alterations, musculotendinous contractures, joint impairments, and skin conditions that may interfere with the rehabilitation process.
- Maintenance of Tissue Trophism, Prevention of Secondary Complications, and Functional Recovery
  Rehabilitation strategies aimed at preserving muscular and cardiovascular integrity, preventing deformities, contractures, overuse syndromes, and other secondary complications, while enhancing motor performance and independence in activities of daily living.
- Limb Prostheses: Types, Components, and Prescription Criteria
  Overview of the main prosthetic solutions, ranging from conventional prostheses to microprocessor-controlled and robotic devices, with a focus on prosthetic components, clinical indications, and selection criteria based on patient characteristics, functional goals, and activity level.
- Prosthetic Rehabilitation Pathway, Prosthetic Training, and Adaptation
  Principles and stages of the prosthetic rehabilitation process, from initial fitting to final customization of the prosthetic device. Training strategies for prosthesis use, recovery of gait and functional abilities, outcome monitoring, and optimization of patient autonomy and participation. Clinical case examples will be used to illustrate key concepts and rehabilitation approaches.

Prerequisites

Understanding of musculoskeletal and orthopedic factors influencing gait physiology and human locomotion.

Teaching form

mixed version between didactic teaching (frontal lessons) and interactive teaching (discussion in small groups on observation of the gait)

Textbook and teaching resource

Handouts

Semester

second

Assessment method

Exam in attendance

Multiple choice test comprising 5 questions with only one correct answer

Open questions

Oral exam according to the professor

Office hours

On appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING