

**Academic Year/course: 2022/23**

## **30824 - Public Health and Diet**

### **Syllabus Information**

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**Academic Year:** 2022/23

**Subject:** 30824 - Public Health and Diet

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 568 - Degree in Food Science and Technology

**ECTS:** 6.0

**Year:** 3

**Semester:** First semester

**Subject Type:** Compulsory

**Module:**

## **1. General information**

### **1.1. Aims of the course**

In the course Public Health and Diet, basic concepts on public health, nutritional epidemiology, and health planning, prevention and promotion are taught. Also, the effect of the diet on the most prevalent diseases is analyzed.

The objective is to train professionals who understand the importance of the dietary pattern on health; who are able to critically interpret and perform studies aimed at analyzing the association between the dietary pattern, from a general point of view, and the food composition, in particular, and communicable and non-communicable diseases; who are able to advise the industry and authorities in the design and implementation of actions or programs designed to achieve a healthy diet at a population level and, consequently, improve the health status.

The approaches and objectives of the course are aligned with the following Sustainable Development Goals (SDG) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the learning objectives of the subject provides training and competence to contribute to some extent to its achievement

Objetivo 2: Zero hunger.

Objetivo 3: Good health and well-being.

Objetivo 6: Clean water and sanitation.

Objetivo 10: Reduced inequalities.

Objetivo 12: Responsible consumption and production.

Objetivo 17: Partnerships for the goals.

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

The course is related to Mathematics, which is taught in the first semester of the first year and provides basic knowledge that facilitates the learning of the concepts on epidemiological methodology. The training that students acquire in the courses Microbiology and Food Microbiology is also important, with basic concepts that allow them to understand infectious diseases transmitted through food. The course Nutrition and Dietetics, taught in the second semester of the second year, provides training on nutrients and dietary patterns that facilitates the understanding of the health and disease phenomena that are presented in the course Public Health and Diet.

With regards to the course Public Health and Diet, it allows students to integrate the knowledge acquired on food composition and food safety with the health status of populations, enables them to carry out and critically interpret studies aimed at knowing the influence of diet in health, to obtain information available from different sources and to carry out health promotion activities from their future professional field. The practical content, especially that corresponding to nutritional epidemiology, provides them with knowledge and skills in handling data analysis tools that will be useful in carrying out the Final Degree Project and in subsequent studies. Likewise, the performance and oral presentation of group activities help students acquire the necessary skills for teamwork, both in other subjects and in their subsequent professional development.

### **1.3. Recommendations to take this course**

Having previously taken the scheduled basic courses is required to take this course, since it is considered useful for the student to have adequate knowledge in Mathematics, Physiology and Biochemistry. It is also necessary to have completed the courses of Food Chemistry and Biochemistry, Bromatology, Food Microbiology and Nutrition and Dietetics. This previous knowledge is necessary to be able to understand the methodological contents and those related to the study of the relationship between food and health.

## 2. Learning goals

### 2.1. Competences

#### Basic competences:

- That students have demonstrated acquisition and understanding of knowledge in an area of ??study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that they involve knowledge coming from the forefront of their field of study.
- That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of ??study.
- That students have the ability to gather and interpret relevant data (normally within their area of ??study) to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature.
- That students can transmit information, ideas, problems and solutions to both a specialized and non-specialized audience.
- That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

#### General competences:

- Manage information, search for sources, collection and analysis of information, etc.
- Use ITCs.
- Work in groups.
- Think and reason critically.
- Work autonomously and carry out a self-assessment.
- Respect the diversity and plurality of ideas, people and situations.
- Transmit information, orally and in writing, both in Spanish and in English.
- Show environmental sensitivity, assuming an ethical commitment.
- Negotiate both with specialists in the area and with people who are not experts in the field.
- Adapt to new situations and solve problems.
- Undertake and be motivated by quality.

#### Specific competences:

- Identify the physical, chemical and microbiological agents that cause food spoilage and select the most appropriate strategies for their prevention and control.
- Formulate new foods by choosing the ingredients and additives as well as the most appropriate treatments to obtain safe, healthy and attractive products for the consumer.
- Scientific and technical advice to the food industry.
- Communicate knowledge in food science and technology, using the fundamental concepts, methods and tools of this discipline.

### 2.2. Learning goals

1. - Define the Public Health concept and its areas of action, describe the determinants of the health status at a population level and analyze the consequences of food on health.
  - Summarize the main public health problems and their relationship with diet, identify the most prevalent health problems and use relevant sources of information in the field of public health and diet.
  - Identify the levels of responsibility of the health system in relation to food patterns.
2. - Understand the differences between the different types of studies in nutritional epidemiology and perform an epidemiological analysis with basic data.
  - Define, calculate and interpret the main indicators of the level of health: demographic indicators, mortality rates, measures of disease frequency.
  - Estimate and interpret the measures of frequency, association and impact in nutritional epidemiology studies and describe the investigation phases of an epidemic outbreak, applying them to the resolution of a practical case.
  - Carry out a critical reading of published works on diet and health problems and identify the most common errors in epidemiological studies (random errors and systematic errors) and discuss the validity of the results of epidemiological studies in the field of health and diet.
3. - Know and apply computer tools relevant to epidemiology: spreadsheets, online databases, freely available statistical and epidemiological analysis programs.
4. - Identify the phases of a health program related to diet. Discuss possible limitations, assess the evolution of food consumption in our country from the available sources and know the current health policies for the main health problems related to diet, including dietary recommendations and nutritional objectives.
5. - Analyze and synthesize the key messages of training materials on health promotion and diet.
6. - Identify the possibilities of preventing chronic diseases from diet and analyze the importance of infectious diseases

transmitted by food.

7. - Develop the ability to synthesize information and present it orally, through the oral presentation of a group work.

8. - Acquire the ability to read scientific documentation in English and use basic technical vocabulary in this language, reviewing study documentation and web pages of institutions whose information is in English.

### 2.3. Importance of learning goals

Passing the course Public Health and Diet implies the acquisition of the learning objectives indicated. This encourages the development of the basic and general skills of the degree, as well as the specific skills of the course, which contribute to the comprehensive training of future graduates in Food Science and Technology.

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

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

#### Type of tests

**Continuous assessment system.** The students opting for this system will have to perform a number of activities during the quatrimester:

-Test 1 (55%). Performing of an individual written test with short questions and problems, related to the theory and practice concepts of the course. Passing this test will mean the achievement of the 1, 2, 3, 4 and 6 learning objectives.

-Test 2 (20%). Elaboration and oral presentation of a work, in 4-6 students' groups, that will consist on the critical reading of a scientific article. This will allow the achievement of the 2, 7 and 8 learning objectives.

-Test 3 (25%). Carrying out of complementary activities: exercises related to the course concepts, discussions on topics about public health and diet, and online tests. Activities will be planned at the beginning of the course and their fulfilment will mean the achievement of the learning objectives 1, 2, 3, 4, 5, 6 and 8.

In order to pass the course by the continuous assessment system, the student will have to:

- Carry out and submit the proposed complementary activities, before the deadlines.
- Attend all the practice sessions during the course.
- Elaborate and present orally the group work corresponding to Test 2.
- Achieve a minimum grade of 5 in both the written test and the group work (a grade of 4 in one of the two tests can be counterbalanced if the grade in the rest of tests is equal or higher than 6).

The three tests will be convened and performed during the academic period.

**Final assessment system.** All students can opt for this system (i.e., those who do not opt for the continuous assessment system, those who fail that and those who want to improve their grade).

Assessment in the second call in each academic year will always be performed by the final assessment system.

- Test 1 (80%). Final written test with several essay questions and problems of epidemiology. Passing this test will mean the achievement of the 1, 2, 3, 4, 5, 6 and 8 learning objectives.

- Test 2 (20%). Elaboration of a group/individual work consisting on the critical reading of a scientific article. By means of this activity, the 2, 7 and 8 learning objectives will be achieved.

In order to pass the course by the final assessment system, the student will have to obtain a minimum grade of 5 in both tests.

The completion of the final exam and the delivery of the work will take place on the official date established in the exam calendar drawn up by the faculty.

#### Assessment criteria

**Test 1.** Individual written test with short questions and problems. The grade will be 0-10 and account for 55% or 80% of the final grade, depending on the chosen assessment system.

**Test 2.** Elaboration and presentation of a group/individual work based on the critical reading of a scientific article focused on diet and a public health problem. The grade will be 0-10 and account for 20% of the final grade.

**Test 3.** Participation in complementary activities. Only in the case of continuous assessment system, these activities will account for 25% of the final grade of the student in the course.

In the case of opting for the continuous assessment system, the grade achieved in tests 1 and 3 will be valid only in the first call, while the grade of test 2 will be kept until the second call. In the final assessment system, the grade of tests 1 and 2 will be saved until the second call.

**Grading system:** In accordance with the Regulation of Learning Assessment Standards of the University of Zaragoza (Governing Council Agreement of December 22, 2010), the results obtained by the student will be graded based on the following numerical scale of 0 a 10, with the expression of a decimal, to which its corresponding qualitative grade may be added: 0-4.9: Failed (SS). 5.0-6.9: Approved (AP). 7.0-8.9: Remarkable (NT). 9.0-10: Outstanding (SB). The "Honors" mention may be awarded to students who have obtained a grade equal to or greater than 9.0. Their number may not exceed five percent of the students enrolled in the corresponding academic year.

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

### 4.1. Methodological overview

The course is structured in 40 lectures/workshops and 20 hours of group practice sessions. During lectures, both the learning activities corresponding to the agenda of the course and the oral presentation of group works will be developed.

The practice sessions will take 4 hours They will delve into the practical application of theoretical concepts worked in the lectures.

Teaching materials for the course (teaching guideline, lecture notes, supporting materials, recommended bibliography, relevant webs, information about complementary activities, practices notebooks) will be available in the Anillo Digital Docente (ADD) of the University of Zaragoza.

Further information regarding the course will be provided on the first day of class

### 4.2. Learning tasks

**The course includes the following learning tasks:**

**Lectures/workshops:** (4 total ECTS of which 1,6 are face-to-face). 40 hours face-to-face. All contents blocks will be introduced by the professor through a brief exposition of the theory contents. Discussion of different graphics, articles, news and documentaries related to the topic will be held. Methods such as problem-based learning and a case study will be applied, to delve into the concepts worked. Voluntary student participation in activities involving reflection and/or search for information on the course will also be promoted. Some of these tasks will be solved in group.

**Practice sessions:** (2 total ECTS of which 0,8 are face-to face). 20 hours face-to-face. Sessions take place in the computer room. The 5 practice sessions that each student will carry out will be organized as follows: 4 hours for training in the search and consultation of information on diet and health by using web pages, scientific articles and reports, and materials on health promotion; 4 hours for performing the description of a health problem related to diet, integrating the information found in the previous practice session; 4 hours for nutritional epidemiology problems solving, by using simple data analysis tools; 4 hours for training and performing the critical reading of a scientific article; and 4 hours for solving a case study about an epidemic outbreak caused by a food. The lecturer will initially present all the steps and considerations to be followed during the proposed activities solving, will supervise the work made by each group during practice sessions and will offer the office hours that students need.

Risk prevention in practice sessions: There are no chemical, physical or biological risks related to the involvement of student in practice sessions.

### 4.3. Syllabus

**The course will address the following topics:**

Section 1: Introduction to public health and food 0,5 ECTS

Topic 1- The concept of health. Determinants of individual and collective health.

Topic 2- Historical evolution and the present concept of Public Health.

Topic 3- The main health problems and its relation with the diet.

Section 2: Methods in public health and food 1,8 ECTS

Topic 4- Measurement of the health level. Information systems and health indicators.

Topic 5- Nutritional epidemiology.

Topic 6- Systematic reviews and meta-analyses. Food recommendations based on evidence.

Topic 7- Population evaluation of food consumption.

Topic 8- Study of epidemiological outbreaks. Investigation and control measures.

Section 3: Planning and promotion of health in the field of food habits 0,8 ECTS

Topic 9- Planning and programming in the field of health and food. Policies on sustainable food systems.

Topic 10- Preventive activities and promotion of health. Educating for healthier diet habits.

Topic 11- Social marketing and food.

Section 4: Diet and health problems 0,7 ECTS

Topic 12- Nutritional and metabolic diseases with a higher prevalence in our society.

Topic 13- Diet and cardiovascular diseases.

Topic 14- Diet and cancer.

**Practice sessions:**

1. Consultation and critical assessment of scientific literature and web pages of interest in public health and food. 0,4 ECTS
2. Description of a public health problem related to diet, by synthesizing literature and information related to the topic. 0,4 ECTS
3. Development of health indicators and solving of problems of nutritional epidemiology. 0,4 ECTS
  - Measurement of the frequency of disease
  - Control of confounding factors
  - Descriptive epidemiological studies
  - Analytic epidemiological studies
4. Critical reading of a scientific article focused on the influence of diet in a public health problem. 0,4 ECTS
5. Case study of an epidemic outbreak caused by a food consumption. 0,4 ECTS

**4.4. Course planning and calendar**

The planning of the course is described in detail, along with those of the other courses in the third course in the Degree on CTA, on the website of the Faculty of Veterinary (link: <http://veterinaria.unizar.es/gradocta/>). This link will be updated at the beginning of each academic year.

Lectures begin in September and continue through January. They will be held in the hall of the Central Building assigned by the Centre.

The group's composition and schedule for practice classes will be coordinated by the Centre. They will take place in the computer room reserved.

Office hours will be previously agreed with the professor responsible for the course