



Syllabus

MODULE 1: Characteristics of the musculoskeletal system

Unit 1: Movement from the central nervous system

Unit 2: Skeletal Muscle Functionality

MODULE 2: Muscle actions and their connection to sports

Unit 1: Types of Muscle Action

Unit 2: Interrelation of muscle actions in movement and maintaining a position

MODULE 3: Systemic changes in detraining and immobilization

Unit 1: Detraining in relation to skeletal muscle

Unit 2: Muscular hypertrophy

MODULE 4: Evaluation of muscle properties in relation to sports

Unit 1: Surface electromyography

Unit 2: Tensiomyography

→ Objectives

By establishing objectives, we give ourselves a clear idea of what we want to achieve once the teaching and learning process of this course has finished. But our aims are even more specific: we also want to establish what you will need to accomplish in order for this new knowledge to contribute to your educational goals.

To achieve these objectives, you must complete the entire process laid out in the different stages of the course.

Thus, if you work in the way suggested, you will be well-positioned to meet the following objectives:

General objective

- Develop knowledge about the neuromuscular bases of strength training and the influence on the functionality and structure of the training and detraining muscle

Specific objectives

- Learn the fundamental concepts of the intervention of central nervous system in motion, based on the characteristics of the musculoskeletal system.
- Acquire knowledge about the adaptations to the training depending on the different muscular actions and their relation with the performance.
- Learn to identify the consequences of detraining, both at the systemic and functional levels.
- Learn how to interpret and apply mechanical muscle evaluation techniques during the training and rehabilitation process.

→ Skills

The skills we hope you will develop throughout this course are:

General skills

- Group and collaborative work: the ability to work with colleagues in order to accomplish shared goals and to achieve the synergy typical of a high performance group.
- The capacity of analysis/reflection: the capacity to methodically examine the different aspects of a certain reality or situation and to carry out an assessment of that situation.
- Creativity and innovative, knowledge-based solutions: the capacity to find alternative solutions to existing problems based on formal knowledge.

Specific skills

- Develop the ability to intervene in the training and rehabilitation process, from the knowledge of the skeletal muscular system and its relation to performance.

→ Bibliography

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