UCAM
UNIVERSIDAD
CATÓLICA DE MURCIA

Guía Docente 2018/2019

Program Design as related to Strength and Conditioning

Planificación y Diseño de Programas de Fuerza y Acondicionamiento Físico

Master's in High Performance Sport: Strength and Conditioning

Mode: Semi-presencial

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Program Design as related to Strength and Conditioning

Module: **VI**.

Subject matter: **Program Design as related to Strength and Conditioning.**

Requisite: **Mandatory.**

Nº of credits: **6.**

Academic term: **2nd semester**

Professors: **Dr. Per Aagaard, Dr. Julio Calleja, Dr. Stéphane Dufour, Dr. Robert Csapo, Dr. Brad Schoenfeld, Dr. Mikel Izquierdo and Dr. Anthony Blazevich**

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Coordinator: **Dr. Pedro E. Alcaraz Ramón**

Brief Description

This unit examines the advanced study of resistance training. Specifically, resistance training programs will be discussed with emphasis on hypertrophy, strength and/or power. Topics to be studied include plyometrics, Olympic lifts and their variants, sports-specific resistance training and power optimization and the theory and integration of the annual plan in relation to preparation of elite athletes and teams.

Breve descripción del módulo

Esta asignatura examina el estudio avanzado del entrenamiento de fuerza. De forma específica, se abordarán los programas de entrenamiento de fuerza con un especial énfasis en la hipertrofia, fuerza máxima y potencia. Los temas incluidos serán pliometría, levantamientos olímpicos y sus variantes, entrenamiento específico de fuerza y optimización de la potencia, así como la teoría y la integración del plan anual en relación a la preparación de atletas de élite y equipos deportivos.

Pre-requisites

None.

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Objectives

1. Evaluate the importance of optimal development of various manifestations of strength and fitness for improving performance in both individual and team sports.
2. Learn new ways of improving strength and fitness.
3. To know the physiological, biomechanical, psychological, technical and tactical adaptations of fitness in the developmental process of the individual.
4. To know and apply the most used methods for the development of various manifestations of strength and other qualities related to physical conditioning.

Competencies and Learning Outcomes

MECES1: Students will know how to apply the acquired knowledge and have the capacity to problem solve in new or unfamiliar settings within broader (or multidisciplinary) contexts related to their field of study.

MECES2: Students will be able to integrate knowledge and handle the complexity of formulating judgment based on information that may be incomplete or limited, including reflections on social and ethical responsibilities linked to the application of their knowledge and judgment.

MECES3: Students will know how to communicate their conclusions (and the knowledge and rationale underpinning them) to the public (specialists and non-specialists) in a clear and unambiguous manner.

MECES4: Students will possess learning skills that will allow them to continue studying in a way that is largely self-directed or autonomous.

MECES5: To have and understand knowledge that will provide them the foundation or opportunity to be original in the development and/or application of ideas, often within the research context.

G1: To acquire skills through the teaching-learning process that allows them to continue learning in the field of sports training and conditioning not only with established contacts with Master's Degree professors and professionals but also autonomously.

G2: To acquire and to consolidate the initiative, the entrepreneurial spirit to start up projects related to sports training and conditioning.

T1: Capacity for analysis and synthesis.

T2: Capacity for organization and planning.

T3: Computing knowledge related to the field of study.

T4: Decision making.

T8: Critical thinking.

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T10: Study autonomously.

T11: Adapting to new situations.

T12: Creativity.

T14: Motivation for quality.

T15: Capacity for reflection.

U1: Consider the principles of Christian humanism as core values in the development of professional practice.

U2: Being able to project the acquired knowledge and skills to promote a society based on the values of freedom, justice, equality and pluralism.

S7: Recognize the necessary criteria to develop proper program design and periodization of strength training in the field of performance and conditioning in different stages of maturational development.

E4: To be able to apply the physiological, biomechanical, behavioral and social principles as the research object.

E5: Identify the risks arising from athlete's health status and from inappropriate practice of physical activities in the context of Sports Training and Conditioning.

E7: Be able to design programs for injury prevention or for promotion of physical activity practice in today's society.

E9: To identify different methods for evaluating both performance and health in the field of Performance and Conditioning.

E11: Realizar test para medir la fuerza, resistencia, flexibilidad y equilibrio en personas mayores en función de su historial médico. Perform tests that measure strength, endurance, flexibility and balance in the elderly based on their medical history.

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Methodology

Methodology	Hours	Work hours Required attendance	Work hours no attendance
Theoretical exposition	15	30 hours (20 %)	
Discussion groups, seminars	6		
Evaluation	3		
Tutorial	6		
Personal study	60		120 hours (80 %)
Preparation of work and exposition	36		
Analysis of scientific articles	12		
Literature search	12		
TOTAL	150	30	120

Syllabus

Theoretical Teaching Program

Topic 1. New research tendencies related to training load.

Topic 2. New research tendencies related to program design and periodization of strength training.

Topic 3. New periodization models for training.

Topic 4. Analysis and evaluation of fitness from the perspective of sports performance and overall health.

Topic 5. Equipment and facilities for carrying out a program of strength training and conditioning.

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Topic 6. New research tendencies in the area of strength training and conditioning.

Practical teaching program

Seminar 1. Force and Power Curves.

Seminar 2. Resisted training.

Relationship with other subjects of the curriculum

This material is related to: Scientific Principles of Strength and Conditioning, Exercise Physiology, Biomechanics and Movement Analysis, and Strength Training and Conditioning in the Elderly.

Evaluation System

February/June/September Call:

The evaluation system of the acquisition of learning outcomes of each of the modules' compulsory subjects will be based, in general, with the following grade distribution:

- 20% for written tests, in which evaluate the topic contents presented through theoretical-practical presentation, reading and analysis of documents provided in the module.
- 20% for assessment on workshops, presentations and classroom discussions.
- 60% for assessment of dynamic course work developed in seminars and workshops

The weighting range established in the evaluation system is 5%, and it will be determined based on the type of evaluations given in the module.

The module will have 2 calls for turning in assigned work: a regular call (set at the end of the module) and an extraordinary call (set prior to the first call the final Master's Thesis work).

The scoring system will be as follows, set by R.D. 1.125/2003 of September 5th: Fail: 0-4,9; Pass: 5-6,9; Notable: 7-8,9; Outstanding: 9-10. The honorable mention of Distinction (Matrícula de honor) will be awarded by the professor to the student. Based on the number of students enrolled, only 5% will be eligible for this honorable mention, except for when the enrollment is under 20 in which case only one student will be granted this honor.

The honorable mention of Distinction (Matrícula de honor) will be awarded by the professor to the student. Based on the number of students enrolled, only 5% will be eligible for this honorable

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mention, except for when the enrollment is under 20 in which case only one student will be granted this honor.

To have a passing grade for this module, one must obtain at least half of the total score for each of the instruments of evaluation.

Bibliography

Basic Bibliography

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- Vasconcelos, A. (2000). Planificación y organización del entrenamiento deportivo. Barcelona. Paidotribo.
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Complementary bibliography

- Alcaraz PE, Perez-Gomez, J. Chavarrias M, Blazevich AJ. (2011). Similarity in Adaptations to High-Resistance Circuit vs. Traditional Strength Training in Resistance-Trained Men. J Strength Cond Res.
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- Verchoshansky YV. (1985). Programming and organization of training process [in Russian].Moscow: FiSPublisher.
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- Yakovlev NN. (1955). Survey on sport biochemistry [in Russian]. Moscow: FiS Publisher.
- Zatsiorsky VM. (1995). Science and practice of strength training. Champaign (IL): Human Kinetics.

Related websites

Facultad de Ciencias de la Actividad Física y del Deporte de la UCAM
http://www.ucam.edu/estudios/grados/cafd
CCD - Cultura, Ciencia y Deporte. Revista del Departamento de Ciencias de la Actividad Física y del Deporte.
http://www.ucam.edu/ccd
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http://www.ucam.edu/estudios/postgrados/rendimiento-deportivo-semipresencial

Various resources related to physical activity and sports
http://www.sportsci.org/

http://www.nsca-lift.org/

http://www.cafyd.com/index2.html

Study tips

- Pay attention to what the professor has to share with you at the start of the course. The professor will present the syllabus, bibliography and assignments, methodological approaches to follow, as well as other relevant material of interest that will help the learning process of the subject.
- Attend classes and actively participate in the classroom
- Orient the effort and study on the argumentative reasoning of the course contents.
- Previous reading of documentation provided prior to the start of class.
- Complete and turn-in assignments by scheduled deadlines.
- Stay current on study materials, as new knowledge and new tasks are built upon work presented on previous weeks
- Refer to recommended literature for each topic and do not limit yourself to solely studying off of notes taken in class.
- Utilize office hours, Campus Virtual or email of the professor to help clarify or resolve any questions or doubts you may have regarding the course or course material.
- Attend at least one personal tutoring session to assist in completing work(s) assigned and to become more familiar with the content.

Educational materials

Educational materials used in the course to facilitate the acquisition of skills are:

- PowerPoint presentations that professors' use will serve as an outline or guide of the content presented in class (and not as detailed notes on the subject). Students will make their own notes using all the educational materials described herein.

- Scientific articles, shared through Campus Virtual, will be related to specific content taught in class. Forum and social networks (Twitter) will be used to raise questions that would require some critical thought and to provide practical application for each article.

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- Supporting documents will be shared also through Campus Virtual or will be sought by students through information technology and communication. These documents should also be related to specific content presented in class.

- Conceptual maps and discussion reports for each one of the content topics.

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