1. OVERVIEW

Subject Area	Sports Nutrition
Degree	Bachelor's Degree in Human Nutrition and Dietetics
School/Faculty	Faculty of Biomedical Sciences
Year	3rd year
ECTS	3 ECTS
Type	Compulsory
Language(s)	Spanish
Delivery Mode	On-campus/blended
Semester	5th semester
Coordinating professor	Dr Clara Colina Coca

2. INTRODUCTION

'Sports Nutrition' (3 ECTS credits) is a compulsory subject area in Module 4 of Nutrition, Dietetics and Health Sciences (36 ECTS credits) within the Bachelor's Degree in Human Nutrition and Dietetics at Universidad Europea de Madrid (UEM).

It is delivered in the **3rd year** in the **5th semester** of the whole degree and has the following objectives:

- Study the interactions between exercise and the human body and understand how a proper diet supports them.
- Recognise and understand the role of the different nutrients in human metabolism in relation to exercise.
- Combine knowledge of nutritional needs with recommendations in order to suggest balanced diets for people who exercise, taking into account their personal anthropometric characteristics, the type of sport they do and the period of activity (before, during or after exercise).
- Determine the nutritional status of an athlete based on anthropometric, biochemical and dietary parameters.

3. SKILLS AND LEARNING OUTCOMES

Key Skills (CB, by the acronym in Spanish)

- **CB2**: Students can apply their knowledge to their work professionally and possess the necessary skills, usually demonstrated by forming and defending opinions, as well as resolving problems within their study area.
- **CB3**: Students have the ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.
- **CB4:** Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- **CB5**: Students have developed the learning skills necessary to undertake further study in a much more independent manner.

General Skills (CG, by the acronym in Spanish)

- **CG12**: Know about nutrients, their role in the body, bioavailability, requirements and recommendations, as well as the bases of energy and nutritional balance.
- **CG13**: Understand and assess the relationship between food and nutrition in situations of health and situations of illness.
- **CG15**: Design and implement protocols for assessing nutritional status, identifying nutritional risk factors.
- **CG16**: Interpret a nutritional diagnosis, assess the nutritional aspects of a patient's medical record and implement a diet plan.

Cross-curricular skills (CT, by the acronym in Spanish)

- **CT1:** Communication. Ability to engage in active listening, ask questions and respond in a clear and concise way, as well as to effectively express ideas and concepts. This includes concise and clear written communication.
- **CT2:** Leadership. Ability to offer ideas, approaches and interpretations through strategies which offer solutions to real-life problems.
- **CT3**: Teamwork. Ability to integrate and collaborate actively with other people, areas and organisations to reach common goals, evaluate and integrate contributions from the rest of the group members and create a good working environment.
- **CT6**: Problem solving. Ability to resolve an unclear or complex issue or situation which has no established solution and requires skill to reach a conclusion.
- **CT7**: Decision making. Ability to choose between different options or methods to effectively solve different problems or situations.
- **CT9**: Ability to put knowledge into practice, using the skills acquired in the classroom to mock situations based on real life experiences that occur in the relevant profession.

Specific Skills (CE, by the acronym in Spanish)

- **CE100**: Understand energy metabolism at rest and during exercise and the metabolic, cardiovascular, respiratory and hormonal responses to physical activity.

- **CE101**: Know about the use of nutrients during physical activity and how to improve sports performance.
- **CE134**: Be familiar with athletes' dietary habits and nutritional status.
- **CE136**: Understand the concept of ergogenic aids in sport and their different types: lipids and related substances, proteins, amino acids and other nitrogenous substances, vitamins and minerals.
- **CE137**: Know how to create special diet plans for athletes.

Learning Outcomes (RA, by the acronym in Spanish)

- **RA1**: Know the basis of the regulation and balance of energy and nutrition.
- **RA2:** Know how to perform a personal nutrition assessment and complete reports based on the assessment.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
• **CB2, CB3, CB4, CB5, CG12, CG13, CG15, CG16, CT1, CT2, CT3, CT6, CT7, CT9, CE100, CE101, CE134, CE136, CE137**	**RA1:** Know the basis of the regulation and balance of energy and nutrition.
• **CB2, CB3, CB4, CB5, CG12, CG13, CG15, CG16, CT1, CT2, CT3, CT6, CT7, CT9 , CE100, CE101, CE134, CE136, CE137**	**RA2:** Know how to perform a personal nutrition assessment and complete reports based on the assessment.

4. CONTENTS

The subject area 'Sports Nutrition' is divided into **2 learning units (UA, by the acronym in Spanish)**, which include a total of **12 topics** between them.

Below are the details of the topics contained in each learning unit, as well as the specific objectives to be met.

Unit 1. Biology of Physical Activity and Sports

- **Topic 1**. Introduction to sports nutrition. Conceptual foundations. Preliminary definitions. Historical background. Noteworthy scientific milestones.
- **Topic 2**. Theoretical principles of sports training. Recommendations of physical activity at different life stages.
- **Topic 3.** Human bioenergetics and exercise.
- **Topic 4.** Physiological responses and adaptations to exercise.
- **Topic 5.** Body composition assessment of athletes.

Unit 2. Nutrition for Health, Physical Condition and Sports

- **Topic 6**. Introduction to the athlete's diet.
- **Topic 7.** Carbohydrates and exercise.
- **Topic 8.** Proteins and exercise.
- **Topic 9**. Fats and exercise.

- **Topic 10**. Vitamins, minerals, antioxidants and exercise.
- **Topic 11.** Water and replenishing drinks in sports.
- **Topic 12.** Ergogenic aids in sports.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Lectures
- Collaborative learning
- Case studies
- Problem-based and project-based learning
- Learning based on workshops/labs

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Lectures	25
Independent working	13
Case studies	5
Group activities	5
Written reports and strategies	7
Workshops and/or lab work	9
Tutorials	9
Knowledge tests	2
TOTAL	**75 h**

Blended:

Type of learning activity	Number of hours
Reading of content	6
Online seminars	7
Independent working	25
Case studies	6
Group activities	5
Written reports and strategies	5

Workshops and/or lab work	9
Online tutorials	9
Knowledge test	3
TOTAL	**75**

7. ASSESSMENT

The assessment methods, together with their respective weighting towards the final grade for the subject, are as follows:

On campus:

Assessment method	Weighting
Knowledge test	40%
Laboratory work	20%
Submission of reports and essays	15%
Participation in debates	10%
Performance observation	15%
TOTAL	**100%**

Blended:

Assessment method	Weighting
Knowledge tests	40%
Laboratory work	20%
Submission of reports and essays	15%
Participation in debates	15%
Performance observation	10%
TOTAL	**100%**

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities, including the deadlines and assessment procedures for each activity.

8. BIBLIOGRAPHY

The reference works for this subject area are:

- **Antonio J *et al* (2008).** Essentials of Sports Nutrition and Supplements. *Humana Press.*
- **Bernadot D (2015)**. Manual ACSM de Nutrición para Ciencias del Ejercicio. *Editorial Wolters Kluwer.*
- **Burke L (2009).** Nutrición en el Deporte: Un enfoque práctico. *Editorial Médica Panamericana.*

- **Kreider R et al (2019)**. Principios del Ejercicio y Nutrición Deportiva: De la Ciencia a la Práctica. *Editorial RBK Consultations*.
- **McArdle WD, Katch FI & Katch VL (2009).** Sports and Exercise Nutrition (3th ed). *Lippincott Williams & Wilkins.*
- **Rawson ES, Anderson DE & Williams MH (2015).** Nutrición para la Salud, la Condición Física y el Deporte (2ª ed). *Editorial Paidotribo.*