



**UCAM**  
UNIVERSIDAD  
CATÓLICA DE MURCIA

# Guía Docente 2018/2019

## Sports Nutrition and Ergogenic Aids

*Nutrición Deportiva y Ayudas Ergogénicas*

Master's in High Performance Sport: Strength and  
Conditioning

Mode: Semi-presencial

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## Sports Nutrition and Ergogenic Aids

Module: **VII**.

Subject matter: **Sports Nutrition and Ergogenic Aids**.

Requisite: **Mandatory**.

Nº of credits: **4.5**.

Academic term: **2nd semester**

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### Brief Description

In this module the contents included are: the classification and function of essential nutrients in the exercise; essential elements of an athlete's diet, ergogenic aids agents; specific supply in different sports: endurance, strength, team, combat; food in special situations.

### Breve descripción del módulo

En esta materia los contenidos que se incluyen son los siguientes, la clasificación y función de los nutrientes esenciales en el ejercicio; elementos esenciales de la dieta del deportista, los agentes de ayudas ergogénicas; alimentación específica en diferentes deportes: resistencia, fuerza, colectivos, combate; alimentación en situaciones especiales.

### Pre-requisites

None.

### Objectives

1. To know the scientific principles in which the following facts are based:
  - Proper nutrition is a prerequisite to allow one to run at a certain exercise intensity.

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- Proper nutrition is a prerequisite to replenish the electrolyte and energy losses generated during exercise.
  - Proper nutrition is the prerequisite to ensure efficient replenishment of depleted energy substrates during exercise
  - Proper nutrition is a prerequisite for enhancing anabolic processes needed for recovery after performing physical exercise
2. To introduce functional foods, ergogenic aids and supplements that, under proper dietary planning, help achieve optimal health status and maximum performance in elite athletes.
  3. To analyze the special nutritional needs that arises in situations involving extreme sports.

## 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.

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**T5:** Teamwork.

**T7:** Skill in interpersonal relationships.

**T8:** Critical thinking.

**T9:** Ethical commitment.

**T10:** Study autonomously.

**T11:** Adapting to new situations.

**T12:** Creativity.

**T14:** Motivation for quality.

**T15:** Capacity for reflection.

**T16:** Problem solving.

**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.

**S1:** Be able to acquire advanced and applied scientific training for Sports Performance and Conditioning.

**S5:** To know the specific and practical foundations of metabolism in training and in high-level competition and its ability to be evaluated in compliance with the scientific rigor.

**S8:** To know the classification and function of nutrients in exercise, the essential elements of an athlete's diet and the different agents of ergogenic aids.

**E12:** To differentiate different elements of ergogenic aids, the function of essential nutrients for maintaining physical activity and sports performance.

## Methodology

Methodology	Hours	Work hours Required attendance	Work hours no attendance
Theoretical exposition	11.25	22.5 hours (20 %)	
Discussion groups, seminars	4.5		
Evaluation	2.25		
Tutorial	4.5		
Personal study	45	90 hours (80 %)	
Preparation of work and exposition	27		
Analysis of scientific articles	9		
Literature search	9		
<b>TOTAL</b>	<b>112.5</b>	<b>22.5</b>	<b>90</b>

## Syllabus

### Theoretical Teaching Program

Topic 1. Classification and function of essential nutrients in exercise.

Topic 2. Nutritional evaluation and design of diets. Evaluación nutricional y diseño de dietas. Case studies.

Topic 3. Specific nutrition (ergogenic aids) in different sports: endurance, strength, collectives, combat.

Topic 4. Nutrition in special situations.

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Topic 5. Essential elements of an athlete's diet; Hydration in Sports.

Topic 6. Diet: pre-, during and post-competition.

### Practical teaching program

Seminar 1. Presentation of specific cases of nutritional needs and ergogenic aids in different sports.

Seminar 2. Presentation of software related to the design and evaluation of nutritional diets for athletes.

Seminar 3. Presentation of nutritional case studies special situations.

## Relationship with other subjects of the curriculum

This material is related to Scientific Principles of Strength and Conditioning, Exercise Physiology, Biomechanics, Program Design as related to Strength and Conditioning 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 5<sup>th</sup>: 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%

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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 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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### Complementary bibliography

- Arasa-Gil, M. (2005). *Manual de Nutrición Deportiva*. Badalona: Paidotribo.



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- EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). Scientific Opinion on the substantiation of health claims related to sodium and maintenance of normal muscle function

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- EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). Scientific Opinion on the substantiation of health claims related to iron and formation of red blood cells and haemoglobin (ID 374, 2889), oxygen transport (ID 255), contribution to normal energy-yielding metabolism (ID 255), reduction of tiredness and fatigue (ID 255, 374, 2889), biotransformation of xenobiotic substances (ID 258), and “activity of heart, liver and muscles” (ID 397) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. *EFSA Journal* 2010;8(10):1740.
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rated perceived exertion/effort during exercise (ID 1488, 1490) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. *EFSA Journal* 2011;9(4):2053.

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## 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>

Master's in High Performance Sport: Strength and Conditioning (UCAM)

<http://www.ucam.edu/estudios/postgrados/rendimiento-deportivo-semipresencial>

Recursos variados sobre actividad física y deporte

<http://www.sportsci.org/>

<http://www.nscs-lift.org/>

## 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

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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.
- 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.