

MODULE	SUBJECT MATTER	YEAR	SEMESTER	CREDITS	TYPE
7	Nutrition, physical activity and sport	Fourth	First	Six	Optional
TEACHING STAFF ⁽¹⁾			ADDRESS, TELEPHONE NUMBER, EMAIL, ETC. DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
<ul style="list-style-type: none"> José Ángel Rufián Henares 			Dpto. Nutrición y Bromatología, 3 rd floor, Facultad de Farmacia. Universidad de Granada Campus cartuja s/n. 18071 Granada		
			email: jarufian@ugr.es		
			TIMETABLE FOR TUTORIALS OR LINK TO WEBSITE http://www.ugr.es/~nutricion/pdf/tutorias2021.pdf		
BELONGS TO UNDERGRADUATE DEGREE PROGRAMME			AND ALSO TO OTHER UNDERGRADUATE DEGREE PROGRAMMES		
Degree in Human Nutrition and Dietetics					
PREREQUISITES OR RECOMMENDATIONS (where applicable)					
It is recommended to have studies about subjects: Nutrition I, Nutrition II, Diet Principles and Dietetics.					
BRIEF DESCRIPTION OF CONTENT (ACCORDING TO OFFICIAL VALIDATION REPORT)					
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.					

¹ Consult any updates in Acceso Identificado > Aplicaciones > Ordenación Docente

(∞) This course guide should be filled in according to UGR regulations on assessment of student learning: (<http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/>)



GENERAL AND SPECIFIC COMPETENCES

General:

- 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 athlete



OBJECTIVES (EXPRESSED AS EXPECTED LEARNING OUTCOMES)

- 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.

DETAILED 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 of a devised food plan.

BIBLIOGRAPHY

BASIC 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: 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 LINKS

- <http://www.wada-ama.ogg/en>
- <http://www.csd.gob.es/>
- <http://www.coe.es/>
- <http://www.femede.es/>



TEACHING METHODOLOGY

- Master class
- Group work and expositions
- Tutorials
- Participation in teaching platforms

ASSESSMENT (ASSESSMENT INSTRUMENTS, CRITERIA AND PERCENTAGE VALUE OF FINAL OVERALL MARK, ETC.)

Continuous assessment

The evaluation will be carried out from the written exams in which the students will have to demonstrate the acquired competences, the presentations and / or expositions of the theory and problem works, as well as the class attendance, in the percentages that are detailed in the attached table.

In the case of written exams (control and final) it is necessary for the arithmetic mean between them to have been obtained, having obtained a minimum grade of 4.5 (out of 10).

The realization of the work-exposition, as well as passing of the corresponding theoretical exam will be an indispensable requirement to pass the subject.

For the extraordinary evaluation, the eliminated partials are not saved for the ordinary evaluation.

COMPETENCES	ASSESSMENT SYSTEM	% FINAL MARK
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Partial exam	45
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Final Exam	45
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Exposition of practical work	10

DESCRIPTION OF THE EXERCISES WHICH WILL CONSTITUTE SINGLE FINAL ASSESSMENT AS ESTABLISHED IN UGR REGULATIONS

- It will be carried out in a single academic act consisting of a theoretical-practical exam. Students who wish to avail themselves of this evaluation modality will have to request it to the Director of the Department in the first two weeks from the student's enrolment date, citing and accrediting the reasons that assist them for not being able to follow the evaluation system.

SCENARIO A (ON-CAMPUS AND REMOTE TEACHING AND LEARNING COMBINED)



TUTORIALS	
TIMETABLE (According to Official Academic Organization Plan)	TOOLS FOR TUTORIALS (Indicate which digital tools will be used for tutorials)
http://www.ugr.es/~nutricion/pdf/tutorias2021.pdf It will be essential to make an appointment in order to be able to tutor in person.	The telematic means will be used for tutorials only in the event that all the students enrolled in the subject cannot attend the class simultaneously and there is an alternation of groups in the classroom. During the virtual assistance weeks, preferably the email will be used to consult the student's doubts regarding the subject taught. In specific cases, Google Meet may be used.
MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY	
<ul style="list-style-type: none"> For face-to-face learning, the Google Meet platform will be used to synchronously retransmit the master classes. 	
MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)	
Ordinary assessment session	
<ul style="list-style-type: none"> In the event that due to the number of students enrolled and the size of the classroom where the classes are held, or because the safety distance between the students must be increased, the group must be divided into two and the class system must be used face-to-face and virtual, in order to carry out the continuous assessment it will be essential that the student attend 80% of the classes (both face-to-face and virtual). The rest of the evaluation criteria will be similar to those set out in the general evaluation section. 	
Extraordinary assessment session	
<ul style="list-style-type: none"> The evaluation criteria will be similar to those set forth in the general evaluation section. 	
Single final assessment	
<ul style="list-style-type: none"> The evaluation criteria will be similar to those set forth in the general evaluation section. 	
SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)	
TUTORIALS	
TIMETABLE (According to Official Academic Organization Plan)	TOOLS FOR TUTORIALS (Indicate which digital tools will be used for tutorials)
http://www.ugr.es/~nutricion/pdf/tutorias2021.pdf	Preferably the email will be used to consult the student's doubts regarding the subject taught. In specific cases, Google Meet may be used.
MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY	

Firma (1): MIGUEL MARISCAL ARCAS
En calidad de: Secretario/a de Departamento



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- For face-to-face learning, the Google Meet platform will be used to synchronously retransmit the master classes.
- Topics 6 and 7 (seminars on vitamins and minerals) will be carried out as autonomous work by the students and exposed through the Google Meet platform. Depending on the timing, it will be decided whether the preparation and presentation of these seminars is carried out by groups or individually.

MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

Ordinary assessment session

- The evaluation criteria will be similar to those set forth in the general evaluation section, except in the following sections:
- To be able to carry out the continuous evaluation it will be essential that the student attend 80% of the virtual classes.
- The percentages of the final grade will be modified as shown in the following table:

COMPETENCES	ASSESSMENT SYSTEM	% FINAL MARK
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Partial exam	40
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Final Exam	40
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Exposition of practical work	10
CG12,CG13,CG14,CG15,CG16,CE25,CE26,CE27,CE28,CE29,CE30,CE31,CE33,CE41,CE45	Exposition of seminars	10

Extraordinary assessment session

- The evaluation criteria will be similar to those set forth in the general evaluation section.

Single final assessment

- The evaluation criteria will be similar to those set forth in the general evaluation section.

ADDITIONAL INFORMATION (if necessary)

Regulations for the evaluation and qualification of the students of the University of Granada.

