

## 29218 - Sport: Nutrition and Food

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 29218 - Sport: Nutrition and Food

**Faculty / School:** 229 - Facultad de Ciencias de la Salud y del Deporte

**Degree:** 441 - Degree in Human Nutrition and Dietetics

**ECTS:** 6.0

**Year:** 3

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, seminars, assignments, autonomous work and study, and exams.

#### 4.2.Learning tasks

This 6 ECTS course is organized as follows:

- **Lectures** (1.6 ECTS: 40 hours). Students are expected to participate actively in the class throughout the semester. Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.
- **Practice sessions** (0.52 ECTS: 13 hours).
- **Seminars** (0.24 ECTS: 6 hours).
- **Assignments** (0.4 ECTS: 10 hours).
- **Autonomous work and study** (3.08 ECTS: 77 hours).
- **Exams** (0.16 ECTS: 4 hours).

#### 4.3.Syllabus

This course will address the following topics:

## **Lectures**

### Section I: General

- Introduction to sports nutrition.
- Functional structure of the muscle. Types of muscle fibers.
- Mechanism of muscle contraction.
- Neuromuscular junction. Transmission of the nerve impulse to the muscle fiber.
- Biophysics of muscle contraction. Isotonic and isometric contraction.
- Muscle metabolism during physical exercise. Muscular fatigue.
- Free radicals, antioxidants, and physical exercise.

### Section II: Physiological adaptations to physical activity

- Hematological modifications in the athlete. Anemia of sport.
- Effect of physical activity on cardiovascular function.
- Respiratory adaptation to effort.
- Changes in renal function during physical activity and regulation of acid-base balance.
- Digestive function and physical exercise.
- Endocrine response to physical exercise.
- Thermoregulation during physical effort.
- Physiological adaptation to altitude and hyperbaria.
- Physical aptitude. Limiting factors in sports practice.

### Section III: Nutritional needs of the athlete

- Nutritional needs and physical exercise: energy macronutrients and fiber. Water and electrolytes. Vitamins, minerals, microelements and trace elements.
- Assessment of nutritional status in athletes.
- Determination of the energy expenditure of the athlete.
- Nutrition applied to endurance sports.
- Nutrition applied to strength sports.
- Planning the diet of the athlete.

### Section IV: Complementary aspects

- Ergogenic aids in sport.
- Physical activity and health promotion.
- Eating disorders in sports.

## **Practice sessions**

- Cardiovascular adaptations to physical activity and its application in sports nutrition.
- Indirect calorimetry as a tool to know the energy expenditure and the energy substrate used by the athlete
- Variation of glycemia during physical activity and its application in sports nutrition.
- Analysis and/or elaboration of different drinks for athletes.
- Anthropometric evaluations, knowledge of the somatotype and elaboration of a somatocarta.
- Dietary planning for team sports players: training diet.
- Dietary planning for the half marathon: diet and previous menu for the previous day, feeding and hydration. guidelines for the day of the test before and after it.

## **4.4.Course planning and calendar**

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Health and Sport Sciences website (<https://fccsyd.unizar.es/horarios-y-calendarios-nutricion>) and Moodle.

## **4.5.Bibliography and recommended resources**

[http://biblos.unizar.es/br/br\\_citas.php?codigo=29218&year=2019](http://biblos.unizar.es/br/br_citas.php?codigo=29218&year=2019)