

MODULE	SUBJECT MATTER	YEAR	SEMESTER	CREDITS	TYPE
Physical activity and sports science	Nutrition and health	2º	2º	6	Optional
TEACHING STAFF <sup>(1)</sup>			ADDRESS, TELEPHONE NUMBER, EMAIL, ETC. DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
<ul style="list-style-type: none"> <li><b>Celia Rodríguez Pérez</b></li> </ul>			Department of Nutrition and Food Science, 3rd floor. Faculty of Education and Sports Sciences, Melilla Campus. Office 309. Email: celiarp@ugr.es		
			<a href="https://www.ugr.es/personal/cd773e592bd0eff89154e0b5efbddd7">https://www.ugr.es/personal/cd773e592bd0eff89154e0b5efbddd7</a> <i>*Please, send an email to the professor to arrange the appointment.</i>		
BELONGS TO UNDERGRADUATE DEGREE PROGRAMME			AND ALSO TO OTHER UNDERGRADUATE DEGREE PROGRAMMES		
Degree in Physiotherapy. MELILLA CAMPUS			Nursing and Occupational Therapy		
PREREQUISITES OR RECOMMENDATIONS (where applicable)					
Have adequate knowledge about:					
<ul style="list-style-type: none"> <li>Human Physiology, Human Biochemistry and Public Health.</li> </ul>					
BRIEF DESCRIPTION OF CONTENT (ACCORDING TO OFFICIAL VALIDATION REPORT)					
Overview. Nutritional and energy requirements. Nutrients Dietetics. Food safety. Nutritional education. Assessment of nutritional status.					

<sup>1</sup> 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

### A. General competences

- 1.2. Problem resolution.
- 1.4. Capacity for analysis and synthesis.
- 1.6. Ability to manage information.
- 1.7. Teamwork.
- 1.8. Critical thinking.
- 1.9. Autonomous Learning.

### B. Specific competences

- 2.6. Understand the theories of learning to apply in health education and in the process of learning throughout life.
- 2.17. Understand the fundamental concepts of health and the role of the physical therapist in the health system. Promote healthy lifestyle habits through health education. Understand the factors related to health and problems related to physical therapy in the fields of Primary, Specialized Care and Occupational Health.

## OBJECTIVES (EXPRESSED AS EXPECTED LEARNING OUTCOMES)

At the end of this course the student is expected to be able to:

- Know the preventive character that optimal nutrition has on health.
- Understand and calculate the energy and nutritional needs of the body.
- Distinguish the nutritional aspects, sources and recommended intakes of the different nutrients.
- Determine the nutritional needs at different stages of life, physiological states and in sports.
- Differentiate between the recommendations set in the nutritional pyramid, dietary reference intakes and nutritional objectives.
- Understand the healthy characteristics of Mediterranean food.
- Manage food composition tables.
- Assess the nutritional composition of different menus using a 24-hour reminder and a data processing computer package.

## DETAILED SYLLABUS

### THEORY

#### SECTION 1. NUTRITIONAL NEEDS.

- **Unit 1.** GENERAL OVERVIEW OF NUTRITION SCIENCE. Nutrition and food science: definitions. Food, nutrient, ration and diet concept. Goals. Historical evolution. Relationship with other sciences. Current situation and prospects. Bibliographical sources.
- **Unit 2.** NUTRITIONAL NEEDS I. Cellular energy transformations. Minimum and total energy needs. Factors that modify them. Specific dynamic effect.
- **Unit 3.** NUTRITIONAL NEEDS II. Energetic value of the food. Isodynamic law. Tables of food composition. Nutritional and energy needs of the human organism: nutritional pyramid, recommended intakes and nutritional objectives.

#### SECTION 2. MACRO AND MICRONUTRIENTS.

- **Unit 4.** NUTRITIONAL ASPECTS OF CARBON HYDRATES. Classification, functions and sources. Digestion,



absorption, metabolism and regulation. Dietary fiber. Dietary recommendations.

- **Unit 5. NUTRITIONAL ASPECTS OF LIPIDS.** Classification, functions and sources. Digestion, absorption, metabolism and regulation. Essential fatty acids. Dietary recommendations.
- **Unit 6. NUTRITIONAL ASPECTS OF PROTEINS.** Classification, functions and sources. Digestion, absorption, metabolism and regulation. Essential amino acids. Protein quality assessment. Supplementation and complementation. Dietary recommendations.
- **Unit 7. NUTRITIONAL ASPECTS OF MINERALS.** Classification, functions and sources. Digestion, absorption, metabolism and regulation. Bioavailability. Influential factors in the mineral content in food. Dietary recommendations.
- **Unit 8. NUTRITIONAL ASPECTS OF VITAMINS.** Classification, functions and sources. Digestion, absorption, metabolism and regulation. Influential factors in the content of vitamins in food. Dietary recommendations.
- **Unit 9. NUTRITIONAL IMPORTANCE OF WATER.** Hydric balance. Nutritional requirements. Sources. Regulation.
- **Unit 10. COMPOSITION AND NUTRITIVE VALUE OF THE MAIN FOOD GROUPS.** Animal foods: meat, fish and seafood, eggs and milk, and derivatives. Edible fats. Vegetable foods: cereals, legumes, vegetables and greens, and fruits. Drinks.

### SECTION 3. NUTRITION IN DIFFERENT STAGES OF LIFE AND PHYSIOLOGICAL STATES. NUTRITIONAL EVALUATION AND ALTERNATIVE FORMS OF FOOD.

- **Unit 11. HUMAN NUTRITION DURING PREGNANCY AND LACTATION.** Nutritional needs during pregnancy. Nutritional needs during lactation. Recommended food groups.
- **Unit 12. HUMAN NUTRITION DURING THE FIRST YEAR OF LIFE.** Nutritional needs in the infant. Breastmilk. Formula milk. Evolution of diet during the first year of life.
- **Unit 13. HUMAN NUTRITION IN CHILDREN.** Nutritional needs in childhood. Infant nutrition education: eating behaviour.
- **Unit 14. HUMAN NUTRITION IN ADOLESCENCE.** Physiological changes and nutritional needs of the adolescent. Nutritional problems.
- **Unit 15. HUMAN NUTRITION IN THE HEALTHY ADULT.** Physiological and psychosocial changes. Nutritional needs in the healthy adult. Recommended food groups.
- **Unit 16. HUMAN NUTRITION IN THE ELDERLY.** Aging concept: associated pathologies. Physiological changes related to nutrition. Nutritional needs. Recommended foods.
- **Unit 17. NUTRITION IN SPORTS PRACTICE.** Nutritional needs of the athlete. Training, pre-competition and post-competition diets. Ergogenic substances. alcohol and sport. Sport coffee.
- **Unit 18. NUTRITION AND DISEASE PREVENTION.** Nutrition and prevention of obesity, anorexia, bulimia nervosa, cardiovascular diseases, hypertension, intolerance to carbohydrates, osteoporosis, anemia, constipation, cancer, gout and dental caries.
- **Unit 19. EVALUATION OF THE NUTRITIONAL STATUS.** Food consumption, clinical, anthropometric and biochemical evaluations. Subjective assessment of nutritional status.
- **Unit 20. ALTERNATIVE FORMS OF FOOD.** Vegetarian and ovo-lacto-vegetarian food. Macrobiotic diet. Hygienic food: concept of dissociated diet. Mediterranean food. Advantages and disadvantages.

### PRACTICE

#### Seminars/Workshops

- **Practice 1. PROBLEMS.** Calculation of the basal and / or total energy needs of healthy individuals, athletes, according to the physiological state, etc.; of the energy value of a ration or diet by using food composition tables.
- **Practice 2. DIETARY EVALUATION.** Through the use of the 24-hour reminder technique, for 3 consecutive days including 1 weekend, using a data processing software package.



- **Practice 3.** PLANNING MENUS BALANCED FOR WEEKLY. Both a computer package and different food-based dietary guides will be used to prepare a balanced weekly menu.
- **Practice 4.** EVALUATION OF THE NUTRITIONAL STATUS. Methods for evaluating nutritional status. Use of anthropometric techniques to study body composition and nutritional evaluation.

#### BIBLIOGRAPHY

##### BASIC READING LIST

- A. M. Requejo, R. M. Ortega: "NUTRIGUÍA: MANUAL DE NUTRICIÓN CLÍNICA EN ATENCIÓN PRIMARIA". Complutense. Madrid, 2003.
- Á. Gil Hernández: "TRATADO DE NUTRICIÓN". Editorial Médica Panamericana, Madrid, 2017.
- E. Casanueva, M. Kaufer-Hortwitz, A. B. Pérez-Lizauz, P. Arroyo: "NUTRIOLOGÍA MÉDICA, 2ª edición". Panamericana Medica. Buenos Aires, 2001.
- J. Mataix Vedú : "NUTRICIÓN Y ALIMENTACIÓN HUMANA". Ergon. Madrid, 2002.
- L. K. Mahan, S. Scott-Stump: "NUTRICIÓN Y DIETOTERAPIA DE KRAUSE, 10ª edición". McGraw-Hill Interamericana. México, 2001.
- M. E. Shills, J. A. Olson, M. Shike, C. Ross: "NUTRICIÓN EN SALUD Y ENFERMEDAD, 9ª edición". McGraw-Hill Interamericana. México, 2002.

##### COMPLEMENTARY READING

- Students will be provided with a complementary and updated bibliography in each of the sections.

#### RECOMMENDED LINKS

- Ingestas dietéticas de referencia (DRIs): <http://www.nal.usda.gov/fnic/etext/000105.html>
- Organización de Naciones Unidas para la agricultura y alimentación. [www.fao.org](http://www.fao.org)
- Agencia Española de Consumo, Seguridad Alimentaria y Nutrición (AECOSAN): [http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan\\_inicio.htm](http://www.aecosan.msssi.gob.es/AECOSAN/web/home/aecosan_inicio.htm)
- Guía de la alimentación y salud UNED: <http://www.uned.es/pea-nutricion-y-dietetica-I/guia/>
- Federación española de sociedades de nutrición, alimentación y dietética. <http://www.fesnad.org/>
- Principios y definiciones: <http://www.fao.org/3/y5686e/y5686e04.htm>
- Base de datos española de composición de alimentos. BEDCA. Disponible en: <http://www.bedca.net/bdpub/index.php>
- Base de datos de Composición de Alimentos del Departamento de Agricultura de los Estados Unidos de América. Disponible en: <https://ndb.nal.usda.gov/ndb/search/list>

#### TEACHING METHODOLOGY

The methodology will be based on strategies typical of an active and autonomous teaching, focused on the figure of the student as a key element of the training system and with the participation of the teacher as facilitator and facilitator of the learning process. For the development of the general agenda, the following models and teaching tools will be used:

- Master lesson.
- Seminars in which the material to be used will be previously provided to the students.
- Tutorials, through which the students will be oriented on the autonomous work to be carried out in the subject, as well as on their comprehensive academic training.
- Self-assessment questionnaires for each topic using the PRADO platform.
- Use of discussion forums where the contents of the subject will be expanded, where students can propose and discuss topics of interest and that will also serve to resolve doubts related to the subject to be taught,



both by the teacher and the teacher. rest of colleagues.

Distribution of hours:

- Theoretical classes: 45 contact hours.
- Seminars: 10 contact hours.
- Presentation and defence of work done: 5 contact hours.
- Study and work, both, independently and in groups: 60 non-contact hours.

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

### ORDINARY CALL

A continuous assessment will be carried out, both of the theoretical program and of the practical one, in which the feedback with the students will be constant and in which different resources and tools will be provided. This method will be focused on the students achieving the necessary competencies for the subsequent employment in the workplace.

- There will be a partial test type at the end of each block of the subject that will be computed with up to 40% of the final grade and that will include a multiple-choice question and another with short-answer questions. Each partial will include 48 multiple-choice questions, with 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 out of 10 plus 2 short-answer questions worth 1 point each. The total duration of the exam will be 60 minutes. The exams must have a grade of at least 5 out of 10 to use the continuous evaluation system.
- Problem-based learning. Students will have to deliver a portfolio with the assumptions made in each of the sections of the subject. At the beginning of the course, students will be provided with the rubric for each block. It will represent up to 15% of the final grade.
- Preparation of a portfolio with the results derived from the seminars. It will represent up to 15% of the final grade.
- Preparation and presentation of autonomous bibliographic research works on previously established topics. It will compute up to 20% of the final grade and includes its individual and/or group preparation, its presentation and its presentation and defence in class. At the beginning of the course, students will be provided with the rubric of both the written work and the exhibition.
- Attendance and active participation in class, discussion forums through the Facebook group and a blog enabled for the subject related to the proposed topics: 10% of the final grade.

In order to apply this evaluation system, it is necessary that the theoretical exam score is at least 5 out of 10.

### EXTRAORDINARY CALL.

- There will be an exam with all the theoretical material included in the syllabus. It will be a test-type exam with 60 multiple-choice questions and 2 short-answer questions. The multiple-choice questions will have 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 for test-type questions plus 2 short-answer questions worth 1 point each. The total score obtained in the rest of the activities proposed other than the theoretical evaluation will be maintained and weighted whenever a minimum grade of 4.5 out of 10 is reached in the exam.

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. The theoretical part will represent 70% of the final grade (60 test questions. The multiple-choice questions will have 4 answers,



only one correct. Blank questions do not score, incorrect questions subtract 0.33% from the final score) and the practical part 30% (resolution of 3 problems). The total stipulated duration will be 120 minutes. The 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 of the teaching of the subject, citing and accrediting the reasons that assist them for not being able to follow the system of continuous assessment.

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

#### TUTORIALS

##### TIMETABLE

(According to Official Academic Organization Plan)

Tuesday: 12-14 h\*

Wednesday: 10-14 h\*

\*Please, send an email to the professor to arrange the appointment.

##### TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

- Face-to-face in the teacher's office whenever the situation allows it.
- Google Apps UGR Meet prior email to arrange a tutorial.
- PRADO forums and messaging.

#### MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

- The teaching methodology will be maintained as established in the POD. The agenda will be taught with the number of students stipulated by the Faculty of Health Sciences to safeguard the safety distance. In any case, an attempt will be made to maximize the presence of the students. A guide for each topic will be uploaded to the PRADO platform to facilitate student monitoring of the subject.

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

Ordinary assessment session

A continuous assessment will be carried out, both of the theoretical program and of the practical one, in which the feedback with the students will be constant and in which different resources and tools will be provided. This method will be focused on the students achieving the necessary competencies for the subsequent employment in the workplace.

- There will be a partial test type at the end of each block of the subject that will be computed with up to 40% of the final grade and that will include a multiple-choice question and another with short-answer questions. Each partial will include 48 multiple-choice questions, with 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 out of 10 plus 2 short-answer questions worth 1 point each. The total duration of the exam will be 60 minutes. The exams must have a grade of at least 5 out of 10 to use the continuous evaluation system.
- Problem-based learning. Students will have to deliver a portfolio with the assumptions made in each of the sections of the subject. At the beginning of the course, students will be provided with the rubric for each block. It will represent up to 15% of the final grade.
- Preparation of a portfolio with the results derived from the seminars. It will represent up to 15% of the final grade.
- Preparation and presentation of autonomous bibliographic research works on previously established topics. It will compute up to 20% of the final grade and includes its individual and/or group preparation, its presentation and its presentation and defence in class. At the beginning of the course, students will be provided with the rubric of both the written work and the exhibition.



- Attendance and active participation in class, discussion forums through the Facebook group and a blog enabled for the subject related to the proposed topics: 10% of the final grade.

**Tools used for evaluation:**

- PRADO self-assessment questionnaires (theory).
- PRADO Exam Questionnaires. Each partial will include 48 multiple-choice questions, with 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 out of 10 plus 2 short-answer questions worth 1 point each. The total duration of the exam will be 60 minutes. The exams must have a grade of at least 5 out of 10 to use the continuous evaluation system. Percentage on final grade: 40%
- PRADO tasks. Portfolio with the assumptions raised in each of the blocks of the subject. It will represent up to 15%
- PRADO tasks. Preparation of a portfolio with the results derived from the seminars (practices). It will represent up to 15% of the final grade.
- PRADO and Google Apps UGR Meet tasks (theory). Preparation and presentation of autonomous bibliographic research works on previously established topics. Percentage on final grade: 20%
- Forums, virtual / face-to-face assistance and active face-to-face / virtual participation (theory). The participation of the student will be evaluated, as well as the interest of the proposed topics and the discussions generated in the forums set up for this purpose.
- Percentage on final grade: 10%

Extraordinary assessment session

- PRADO Exam Questionnaires. There will be an exam with all the theoretical material included in the syllabus. It will be a test-type exam with 60 questions and 2 short questions. The multiple-choice test questions will have 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 for test-type questions plus 2 short-answer questions worth 1 point each. The total score obtained in the rest of the activities proposed other than the theoretical evaluation will be maintained and weighted whenever a minimum grade of 4.5 out of 10 is reached in the exam.

Single final assessment

- PRADO Exam Questionnaires. It will be carried out in a single academic act consisting of a theoretical-practical exam. The theoretical part will represent 70% of the final grade (60 test questions. The multiple-choice questions will have 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% from the final score) and the practical part 30% (resolution of 3 problems). The total stipulated duration will be 120 minutes. The 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 of the teaching of the subject, citing and accrediting the reasons that assist them for not being able to follow the system of continuous assessment.

**SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)**

TUTORIALS

TIMETABLE

(According to Official Academic Organization Plan)

Tuesday: 12-14 h\*

TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

- Google Apps UGR Meet prior email to arrange a



Wenesday: 10-14 h\*  
*\*Please, send an email to the professor to arrange the appointment.*

- tutorial.
- PRADO forums and messaging.
  - For specific group questions: WhatsApp application (through the course delegate).

#### MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

- The teaching methodology will be maintained as established in the POD. The agenda will be taught with the number of students stipulated by the Faculty of Health Sciences to safeguard the safety distance. In any case, an attempt will be made to maximize the presence of the students. A guide for each topic will be uploaded to the PRADO platform to facilitate student monitoring of the subject.

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

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- Percentage on final grade: 10%

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- PRADO Exam Questionnaires. There will be an exam with all the theoretical material included in the syllabus. It will be a test-type exam with 60 questions and 2 short questions. The multiple-choice test questions will have 4 answers, only one correct. Blank questions do not score, incorrect questions subtract 0.33% of the final score. Total score of 8 for test-type questions plus 2 short-answer questions worth 1 point each. The total score obtained in the rest of the activities proposed other than the theoretical evaluation will be maintained and weighted whenever a minimum grade of 4.5 out of 10 is reached in the exam.

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#### ADDITIONAL INFORMATION (if necessary)

