1. OVERVIEW

Subject Area	Sports Nutrition and Food
Degree	Bachelor's Degree in Human Nutrition and Dietetics
School/Faculty	Faculty of Biomedical Sciences
Year	4th year
ECTS	6 ECTS
Type	Compulsory
Language(s)	Spanish
Delivery Mode	On campus and blended
Semester	7th semester
Coordinating professor	María Isabel Ramírez Goercke

2. INTRODUCTION

'Sports Nutrition and Food' (6 ECTS credits) is an optional 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 **4th year** in the **7th semester** of the whole degree and has the following objectives:

- Learn to calculate the nutritional requirements for a range of sporting activities.
- Know how to assess nutritional status in training, competition and recovery.
- Know about the ergogenic nutritional aids used in sports.
- Be familiar with different types of sports and the main nutritional considerations in relation to them.
- Identify unsuitable practice which could be harmful to health in order to correct or prevent such activity in different population groups.

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.
- **CG14**: Apply scientific knowledge of physiology, pathophysiology, nutrition and food to dietary planning and advice for individuals and groups of all ages, including both healthy and unwell people.

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.
- **CT4**: Adaptability. Ability to detect, interpret and respond to a changing environment. Ability to equip themselves and work effectively in different situations and/or with different groups or individuals. This means adapting to change depending on circumstances or needs. It involves the confidence to take on crucial challenges on a personal or group level, maintaining a good physical and mental health to allow work to be carried out effectively.
- **CT5**: Initiative. Ability to undertake difficult or risky actions with resolve.
- **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)

- **CE134**: Be familiar with athletes' dietary habits and nutritional status.
- **CE135**: Know the dietary recommendations for physical activity and sport: in extreme conditions.
- **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.
- **CE138**: Understand the physiological aspects of exercise and its adaptation according to age and gender.
- **CE139**: Know the concepts of: maximum energy consumption, homeostasis and acid-base balance, muscle efficiency and the kinetics of oxygen consumption during exercise.

Learning Outcomes (RA, by the acronym in Spanish)

- **RA1**: Calculate the nutritional requirements for a range of sporting activities.
- **RA2**: Assess nutritional status in training, competition and recovery.
- **RA3**: Prescribe the main ergogenic nutritional aids used in the field of sport.
- **RA4**: Know the specific characteristics of different sports and the main aspects of nutrition to take

into account with regard to such characteristics.

- **RA5**: Identify unsuitable practice which could be harmful to health in order to correct or prevent such activity in different population groups.

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, CG14** • **CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8, CT9** • **CE134, CE135, CE136, CE137, CE138, CE139**	**RA1:** Calculate the nutritional requirements for a range of sporting activities.
• **CB2, CB3, CB4, CB5** • **CG12, CG14** • **CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8, CT9** • **CE134, CE135, CE136, CE137, CE138, CE139**	**RA2:** Assess nutritional status in training, competition and recovery.
• **CB2, CB3, CB4, CB5** • **CG12, CG14** • **CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8, CT9** • **CE134, CE135, CE136, CE137, CE138, CE139**	**RA3:** Prescribe the main ergogenic nutritional aids used in the field of sport.
• **CB2, CB3, CB4, CB5** • **CG12, CG14** • **CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8, CT9** • **CE134, CE135, CE136, CE137, CE138, CE139**	**RA4:** Know the specific characteristics of different sports and the main aspects of utrition to take into account with regard to such characteristics.

4. CONTENTS

The subject area **'Sports Nutrition and Food'** is divided into **3 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.

Unit 1. Biological Assessment of Athletes

- **Topic 1.** Functional assessment of athletes.
- **Topic 2.** Haematological and biochemical assessment of athletes.

Unit 2. Sports Nutrition applied to Medicine and Human Performance

- **Topic 4.** Diet and exercise in Clinical Medicine.
- **Topic 5**. Sports nutrition with weight control. Differential characteristics. Planning. Nutrition strategies.
- **Topic 6**. Diet for strength and power sports. Differential characteristics. Planning. Nutrition strategies.
- **Topic 7**. Diet for resistance sports. Differential characteristics. Planning. Nutrition strategies.
- **Topic 8**. Diet for intermittent sports. Differential characteristics. Planning. Nutrition strategies.
- **Topic 9**. Diet for extreme sports. Differential characteristics. Planning. Nutrition strategies.

Unit 3. Interactions Between Nutrients, Genes, Hormones and Immunity in Sports

- **Topic 10.** Endocrinology of physical activity and sports.
- **Topic 11.** The immune system and immuno-nutrition in sports.

- **Topic 12.** Genetics, nutrition and 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
Lecture	48
Independent working	34
Case studies	10
Group activities	10
Written reports and strategies	10
Workshops and/or lab work	16
Tutorials	16
Knowledge test	6
TOTAL	**150 h**

Blended learning

Learning activity	Number of hours
Reading of content	21
Online seminars	26
Independent working	34
Case studies	10
Group activities	10
Written reports and strategies	10
Workshops and/or lab work	16
Online tutorials	17

Knowledge test	6
TOTAL	**150 h**

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 tests	40%
Workshops/lab work	20%
Submission of reports and essays	15%
Participation in debates	15%
Learning portfolio	10%
TOTAL	**100%**

Blended learning

Assessment method	Weighting
Knowledge tests	40%
Workshops/lab work	20%
Submission of reports and essays	15%
Participation in debates	15%
Learning portfolio	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.*