Universidad Europea

# 1. BASIC INFORMATION

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|---|---|
| **Course** | Module 2: Nutrition and Ergogenic Aids |
| **Degree program** | Master's Degree in Sports Training and Nutrition |
| **School** | Real Madrid Graduate School/School of Sports Sciences |
| **Year** | First |
| **ECTS** | 10 ECTS |
| **Credit type** | Mandatory |
| **Language(s)** | English |
| **Delivery Mode** | Campus-Based |
| **Semester** | Annual |
| **Academic Year** | 2020/2021 |
| **Coordinating professor** | Dr. HELIOS PAREJA/NOELIA BONFANTI |

# 2. PRESENTATION

"Nutrition and Ergogenic Aids" is one of the principal modules of the program as regards volume of content, and is worth 10 ECTS. This module includes all the content related to nutrition and sports, such as hydration in relation to playing sports, macronutrients in sports, the importance of micronutrients, eating disorders, endocrine-metabolic relationship and altered immune regulation in response to sporting activity at different levels of intensity. It also addresses how to plan and organize a sportsperson's diet, as well as analyze their body composition and somatotype based on measurement of skinfolds, body weight, and different heights, diameters and perimeters.

The grade for this module comprises lab practice, group work and a multiple-choice exam.

# 3. COMPETENCIES AND LEARNING OUTCOMES

**Core competencies:**

- *CB1. Students should possess and understand knowledge that provides a basis or opportunity to be innovative in the development and/or application of ideas, often in a research context.*

- *CB2. Students should be able to apply their acquired knowledge and problem-solving ability in new or little-known environments within broader (or multidisciplinary) contexts related to their area of study.*
- *CB3. Students should be able to integrate knowledge and tackle the complexity of formulating judgements based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities related to the application of their knowledge and judgements.*
- *CB4. Students should be able to communicate their conclusions –and the ultimate reasons that support them– to specialized and non-specialized audiences in a clear and unambiguous way.*
- *CB5. Students should possess learning skills that allow them to continue studying in a largely self-directed or autonomous way.*

***Cross-curricular competencies:***

- *CT1. Self-learning skills:* being able to choose the most effective strategies and tools at the most appropriate time to learn and autonomously put our learning into practice.
- *CT3. Capacity to adapt to new situations:* being able to assess and understand different situations, adapting our own approach insofar as is necessary or appropriate.
- *CT4.* Analysis and synthesis skills: being able to break down complex situations into their constituent parts, as well as to assess other alternatives and approaches in order to find the best solutions. Synthesis seeks to reduce complexity in order to facilitate understanding and/or problem solving.
- *CT7.* Responsibility: being able to fulfill the commitments a person makes to themselves and to others when performing a task and trying to achieve a set of goals as part of the learning process. The ability of any individual to acknowledge and accept the consequences of their own actions.
- *CT9: Teamwork: being able* to participate and cooperate actively with other people, areas and/or organizations in order to achieve common goals.

***Specific competencies:***

- CE2: Analyzing and applying physiological, biomechanical, psychological and social principles to different sporting fields and nutrition, identifying unsuitable practices that represent a health risk, in order to avoid them and correct them in the different types of population.

- CE3: Understanding and knowing how to access scientific documentation related to the areas of human performance and sports nutrition.
- CE4: Interpreting research and applying new technologies in the field of training and sports nutrition.
- CE5: Knowing the methodology and procedures involved in scientific research in the field of training and sports nutrition applied to all ages and performance levels.
- CE6: Designing and carrying out research in the field of sports and nutrition, contributing new knowledge in a specific area of scientific and social interest, respecting ethical limits and values.
- CE9: Diagnosing level of physical fitness, motor skills and nutritional health in order to be able to design training programs and provide nutritional advice applicable to different sporting specialties and performance levels.
- CE11. Acquiring knowledge independently (self-learning).

***Learning outcomes:***

- RA1. Detection of dehydration phenomena in relation to sporting activity, and recommending appropriate measures for reestablishing hydro-electrolytic balance while exercising in extreme heat and humidity.
- RA2. Identification of the most suitable combinations of nutrients, in quality and quantity, for restoring endocrine-metabolic balance and altered immune regulation in response to sporting activity at different levels of intensity.
- RA3. Planning and organizing a sportsperson's diet according to their specific weight maintenance/loss/gain needs, or to help improve an illness process of cardio-metabolic origin.
- RA4. Identifying sportspeople who suffer from eating disorders and referring them to other professionals (doctors, psychologists) for specialized help.
- RA5. Performing an analysis of a sportsperson's body composition and somatotype based on measurement of skinfolds, body weight, and different heights, diameters and perimeters.
- RA6. Prescribing different natural ergogenic aids and nutritional supplements aimed at improving a sportsperson's performance and recovery.

The table below shows the relationship between the competencies developed in the course and the learning outcomes pursued:

| Competencies | Learning outcomes |
|---|---|
| CB1, CB2, CB3, CB4, CB5<br>CT1, CT3, CT4, CT9.<br>CE2, CE3, CE6, CE9, CE11. | RA1 |
| CB1, CB2, CB3, CB4, CB5<br>CT1, CT7, CT9.<br>CE2, CE3, CE4, CE9, CE11. | RA2 |
| CB1, CB2, CB3, CB4, CB5<br>CT1, CT3, CT4,<br>CE2, CE3, CE4, CE5, CE6. | RA3 |
| CB1, CB2, CB3, CB4, CB5<br>CT4, CT7, CT9.<br>CE2, CE5, CE6, CE9, CE11. | RA4 |
| CB1, CB2, CB3, CB4, CB5<br>CT1, CT7, CT9.<br>CE2, CE3, CE4, CE5, CE6. | RA5 |
| CB1, CB2, CB3, CB4, CB5<br>CT1, CT3, CT4,<br>CE3, CE4, CE5, CE6. | RA6 |

## 4. COURSE CONTENT

1. Anatomy and physiology of the digestive system.
2. Macronutrients: carbohydrates, lipids, and proteins.
3. Micronutrients: vitamins and minerals.
4. Reestablishing hydro-electrolytic balance: rehydration and thermoregulation in extreme heat and humidity.
5. Food analysis and food technology.
6. Sports endocrinology: hormone-nutrient-exercise interactions.
7. Exercise immunology.
8. Body composition analysis.
9. Nutrition and caloric expenditure interview.
10. Nutrition in special populations: cardiovascular and metabolic pathology.
11. Diets for gaining or losing weight.

12. Eating disorders in sportspeople: anorexia, bulimia, and muscle dysmorphia.

13. Natural ergogenic aids: action mechanisms, biological effects, and guidelines for prescribing nutritional supplements in sports.

## 5. LEARNING METHODOLOGIES

The types of teaching methodologies are listed below:

- Master Class
- Case Method
- Cooperative learning
- PBL

## 6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

| Learning activity | Number of hours |
|---|---|
| Fundamentals of human nutrition | 25 hours<br>10 self-directed |
| Nutrition, exercise and sports | 30 hours<br>15 self-directed |
| Nutrition in special populations | 10 hours<br>20 self-directed |
| Prescription and organization of diet | 35 hours<br>20 self-directed |
| Assessment of human body composition | 10 hours<br>15 self-directed |
| Ergogenic aids applied to sports and health | 40 hours<br>20 self-directed |
| **TOTAL** | **250 h** |

## 7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

| Assessment system | Weight |
|---|---|
| Activity 1. Multiple-choice exam | 25% |
| Activity 2. Group work on micronutrients and antioxidants. | 25% |

| | |
|---|---|
| Activity 3. Group work on planning a sportsperson's diet. | 25% |
| Activity 4. Individual work on types of diet. Vegan, etc. | 25% |
| Activity 5. Lab practice on body composition | PASS or FAIL |

When you access the course on the *Campus Virtual*, you'll find a description of the activities you have to complete, as well as the deadlines and assessment procedures for each one. All activity can be changed due to master´s needs.

### 7.1. First exam period

To pass the course in the first exam period, you must obtain a final course grade of at least 5 out of 10.

### 7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10. The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place.

## 8. SCHEDULE

This section indicates the schedule with delivery dates of evaluable activities of the subject:

| Assessable activity | Date |
|---|---|
| Assessable activity | January |
| Activity 1. Multiple-choice exam | January |
| Activity 2. Group work on micronutrients and antioxidants. | December |
| Activity 3. Group work on planning a sportsperson's diet. | December |
| Activity 4. Individual work on types of diet. Vegan, etc. | February |

This schedule may undergo modifications for logistical reasons of the activities. Any modification will be notified to the student in a timely manner.

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# 10. DIVERSITY ATTENTION UNIT

Students with specific educational support needs:

Adaptations or curricular adjustments for students with specific educational support needs, in order to guarantee equal opportunities, will be guided by the Diversity Attention Unit (UAD).

The issuance of a report of curricular adaptations / adjustments by said Unit will be essential, so students with specific educational support needs should contact through: unidad.diversidad@universidadeuropea.es at the beginning of each semester

# 11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Universidad Europea

Your assessment is necessary for us to improve.

Thank you very much for your participation.