

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
#7	Nutrition, physical activity and sport	Third	First	Six	Optional
<b>LECTURER(S)</b>			<b>Postal address, telephone n°, e-mail address</b>		
<ul style="list-style-type: none"> <li>José Ángel Rufián Henares</li> </ul>			Dpto. Nutrición y Bromatología, 3ª floor, Facultad de Farmacia. Universidad de Granada Campus cartuja s/n. 18071 Granada  email: <a href="mailto:jarufian@ugr.es">jarufian@ugr.es</a>		
			<a href="http://www.ugr.es/~nutricion/pdf/tutorias1920.pdf">http://www.ugr.es/~nutricion/pdf/tutorias1920.pdf</a>		
<b>DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT</b>					
Degree in Human Nutrition and Dietetics					
<b>PREREQUISITES and/or RECOMMENDATIONS (if necessary)</b>					
It is recommended to have studies about subjects: Nutrition I, Nutrition II, Diet Principles and Dietetics.					
<b>BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE )</b>					
Organism's energy systems. Energy sources in physical activity. Micronutrients in physical activity. Nutritional ergogenic. Doping. Nutritional recommendations for special situations of physical activity and different sports.					
<b>GENERAL AND PARTICULAR ABILITIES</b>					
<u>General:</u>  To know the nutrients, their function in the organism, its bioavailability, needs and recommendations and the basis of energy balance and nutrition.  Integrate and evaluate the relationship between food and nutrition in health and in pathological situations.					



To apply scientific knowledge of physiology, pathophysiology, nutrition and food to planning and nutritional advice for individuals and communities, throughout the life cycle, both healthy and sick.

To design and implement protocols for assessment of nutritional status, identifying risk factors in nutrition.

To interpret nutritional diagnosis, assess the nutritional aspects of medical history and perform dietary action plan.

**Particular:**

Applying the Science of Food and Nutrition dietetic practice in different situations of physical activity and sport.

To know the nutrients, their functions and their use as energy sources and controllers for physical activity and sport.

To assess and calculate the nutritional requirements for different situations of physical activity and sport.

To identify basis of a healthy diet and effective for physically active people and athletes.

To know, early detection and evaluation of deviations in excess or defect, quantitative and qualitative nutritional balance of physically active people and athletes.

To plan, perform and interpret the assessment of nutritional status of subjects and / or groups practicing physical activity and sports, both healthy and special situations of physical activity.

To identify dietary and nutritional problems of the physically active person and athlete, and their risk factors and improper practices.

To plan and conduct nutritional educational programs for physically active athletes.

To prescribe specific food planning, within the purview of the dietitian-nutritionist, for physically active people and athletes.

**OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)**

Understanding the organism's energy systems and their performance during physical activity and the different energy sources and their use during physical activity.

To know the importance of hydration in physical activity and sport.

Knowing the nutritional ergogenic aids, their applications and differences with the doping.

Establish feeding patterns for different situations of physical activity and sports.



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## DETAILED SUBJECT SYLLABUS

### INTRODUCTION

THEME 1: Basic Concepts. Concept of Nutrition. Concepts of Physical Activity and Sport. Classification. role of nutritionist on a sports team. Classification of sports.

### ENERGY AND NUTRIENTS FOR ENERGY IN PHYSICAL ACTIVITY

THEME 2. HUMAN POWER SYSTEMS. Introduction. Energy systems of the human body. Nutrients such as energy sources. Energy metabolism during repose and exercise. Fatigue during exercise.

THEME 3. CARBOHYDRATES AS ENERGY SOURCE. Types of Carbohydrates. Important aspects of metabolism of carbohydrates in physical activity. Glycemic Index. Carbohydrates for exercise. Carbohydrate Loading. Some aspects ergogenic Carbohydrate.

THEME 4. FATS AS ENERGY SOURCE. Types of Fats. Important aspects of the metabolism of fats in the physical activity. Fat load. Some aspects ergogenic fat.

THEME 5. PROTEIN AS A SOURCE OF ENERGY. Types of proteins. Important aspects of protein metabolism in physical activity. Protein loading. some aspects ergogenic proteins.

THEME 6. VITAMINS IN PHYSICAL ACTIVITY. Types of vitamins. Vitamin needs of the athlete. Ergogenic potential of vitamins.

THEME 7. MINERALS IN PHYSICAL ACTIVITY. Types of minerals. Mineral needs of athletes. Some ergogenic aspects of minerals.

THEME 8. HYDRATION IN PHYSICAL ACTIVITY AND SPORT. Water needs. Regulation of organism temperature. Fluid and electrolyte loss during exercise. Fluid and electrolytes replacement. Ergogenic aspects.

### ERGOGENIC AIDS AND DOPING

THEME 9. NUTRITIONAL ERGOGENIC AIDS. Definition of nutritional ergogenic aids. Classification.

THEME 10. NUTRITIONAL ERGOGENIC AIDS. Description of nutritional ergogenic aids.

THEME 11. DOPING. Definition. Differences between doping substance and ergogenic aid. List of substances prohibited. Types of doping. Physiological effects of doping.

### NUTRITIONAL RECOMMENDATIONS ON PHYSICAL ACTIVITY AND SPORT

THEME 12. NUTRITION IN SPECIAL SITUATIONS. Child Nutrition of the sportsman. Teen athlete's nutrition. Nutrition of the sportsman veteran. Vegetarian Nutrition of the sportsman. Nutrition in certain pathologies.

THEME 13. NUTRITION RECOMMENDATIONS IN SHORT SPORTS. Training period. Period competition. Recovery period.

THEME 14. NUTRITION RECOMMENDATIONS ON AVERAGE DURATION SPORTS. Training period. Period competition. Recovery period.

THEME 15. NUTRITION RECOMMENDATIONS ON LONG TERM SPORTS. Training period. Period competition. Recovery period.

### PRACTICAL PROGRAM

Development of a specific eating plan tailored to the needs of a sport in concrete or a special situation of physical activity. Justification and exposure devised food plan.

### READING

- Nutrición para la salud, la condición física y el deporte / Melvin H. Williams ; Barcelona : Paidotribo, 2015.
- Rendimiento deportivo máximo : estrategias para el entrenamiento y la nutrición en el deporte / John Hawley, Louise Burke; Barcelona : Paidotribo, 2000.
- Nutrición y ayudas ergogénicas en el deporte / Javier González Gallego, José G. Villa Vicente; Buenos Aires :



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Síntesis , 1998.

- Nutrición para deportistas de alto nivel : guía de alimentos, líquidos y suplementos para el entrenamiento y la competición. Planes adaptados a cada deporte / Dan Benardot; Barcelona : Hispano Europea , 2001.
- Alimentación y nutrición del deportista : con regímenes adaptados a cada deporte / Camille Craplet, Pascal Craplet, Josette Craplet-Meunier; Barcelona : Hispano Europea, 2000.
- Nutrición y deporte / Odriozola, José María; Madrid : Eudema , 1994.
- Fundamentos de Nutrición en el Deporte / Marcia Onzari; Buenos aires: El Ateneo, 2004.
- Nutrición y deporte / Wootton, Steve; Zaragoza : Acribia , 1990.
- Nutrición en el deporte: ayudas ergogénicas y dopaje / Javier González Gallego, Pilar Sánchez Collado, José Mataix Verdú. Madrid : Díaz de Santos : Fundación Universitaria Iberoamericana, 2011.
- Alimentación para el deporte y la salud / Joan Ramón Barbany. Barcelona : Martinez Roca, 2012.
- Nutrición en el deporte: un enfoque práctico: Madrid: Médica Panamericana: 2009.
- Alimentación sana para el deportista / Olga López Torres. Alcobendas: Libsa, 2012
- Alimentación y deporte / Javier Ibañez Santos, Iciar Astiasarán Anchía Barañáin : EUNSA , 2010.
- Alimentación y nutrición en la vida activa : ejercicio físico y deporte / Pedro José Benito Reinado y col. 2013
- Nutrición y dietética para la actividad física y el deporte: manual práctico / Víctor Manuel Rodríguez Rivera, Aritz Urdampilleta Otegui (coordinadores). NetBiblo, 2013.
- Salud, deporte y cineantropometría / José Enrique Sirvent Belando, José Ramón Alvero Cruz (Eds.). Universidad de Alicante. 2014.
- La guía completa de la nutrición del deportista / Anita Bean. Paidotribo, 2014.

#### RECOMMENDED INTERNET LINKS

<http://www.wada-ama.org/en/>  
<http://www.csd.gob.es/>  
<http://www.coe.es/>  
<http://www.femedes.es/>



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