

COURSE GUIDE FOR
NUTRITION IN PHYSICAL ACTIVITY AND SPORT
 Academic year 2020-2021

(Date last update: 5/07/2020)
 (Date approved in Department Council: 6/07/2020)

MODULE	SUBJECT MATTER	YEAR	SEMESTER	CREDITS	TYPE
PHYSICAL ACTIVITY AND HEALTH	<i>Nutrition in physical activity and sport</i>	3º	1º	6	Elective
TEACHING STAFF ⁽¹⁾			ADDRESS, TELEPHONE NUMBER, EMAIL, ETC. DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
Eduardo Jesús Guerra Hernández			DEPT Nutrition and Food Department, 3rd floor, Faculty of Pharmacy. Office No. 316. E-mail: ejuerra@ugr.es		
			TIMETABLE FOR TUTORIALS OR LINK TO WEBSITE		
			Tuesday and Thursday from 11:30 a.m. to 2:30 p.m. in the 1st semester and from 8:30 a.m. to 11:30 a.m. in the 2nd semester		
BELONGS TO UNDERGRADUATE DEGREE PROGRAMME			AND ALSO TO OTHER UNDERGRADUATE DEGREE PROGRAMMES		
<i>Degree</i> in Physical Activity Sciences and Sports					
PREREQUISITES OR RECOMMENDATIONS (where applicable)					
Have studied the subjects of Human Physiology and Biochemistry of Exercise					
BRIEF DESCRIPTION OF CONTENT (ACCORDING TO OFFICIAL VALIDATION REPORT)					
<ul style="list-style-type: none"> • Study of energy and nutrient requirements and recommended intakes for optimal health • Study of specific nutrient requirements for athletes and study of proper food to cover • Diets of training, competition and recovery • Study of the most common nutritional disorders in athletes • Assessment of nutritional status 					

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/!](http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/))



GENERAL AND SPECIFIC COMPETENCES

- CGI1; CGI2; CGI3; CGI5; CGI7; CGI8; CGP1; CGP3; CGP5; CGS1; CGS2; CGS3; CGS4; CPC5 (from the nutritional point of view); CPC6 (diets for training programs and sports)
- Evaluate the nutritional quality of the diet (N1)
- Assess nutritional status based on anthropometric, biochemical and dietary (N2)
- Choose the most appropriate food based on its composition to make adequate and balanced diets for athletes based on individual characteristics and type of physical activity performed (N3)
- Give nutritional advice to have an optimal health and a high performance sports (N4)

OBJECTIVES (EXPRESSED AS EXPECTED LEARNING OUTCOMES)

- Understand and convey the basic principles of human nutrition with particular attention to the incorporation of nutrients that promote healthy lifestyles and optimal performance in sports
- Use and interpret tables of food composition and recommended intakes of energy and nutrients for healthy diets and design appropriate to different periods of sports activity (training, competition and recovery).

DETAILED SYLLABUS

THEORY:

MODULE I: INTRODUCTION

Topic 1. - Definition of nutrition, food, nutrition and dietetics. Food, nutrient, diet and nutritional intake. A brief history of the Nutrition and Food Science. Classification and food constituents.

MODULE II: ENERGETIC AND NUTRITIONAL REQUIREMENTS

Topic 2. - Energy requirements of the human organism. Components of energy metabolism: basal metabolism, thermogenesis induced by food and physical activity energy expenditure. Methodology for determining the energy expenditure.

Topic 3. - Nutritional requirements and recommended intakes. Nutritional goals. Energy value of nutrients. Database tables and food composition. Dietary Guidelines.

MODULE III: FOOD, NUTRITION AND METABOLISM

Topic 4. - Carbohydrates. Classification. Food Sources of Carbohydrates. Digestion of carbohydrates. Glycemic index and its use in the practice of sports. Nutritional requirements and recommendations. Use and needs of carbohydrates before, during and after the competition ...

Topic 5. - LIPIDS. Composition and classification. Food sources of lipids: fats of vegetable origin, animal fats. Digestion and lipid metabolism. Nutritional requirements and recommendations. Lipid utilization and needs of athletes. Relationship between fat consumption and health

Topic 6. - PROTEIN. Composition and classification. Food Sources of protides. Digestion and protein metabolism. Evaluation of protein quality. Nutritional requirements and recommendations. Utilization and protein needs of athletes. Relationship between protein intake and health.

Topic 7. - VITAMINS. Rating: water soluble vitamins and fat soluble. Food sources of vitamins. Vitamins and biological analeptic sports. Requirements and recommendations of vitamins. Use and vitamin requirements



in athletes. Deficit, excess, and health.

Topic 8. - MINERALS. Rating: macro and micro. Food sources of minerals. Requirements and recommendations of vitamins minerals requirements in certain groups of athletes. . Deficit, excess, and health.

Topic 9. - WATER BALANCE. Assessment of need regular water. Role of water in thermoregulation. Dehydration. Classification and composition of the beverages. Fluid administration in athletes. Factors influencing fluid replacement.

MODULE IV: NUTRITION AND DIET IN TRAINING, COMPETITION AND RECOVERY PERIOD

Topic 10. - DIETARY ALLOWANCES FOR THE PERIOD OF TRAINING. Establishment of single system. Serving training: theoretical bases and practical examples of menus.

Topic 11. - SPORTS DIET IN LONG TERM .-REQUIRING A SUPPLY DURING THE COMPETITION. Cycling. Triathlon, marathon, mountain climbing, Nordic skiing, others. Ration recovery. Theoretical and practical.

Topic 12 - SERVES FOOD IN SPORTS EQUIPMENT. SPORTS MEDIA DURATION. Football, basketball, handball and others. Theoretical and practical.

Topic 13.- DIET IN NOT ALLOWING A SPORTS SUPPLY DURING THE COMPETITION. Characterized by an effort Sports brief: pole vault, jumping length. Judo, weightlifting other sports characterized by a continued effort, middle distance. The problem of the series. Theoretical and practical.

MODULE V

Topic 14. - Nutritional ergogenic aids

Topic 15. - Nutritional disorders in athletes. Nutrition and immune function in athletes

Topic 16. - Nutritional Myths common in athletes. Correct use of the nutritional needs of athletes of web pages.

PRACTICE:

Seminars/Workshops

- PRACTICE I - Calculation of energy needs of the individual
- PRACTICE II. - Table of food composition
- PRACTICE III. - Assessment of nutritional status
- PRACTICE IV. - Development of diets for different sports
- PRACTICE V. - Preparation of diets in different stages of physical activity.
- PRACTICE VI.- Introduction to the anthropometric and nutritional assessment tool

Exposition of topics related to the nutrition of specific sports

BIBLIOGRAPHY

BASIC READING LIST

- SPORT NUTRITION. Asier Jeukendrup and Michael Gleeson. Human Kinetics. Champaign, IL, (2004)
- NUTRICIÓN PARA LA SALUD, LA CONDICIÓN FÍSICA Y EL DEPORTE. Melvin H. Williams. Dawn E.Anderson



y Eric S. Rawson. Pidotribio, España, (2015)

- NUTRICIÓN EN EL DEPORTE: AYUDAS ERGOGÉNICAS Y DOPAJE. Javier González Gallego, Pilar Sánchez Collado, José Mataix Verdu, Díaz de Santos: Fundación Universitaria Iberoamericana, (2006).
- ESSENTIALS OF SPORTS NUTRITION AND SUPPLEMENTS. Edited by José Antonio... [et al.] Totowa, NJ: Humana Press, 2008.
- SPORTS NUTRITION (fats and proteins). Judy A. Driskell, CRC Press, Boca Raton, (2007)
- SPORTS AND EXERCICE NUTRITION. W. D. McArdle, F.I. Katch and V.L. Katch. Tercera Edición. Wolters Kluwer, Philadelphia (2009)
- NUTRICIÓN EN EL DEPORTE: Un enfoque práctico Louise Burke. Editorial Médica Panamericana, Madrid (2010)
- NSCA's GUIDE TO SPORT AND EXERCICE NUTRITION. Bill I. Campbel and Marie A. Spano. Human Kinetics, USA, (2011)
- GUÍA PRÁCTICA DE NUTRICIÓN DEPORTIVA-Asker Jeukendrup. Tutor, Madrid, (2011)

COMPLEMENTARY READING

Nutrition

- Mahan, L.K., Escott-Stump, S. Raymond. J.L. Nutrición y Dietoterapia de Krause, 13ª Ed. Editorial Elsevier. Barcelona (2012)
- NUTRICIÓN: Texto y Atlas, Hans Biesalski y Peter Grimm, Editorial Médica Panamericana, Madrid (2009)
- INGESTAS DIETÉTICAS DE REFERENCIA (IDR) PARA LA POBLACIÓN ESPAÑOLA. Federación Española de Sociedades de Nutrición, Alimentación y Dietética (FESNAD). Barañain (Navarra): EUNSA, 2010
- FUNDAMENTOS DE NUTRICIÓN Y DIETÉTICA. BASES METODOLÓGICAS Y APLICACIONES Martínez y Portillo Editorial Panamericana 2010

Nutrition and Food Science

- NUTRICIÓN Y ALIMENTACIÓN HUMANA (Tomos I y II) . J. Mataix (EDITOR). Ergon, Madrid (2009)
- TRATADO DE NUTRICIÓN (Tomos I-V). A. Gil (EDITOR). Editorial Panamericana, Madrid (2017)
- QUÍMICA DE LOS ALIMENTOS. Belitz HD, Grosch W., Schieberle, P (2012), 3ª ed. Ed. Acribia. Zaragoza

Databases

- Sport discos

RECOMMENDED LINKS

- www.gssiweb.com (Gatorade Sports Science Institute)
- www.nismat.org (Nicholas Institute of Sports Medicine and Athletic Trauma)
- www.sportsci.org (Sport Science)
- www.nutrition-society.org (Nutrition society)
- <http://www.fns.usda.gov/fns/> (USDA Food and Nutrition Service)
- www.acsm.org (American College of sports medicine)
- www.sportsnutrition-society.org/ (International society of sports nutrition)
- www.scandpg.org. (Sports, cardiovascular and wellness nutrition)

TEACHING METHODOLOGY



- Masterly / expository lesson
- Seminars and discussion sessions
- Problems and practical cases

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

- The evaluation of the theoretical part of the subject will be carried out through three eliminatory partial exams (from 6.5). If either or both are not passed, a final written exam will be realized. The partial passed only are considered for the ordinary assessment session. The theoretical part represents 70% of the final note of the course. Attendance and participation in the theoretical classes will be valued up to 5% of the final note.
- Attendance at practical classes is mandatory (100% attendance). The evaluation of the practices will be carried out through resolution of problems and practical cases. The practical note will account of 12.5% of the note final.
- The practical works and seminars will account of 12.5% of the final grade
- To pass the course, you must have passed all parts.

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

According to the regulations of "Evaluation and qualification of students" of the University of Granada, a final single evaluation will also be carried out. The theoretical part will consist of short questions and development of topics and represents a 75% of total note. The practical part will consist of the resolution of problems and represents a 25% of the total note. To pass the course, you must have passed both parts.

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

TUTORIALS

TIMETABLE

(According to Official Academic Organization Plan)

Tuesday and Thursday from 11:30 a.m. to 2:30 p.m. in the 1st semester and from 8:30 a.m. to 11:30 a.m. in the 2nd semester

TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

The tutorial will be attended only by prior appointment (during tutorial hours); however, they can also be attended through google meet (by appointment and during tutorial hours)

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

- Classes will be in-person until full allowed capacity. Students who cannot attend in person will be able to do it from home in the same class time because the classes are equipped with technological means for classes to be broadcast live.

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

Ordinary assessment session

- The evaluation of the theoretical part of the subject will be carried out through three eliminatory partial exams (from 6.5). If either or both are not passed, a final written exam will be realized. The partial passed only are considered for the ordinary assessment session. The theoretical part represents 70% of the final



note of the course. Attendance and participation in the theoretical classes will be valued up to 5% of the final note.

- Attendance at practical classes is mandatory (100% attendance). The evaluation of the practices will be carried out through resolution of problems and practical cases. The practical note will account of 12.5% of the note final.
- The practical works and seminars will account of 12.5% of the final grade
- To pass the course, you must have passed all parts.

Extraordinary assessment session

- The evaluation of the theoretical part of the subject will be carried out through a exams with short and large questions. The theoretical part represents 70% of the final note of the course.
- Attendance and participation in the theoretical classes will be valued up to 5% of the final note.
- Attendance at practical classes is mandatory (100% attendance). The evaluation of the practices will be carried out through resolution of problems and practical cases. The practical note will account of 12.5% of the note final.
- The practical works and seminars will account of 12.5% of the final grade
To pass the course, you must have passed all parts.

Single final assessment

According to the regulations of "Evaluation and qualification of students" of the University of Granada, a final single evaluation will also be carried out. The theoretical part will consist of short questions and development of topics and represents a 75% of total note. The practical part will consist of the resolution of problems and represents a 25% of the total note. To pass the course, you must have passed both parts.

SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)

TUTORIALS

TIMETABLE

(According to Official Academic Organization Plan)

Tuesday and Thursday from 11:30 a.m. to 2:30 p.m. in the 1st semester and from 8:30 a.m. to 11:30 a.m. in the 2nd semester

TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

The tutorials will be done through "google meet" (by appointment and during tutorial hours)

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

The theoretical and practical classes will be carried out using "google meet".

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

Ordinary assessment session

The theoretical and practical part exams will be carried out using the PRADO exam platform. The presentation of the individual works will be through "google meet".

- The evaluation of the theoretical part of the subject will be carried out through three eliminatory partial exams (from 6.5). If either or both are not passed, a final written exam will be realized. The partial passed



only are considered for the ordinary assessment session. The theoretical part represents 75% of the final note of the course. .

- Attendance at practical classes is mandatory (100% attendance). The evaluation of the practices will be carried out through resolution of problems and practical cases. The practical note will account of 12.5% of the note final.
- The practical works and seminars will account of 12.5% of the final grade
To pass the course, you must have passed all parts.

Extraordinary assessment session

The theoretical and practical part exams will be carried out using the PRADO exam platform. The presentation of the individual works will be through "google meet".

- The evaluation of the theoretical part of the subject will be carried out through a exams with short and large questions. The theoretical part represents 75% of the final note of the course.
- Attendance at practical classes is mandatory (100% attendance). The evaluation of the practices will be carried out through resolution of problems and practical cases. The practical note will account of 12.5% of the note final.
- The practical works and seminars will account of 12.5% of the final grade
To pass the course, you must have passed all parts.

Single final assessment

The theoretical and practical part exams will be carried out using the PRADO exam platform. According to the regulations of "Evaluation and qualification of students" of the University of Granada, a final single evaluation will also be carried out. The theoretical part will consist of short questions and development of topics and represents a 75% of total note. The practical part will consist of the resolution of problems and represents a 25% of the total note. To pass the course, you must have passed both parts.

ADDITIONAL INFORMATION (if necessary)

Following the recommendations of the CRUE and the UGR Secretary for Inclusion and Diversity, in the case of students with disabilities or other specific needs for educational support, the acquisition and assessment systems for competencies included in this teaching guide will be applied in accordance with design principle for all people, making the necessary methodological, temporal and spatial adaptations to facilitate learning and the demonstration of knowledge according to the needs and functional diversity of the students.

