# COURSE DATA

| Data Subject | |
|---|---|
| **Code** | 34091 |
| **Name** | Public Health |
| **Cycle** | Grade |
| **ECTS Credits** | 9.0 |
| **Academic year** | 2020 - 2021 |

**Study (s)**

| Degree | Center | Acad. year | Period |
|---|---|---|---|
| 1201 - Degree in Pharmacy | Faculty of Pharmacy and Food Sciences | 4 | Annual |
| 1211 - D.D. in Pharmacy-Human Nutrition and Dietetics | Faculty of Pharmacy and Food Sciences | 5 | Annual |

**Subject-matter**

| Degree | Subject-matter | Character |
|---|---|---|
| 1201 - Degree in Pharmacy | 25 - Public health | Obligatory |
| 1211 - D.D. in Pharmacy-Human Nutrition and Dietetics | 1 - Asignaturas obligatorias del PDG Farmacia-Nutrición Humana y Dietética | Obligatory |

**Coordination**

| Name | Department |
|---|---|
| MORALES SUAREZ-VARELA, MARIA MANUELA | 265 - Prev. Medicine, Public Health, Food Sc.,Toxic. and For. Med. |

# SUMMARY

Public Health in the Pharmacy Degree is a subject whose mission is to provide future graduates with sufficient knowledge to undertake their activity in the health prevention field of a population at the individual and group levels. Students will be introduced to the epidemiological method, to environmental knowledge and its relation with health, to knowledge on techniques that prevent chronic and transmissible diseases, to knowledge about the healthcare system at the international, European and Spanish levels, and to the techniques employed for population-based healthcare education.

# PREVIOUS KNOWLEDGE

## Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

## Other requirements

Having studied basic subjects (statistics, chemistry, biochemistry and physiology) is recommended, as well as the microbiology, immunology and parasitology course subjects. Having acquired basic knowledge of pharmacology and pharmaceutical knowledge is also recommended.

# OUTCOMES

## 1201 - Degree in Pharmacy

- Learn about the basic concepts of health and Public Health
- Acquire knowledge of the epidemiological and scientific method, pharmacoepidemiology, pharmacovigilance, clinical trials and studies of scientific evidence.
- Strategies for health promotion and disease prevention.
- Understand and assess the determinants of health.
- Knowing about the relationship between environment and health.
- Acquire the knowledge on the epidemiology and prevention of communicable and non-communicable diseases.
- To know the techniques and applications in the field of environmental health, sanitation and hygiene are primarily in the pharmaceutical industry.
- To Acquire knowledge about baking and the prevention of occupational hazards.
- Knowing the methods and means of health education.
- Knowledge about health programming.
- To Acquire knowledge about health care organization: Health Systems, International Public Health.

# LEARNING OUTCOMES

The results of learning must lead to:

1. Knowing the basic health and Public Health concepts.
2. Knowing and evaluating the determining factors of health.
3. Acquiring knowledge about the epidemiological and scientific method, pharmacoepidemiology, pharmacovigilance, clinical assays and studies of scientific evidence.
4. Knowing the healthcare education methods and means.
5. Knowing the relationship between the natural environment and health.
6. Knowing the techniques and applications in the field of environmental health, healthcare and

industrial hygiene field, basically in the pharmaceutical industry.
7. Strategies to promote health and disease prevention.
8. Acquiring knowledge about epidemiology and preventing transmissible and non-transmissible diseases.
9. Knowledge about healthcare scheduling.
10. Acquiring knowledge about planning and preventing occupational risks.
11. Healthcare organisation: Health Systems. International Public Health.

## DESCRIPTION OF CONTENTS

### 1. THE COURSE SUBJECT CONCEPT. THE EPIDEMIOLOGICAL METHOD

The historical evolution and current situation of Public Health and the basic sections it is made up of. Disease and health as ecological phenomena. Epidemiology. The epidemiologic method. Epidemiology and its uses. Descriptive epidemiology. Sources of health information. The healthcare Information System (S.I.S., in Spanish). Demography. Basic components. Sources of demographic information. Population calculations. Population movements. Studies into the Spanish population. Healthcare statistics. Methods. Averages and variations. Tendencies and correlations. Statistical samples and their types. Statistical graph representations. Group health measures. Health indicators. Analytical epidemiology. Types of analytical studies (case control studies). Cohort studies. Experimental epidemiology. Clinical assays. Community assays. Casuality in epidemiology. Biases in epidemiology.

### 2. PHARMACOVIGILANCE AND DRUG DEPENDENCY

Pharmacovigilance. Drug dependency. Healthcare and social aspects. Prevention guideline.

### 3. THE NATURAL ENVIRONMENT AND HEALTH

Ecology and human health. Assessing the environmental impact. Environmental health care and its importance today. Water as a hygiene factor. The physico-chemical and biological criteria of safe drinking water. Water supplies. Problems concerning waters for public consumption in the Autonomous Valencian Community. Wastewater. Problems concerning wastewater in the Autonomous Valencian Community. Solid urban waste. Problems concerning solid urban waste in the Autonomous Valencian Community. Industrial waste and its production and management. Industrial waste treatment plants. Atmospheric pollution and its importance in Public Health. Climate and atmospheric pollution. Macroecological effects of atmospheric pollution. Atmospheric pollution vigilance networks. Continental and marine water pollution. Urbanism and health. Authorisation, control and vigilance of grading activities. Environmental administrative organization.

## 4. FOOD AND HEALTH

Food and public health. Surveys about food and nutrition. Food hygiene. Health care control of food production and distribution.

## 5. PREVENTING TRANSMISSIBLE DISEASES

Epidemiology of transmissible diseases, their control and vigilance. Aerially transmissible diseases. Tuberculosis as a health problem. Diseases transmitted through contact. Tetanus. Epidemiology and preventing sexually transmitted diseases. Diseases transmitted through water and food. Diseases submitted to vaccination programmes: epidemiological and prevention aspects. The epidemiology of Human Immunodeficiency Syndrome. The epidemiology of zoonosis and of diseases transmitted through vectors. Hygiene, disinfection, fumigation and rodent control. Hospital infections.

## 6. PREVENTING CHRONIC DISEASES

Epidemiology and preventing cardiovascular diseases. The epidemiology of chronic lung pathology. Epidemiology and preventing cancer. Epidemiology and prevention of traumatisms. Epidemiology and preventing osteoarticular diseases. Epidemiology and preventing chronic kidney failure. Epidemiology and preventing alcohol-related problems. Public Health and smoking. Epidemiology and preventing diseases affecting the nervous system. Preventing metabolic and endocrine diseases: diabetes, endemic goiter and obesity. Preventing tooth decay and periodontopathies. Occupational health. Intervention forms.

## 7. PLANNING AND MANAGING HEALTH SERVICES

Main healthcare models. Comprehensive healthcare. Levels of healthcare. Planning healthcare. Organising healthcare in Spain and in the Autonomous Valencian Community. Organising hospitals. Health care organisation when faced with catastrophes or emergencies. Organising international healthcare. The World Health Organization (WHO) and other related organisations.

## 8. HEALTH CARE EDUCATION

Education towards health. The pharmacist as a health care teacher.

## WORKLOAD

| ACTIVITY | Hours | % To be attended |
|---|---|---|
| Theory classes | 60,00 | 100 |
| Seminars | 10,00 | 100 |
| Computer classroom practice | 10,00 | 100 |
| Tutorials | 4,00 | 100 |
| Preparing lectures | 125,00 | 0 |
| Preparation of practical classes and problem | 10,00 | 0 |
| **TOTAL** | **219,00** | |

## TEACHING METHODOLOGY

Teaching is based on the individual study of themes undertaken in theoretical classes, which is reinforced by computer practicals that mainly address knowledge of the computer tools and programmes used to create databases and their subsequent epidemiological analysis. Then there are classroom practicals that introduce students to studying the natural environment and its relation with health, where they learn how to set up healthcare vigilance systems, how to evaluate situations and how to interpret data.

Students will have tutorials for examining the most outstanding and up-to-date aspects of this subject in more detail, and for solving any doubts they have in a personalised manner, e.g.:

-Theoretical classes: the intention of these face-to-face classes is for the teacher to present the most important concepts and contents of each theme so that students can acquire knowledge about the subject according to the syllabus. All this will encourage student participation.

-Tutorials: students will have tutorials in small groups when the teacher will evaluate their learning process globally. Tutorials are also used to solve any doubts students may have in class, and to guide them in the most useful working methods to solve any problems that may arise when they study this subject. The teacher could pose questions and ask them about specific themes depending on the requirements students have to progress.

-Seminars: seminars will be used to encourage individual work and group work, and to improve oral presentations, by undertaking theoretical or practical works that complement the training acquired in class. Varied complementary activities will also be carried out (case studies, preparing scientific bibliographic searches, discussing up-to-date themes related with the subject).

-Practical classes in computer labs: these will be given in a computer room. These classes are practical and are given to help solve practical cases using computer systems. They are designed to consolidate theoretical knowledge when applied practically. The teacher will present the objectives, will explain how the material is handled, will supervise the work done and will help students interpret the results.

Contents scheduled in the practical computer sessions:

- Critically reading scientific articles using Public Health Information Databases.

- Evaluating epidemiological designs in different Public Health themes using scientific search engines.
- Practical case studies of epidemiological problems (descriptive and analytical): exploratory data analysis, graphical and numerical description of a variable, bivariate relationships, inferential analysis in a population, studies of the proportions and tests used.
- Evaluating diagnosis tests (sensitivity, specificity and predictive values).

## EVALUATION

The corresponding evaluation of the works done during seminars will represent 5% of the final mark, and attendance will be compulsory. Both work content and its presentation will be evaluated.

Participation in practical classes is compulsory, and will represent a maximum 5% of the final mark. The possibility of a Trainees Report will be contemplated.

The evaluation that corresponds to the works done during tutorials and participation in them will represent 5% of the final mark, and attendance is compulsory. All these aspects will be evaluated along with the final theoretical exams.

Attendance to and participation in the theoretical classes represent 5% of the final mark.

Knowledge acquirement will be evaluated by a written test of the theoretical-practical contents. To pass the first mid-term exam, it is necessary to obtain a written test mark that equals or is above 5.0. The mark obtained along with the theoretical exam of the second mid-term exam must comply with the same requirements, which will weight 80% of the final mark. It will be necessary to obtain 50% of the maximum mark in this written test to add up the evaluations that correspond to the seminar, practical classes and tutorials.

Should a student have carried out the activities of the subject and does not sit the final exam, he/she will be evaluated as so:

- “NOT PRESENT” (NP) for the FIRST announced exam date
- “PRESENT” for the SECOND announced exam date, with the corresponding mark.

## REFERENCES

### Basic

- Argimón JM, Jiménez J, Ed. Métodos de investigación clínica y epidemiológica. Barcelona: Harcourt, 2004.
- Fletcher RH, Fletcher SW, Wagner EH. Epidemiología Clínica. 2ª ed. Madrid: Elsevier-Masson, 2007.

- Hernández-Aguado I, Gil de Miguel A, Delgado-Rodríguez M, Bolumar-Montrull F. Manual de Epidemiología y Salud Pública para licenciaturas y diplomaturas en Ciencias de la salud. Madrid: Médica Panamericana, 2005.
- Sierra López A, Sáenz González MC, Fernández-Créhuet navajas J, Salleras Sanmartí L, Cueto Espinar A, Gestal Otero J, Domínguez Rojas V, Delgado Rodríguez M, Bolumar Montrull F, Herruzco Cabrera R, Serra Majem L. medicina Preventiva y Salud Pública. 11ª ed. Barcelona: Elsevier-Masson, 2008.
- Jenicek M, Clerooux R. Epidemiología. Principios- Técnicas Aplicaciones. Barcelona: Salvat S.A.
- Pineault R, Daveluy C. La planificación sanitaria. Conceptos, métodos y estrategias. Barcelona: Elsevier-Masson.

**Additional**

- Holgate ST, Samet JM, Koren H, Maynard RL. Air Pollution and Health. London: Academic Press.
- DiNardi SR. The Occupational Environment Its Evaluation and Control. Fairfax, VA: American Industrial Hygiene Association.
- Catalán la Fuente J, Ed. Manual técnico del agua. Zaragoza: Acribia.
- Metcalf- Eddy. Ingenieria Sanitaria. Tratamiento, evaluación y ventilación de aguas residuales. Labor, S.A.
- O.P.S. El control de las enfermedades transmisibles en el hombre. Washington: Organización Panamericana de la Salud.
- Laporte JR. Principios de epidemiología del medicamento. Barcelona: Salvat.

## ADDENDUM COVID-19

**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

### 1.Contenido

The contents included in the teaching guide are maintained

### 2.Volumen de trabajo

1. The weight of the different activities that add the hours of dedication in ECTS credits marked in the teaching guide of the 2019-2020 course is maintained.

2. 60 hours of theory classes that if possible will be taught in person. If the health situation so requires, these classes would be taught in a non-face-to-face mode. In this case, they would be taught through the Virtual Classroom on the days and hours established by the UV by synchronous videoconference and with the support of materials uploaded to the Virtual Classroom.

3. The 10 hours of seminar are kept face-to-face in small groups on the days and hours established by the UV.

4. The 10 hours of practical sessions in the computer classroom are maintained in face-to-face mode in small groups guaranteeing the necessary security measures, as far as possible. on the days and hours established by the UV.

5. The 4 hours of regulated tutorials are kept in person in small groups, guaranteeing the necessary security measures, as far as possible. on the days and hours established by the UV.

**3. Metodología docente**

The teaching methodology will include, as far as possible, the materials provided in the teaching guide of the 2019-2020 course for face-to-face teaching to which the methodologies listed below can be added according to the needs of the course and the assessment of the teaching staff :

1. Upload of materials to the Virtual Classroom

2. Proposal of activities for Virtual Classroom

3. BBC synchronous video conference

4. BBC Asynchronous Video Conference

5. Recorded transparencies

6. Discussions in the forum

7. Problems / exercises solved

8. Videos recorded in the laboratory

9. Work with simulators or calculation packages

10. Project development

11. Tutoring by videoconference

12. Forum in Virtual Classroom

## 4. Evaluación

For conducting exams (partial and final), and to ensure rigor and fairness in evaluations, we are always bound by ethical principles that we all understand. In these exceptional circumstances in which we are, students are asked to increase their ethical commitment to carry out the theoretical exam and other evaluable activities.

The theoretical evaluation will be carried out on the date and time scheduled and indicated by the center.

In addition, we ask that you take into account that the other scheduled activities (practices, seminars and tutorials), which by definition are evaluable, will be carried out according to the established schedule as far as possible in small groups, guaranteeing the necessary security measures. .

The final grade will be calculated based on the weighting of the following components: 60% theory, 15% practice, 15% seminar and 10% continuous assessment.

It is made explicit that, to make a grade, it is necessary to have obtained at least a 5 in the theoretical exam.

The Honor Registration will be the best grade higher than 9.0.

The evaluation of the different components is described below:

1. The theory will be evaluated by means of a 5-question theory test (free text answer exam) that will be developed in person if possible or through the Virtual Classroom if its administration is necessary in a non-face-to-face mode.

The questions will be asked by the tachers who have taught the subject in proportion to the teaching given and in the language taught.

In case the exam is carried out in person:

Those students with exceptional circumstances, (disability / functional diversity, death of a family member, working in the health system, not having adequate access to the internet, etc.) should notify the subject coordinator as soon as possible and always prior to the exam for assess possible alternatives.

Those students who have internet access problems through the use of a computer will be able to take the exam via mobile phone, having previously communicated this situation to the coordinator of the course.

2. The practices will be valued based on attendance, participation and the exercises delivered on time, answering the questions posed in the selected practices.

3. The seminars will be evaluated by attendance, participation and the work delivered on time, answering the questions posed in the selected seminars.

4. Continuous assessment activities include class attendance, tutoring and participation.

**5.Bibliografía**

The recommended bibliography is kept as it is accessible