

**COURSE DATA****Data Subject**

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|----------------------|---------------|
| Code | 34091 |
| Name | Public Health |
| Cycle | Grade |
| ECTS Credits | 9.0 |
| Academic year | 2021 - 2022 |

Study (s)

| Degree | Center | Acad. year | Period |
|--|---------------------------------------|-------------------|---------------|
| 1201 - Degree in Pharmacy | Faculty of Pharmacy and Food Sciences | 4 | Annual |
| 1211 - Double Degree in Pharmacy and 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 - Double Degree in Pharmacy and 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 Degree in Pharmacy is a subject whose mission is to provide the future graduate with sufficient knowledge for the development of their activity in the field of health promotion and disease prevention of the population at an individual and collective level. The student will be introduced to the epidemiological method, knowledge of the environment and its relationship with health, techniques for the prevention of chronic and communicable diseases and knowledge of the international, European and Spanish health system, as well as the techniques used for the health education of the population. The subject also works to implement the SDGs in teaching within the framework established by the UV.



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.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

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 (RD 1393/2007) // NO CONTENT (RD 822/2021)

Learning outcomes should lead to:

1. Know the basic concepts of health and Public Health.
2. Know and assess the determinants of health. Know the sex / gender differences in health indicators, incidence, prevalence and causality.



3. Acquire knowledge about the epidemiological and scientific method, pharmacoepidemiology, pharmacovigilance, clinical trials and scientific evidence studies.
4. Know the methods and means of health education.
5. Know the relationship between environment and health, such as the effects of climate change.
6. Know the techniques and applications in the field of environmental health, sanitation and sanitary and industrial hygiene, mainly in the pharmaceutical industry and its link with the objectives of sustainable development.
7. Strategies for promoting health and preventing disease as a whole and valuing the gender perspective and social inequalities
8. Acquire knowledge about epidemiology and prevention of communicable and non-communicable diseases.
9. Knowledge of health programming.
10. Acquire knowledge about planning and prevention of occupational hazards.
11. Health organization: Health Systems. International Public Health. Systems of health. International health and global health.

DESCRIPTION OF CONTENTS

1. THE COURSE SUBJECT CONCEPT. THE EPIDEMIOLOGICAL METHOD

Historical evolution and current situation of Public Health Fundamental sections that comprise it. Health and disease as ecological phenomenon. Epidemiology. The epidemiological method. Uses of epidemiology. Descriptive epidemiology. Health information sources. Health Information System (S.I.S.). Demography. Basic components. Sources of demographic information. Population calculations. Population movements. Studies of the Spanish population. Health statistics. Methods. Averages and variations. Trends and correlations. Statistical displays, their types. Representation of graphs. Community health measures. Health indicators. Analytical epidemiology. Types of analytical studies (case-control studies). Cohort studies. Experimental epidemiology. Clinical trials. Trials in the community. Causality in epidemiology. Biases in epidemiology. Evaluation of diagnostic tests. Health organization: health systems. International health and global health. Identification and monitoring of health inequalities. Content relationship with SDG 3 Health and well-being and SDG 10 Reduction of inequalities.

2. PHARMACOVIGILANCE AND DRUG DEPENDENCY

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



3. THE NATURAL ENVIRONMENT AND HEALTH

Ecology and human health. Environmental impact evaluation. Environmental health. Its current importance. Water as a hygienic factor. Physico-chemical and biological criteria for drinking water potability. Water supplies. Problems of water for public consumption in the Valencian Autonomous Community. Sewage water. The problem of wastewater in the Valencian Autonomous Community. Solid urban waste. The problem of solid waste in the Valencian Autonomous Community. Industrial waste. Production and management. Industrial waste treatment facilities. Pollution of the atmosphere. Its importance in Public Health. Climate and air pollution. Macroecological effects of air pollution. Surveillance networks for air pollution. Contamination of continental and marine waters. Urban planning and health. Authorization, control and surveillance of qualified activities. Administrative organization in the environment. The availability of water and its sustainable management and sanitation. Social Responsibility and Linkage with the SDGs (SDG 6 Clean water and sanitation) of environmental policies. Role of the pharmacist in this context.

4. FOOD AND HEALTH

Food and public health. Food and nutrition surveys. Food hygiene. Sanitary control in its production and distribution. Role of sustainable agriculture. Food security and improved nutrition. National and international food strategies linked to sustainable development. Content relationship with SDG 2 Zero hunger and SDG 3 Health and well-being.

5. PREVENTING TRANSMISSIBLE DISEASES

Communicable disease epidemiology. Its control and surveillance. Airborne diseases. Tuberculosis is a health problem. Contact transmitted diseases. Tetanus. Epidemiology and prevention of sexually transmitted diseases. Waterborne and foodborne diseases. Diseases subject to vaccination programs: epidemiological and preventive aspects. Human Immunodeficiency Syndrome Epidemiology. Epidemiology of zoonoses and vector-borne diseases. Sanitation and disinfection, disinsection and deratization. Hospital infections. Identification of health risks and guarantee of healthy life at all ages. Content relationship with SDG 3 Health and well-being.

6. PREVENTING CHRONIC DISEASES

Epidemiology and prevention of cardiovascular diseases. Epidemiology of chronic lung disease. Epidemiology and prevention of cancer. Epidemiology and prevention of injuries. Epidemiology and prevention of osteoarticular diseases. Epidemiology and prevention of chronic kidney failure. Epidemiology and prevention of alcohol-related problems. Public health and tobacco. Epidemiology and prevention of diseases of the Nervous System. Prevention of endocrine and metabolic diseases: Diabetes, nutritional deficiencies and Obesity. Prevention of tooth decay and periodontal disease. Occupational health. Forms of intervention. Identification of health risks and guarantee of healthy life at all ages. Forms of intervention. The intervention with a gender perspective. Content relationship with SDG 3 Health and well-being and SDG 5 Gender equality.



7. PLANNING AND MANAGING HEALTH SERVICES

Main healthcare models. Integrated healthcare. Levels of health care. Health planning. Health organization in Spain and in the Valencian Autonomous Community. Hospital organization. The health organization in catastrophic or emergency situations. International Health Organization. World Health Organization (WHO) and other related organizations. Global health. Strategies to reduce inequality within and between countries. Content relationship with SDG 10 Reduction of inequalities.

8. HEALTH CARE EDUCATION

Education for health. The pharmacist as a health educator. The role of the pharmacist in the consultation and intersectoral roundtables to address health problems in the community. Content relationship with SDG 3 Health and well-being, SDG 4 Quality education, SDG 11 Sustainable cities and communities and SDG 17 Partnerships to achieve the goals.

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 the topics developed in the theoretical classes reinforced by computer practices, aimed mainly at the knowledge of computer tools and programs that allow the creation of databases and their subsequent epidemiological analysis, and classroom practices in those that introduce the student to the study of the environment and its relationship with health, teaching them how to establish health surveillance systems, how situations are evaluated and data are interpreted.

The student will also have tutorials to delve into the most outstanding and current aspects of this subject and to solve doubts in a personalized way, specifically:

- Theoretical class: these are face-to-face classes aimed at the presentation by the teacher of the most important concepts and contents of each topic in order for the student to acquire knowledge related to the subject, according to the syllabus. Student participation will be enhanced.



- Tutorials: students will attend it in small groups. In them, the teacher will evaluate the learning process of the students in a globalized way, likewise, the tutorials will serve to solve all the doubts that may have arisen throughout the classes and will guide the students on the most useful working methods for the resolution of the problems that may arise in the study of this matter. The teacher will be able to raise specific questions and themes according to the needs of the students for their development.

- Seminar: the seminars will be used to promote individual and group work, as well as the improvement of oral presentation, by carrying out theoretical or practical work that complements the training that is acquired in the classes. Complementary activities of different types will also be carried out (case studies, preparation of scientific bibliographic searches, discussion of current issues related to the subject and related to sustainable development.

- Practical computer lab classes: They will be held in the computer room. These are practices related to solving practical cases through the use of computer systems. They are intended to consolidate theoretical knowledge, through the practical application of the same. The teacher will present the objectives, report on the handling of the material, supervise the performance of the work and help in the interpretation of the results.

The contents programmed in the computing practices:

- Critical reading of scientific articles using Public Health information bases.
- Evaluation of epidemiological designs in different Public Health issues using scientific search engines, assessing their design and gender approach, social perspective, economic inequalities ... in order to extrapolate the results to different populations / communities. Within the evaluation, their incorporation of the SDGs will also be assessed.
- Study of practical cases of epidemiology problems (descriptive and analytical): exploratory data analysis, graphic and numerical description of a variable, bivariate relationships, inferential analysis in a population, studies of proportions and tests used.
- Evaluation of diagnostic 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.
- Fernández-Crehuet Navajas J, Gestal Otero JJ, elgado Rodríguez M Bolúmar Montrull F Herruzo Cabrera R, Serra Majem L. Piédrola Gil: Medicina preventiva y salud pública. 12ª ed. Barcelona: Elsevier-Masson, 2015.
- 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. Ingeniería 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.
- Gómez López I. Desarrollo sostenible. Madrid: Editorial e-learning.

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 teachers 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.Bibliografia

The recommended bibliography is kept as it is accessible