COURSE DATA

Data Subject

Code	34458
Name	Epidemiology and preventative medicine
Cycle	Grade
ECTS Credits	4.5
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Faculty of Medicine and Odontology	2	First term

Subject-matter

Degree	Subject-matter	Character
1204 - Degree in Medicine	9 - Social medicine and communication skills	Obligatory

Coordination

Name	Department
CORELLA PIQUER, MARIA DOLORES	265 - Prev. Medicine, Public Health, Food Sc.,Toxic. and For. Med.

SUMMARY

In this subject, the theoretical and practical lessons are combined 50/50%. In the theoretical lessons (22 hours), the professor will teach the content, the methodologies and the techniques for the development of the knowledge and skills intended for the subject.

In the practical lessons (20 hours) both laboratory practices (4 practices) and practices in the computer room (6 practices) will be performed of each intended session.

Among the formative activities, practices about the subject descriptors, and which are detailed in the corresponding section, will be included.

Likewise, the subject includes practices to develop the ability to work and communicate through the new technologies of information and communication and bibliographical research.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

OUTCOMES

1204 - Degree in Medicine

- Recognise health determinants in population, such as genetic ones, dependent on sex, lifestyle, demographic, environmental, social, economic, psychological and cultural.

- Assume the role to play in preventive measures and protection against diseases, injuries or accidents, and the maintenance and promotion of health, both individually and in communities

- Obtain and use epidemiological data and evaluate tendencies and risks influencing health decision-making.

- Know how to use the sources of clinical and biomedical information available, and value them critically in order to obtain, organise, interpret and communicate scientific and sanitary information.

- Know how to use IT in clinical, therapeutic and preventive activities, and those of research.

- Be able to formulate hypothesis, gather information and evaluate it critically in order to solve problems by following the scientific method.

- Establish a good interpersonal communication which may allow professionals show empathy and talk to the patients efficiently,as well as to their relatives, the media and other professionals.

- Proper organisation and planning of the workload and timing in professional activities.

- Team-working skills and engaging with other people in the same line of work or different.

- Criticism and self-criticism skills.

- Capacity for communicating with professional circles from other domains.

- Acknowledge diversity and multiculturality.

- Consideration of ethics as a fundamental value in the professional practise.

- Working capacity to function in an international context.

- Knows the principles and applies methods of preventive medicine and public health.

- Knows how to evaluate risk factors and disease prevention. Recognises health determinants in population. Health indicators.

- Understands basic concepts of epidemiology and demographics.

- Knows the strategies which exist in health and environment, food safety and occupational health care

- Knows, evaluates and uses technology and sources of clinical and biomedical information to obtain, organise, interpret and communicate clinical, sanitary and scientific information.

- Knows key concepts of biostatistics and their application to medical sciences.

- Is able to design and elaborate simple statistic studies by using computer programming and interprets the results.

- Understands and interprets statistical data in medical literature.

- Is able to handle a personal computer with autonomy, uses searching and retrieval information systems, knows and handles clinical documentation procedures.

- Understands and interprets scientific texts critically.

- Knows the principles of the scientific method, biomedical research and clinical trial.

LEARNING OUTCOMES

Once the subject is finished the student must be able to:

- To know the determinants in the population health and the different actions that we could perform on them to prevent and protect them from the disease.
- To analyze critically the information that the epidemiological studies contain, which are made to carry out a research about a specific health problem.
- To calculate to obtain frequency measurements of disease-health, association and impact. To know how to interpret the results obtained.
- To detect and correct the main random and systematic mistakes in the epidemiological studies, as well as to evaluate their influence in the results and their practical application.
- To interpret the results of the meta-analysis and of the different measures that are used in the evaluation of diagnosis tests.
- To distinguish the different environment pollutants and to interpret the measurements performed by the different groups to take decisions about the appropriateness of the preventive or control measures. Health contaminant impact assessment.
- To collaborate in the prevention and control of communicable diseases through the knowledge of its transmission mechanisms and prevention and control strategies at a general and particular to those more relevant diseases.
- To collaborate in the prevention and control of the chronic diseases and accidents acting as a health educator about the lifestyles and environmental factors, as well as healthcare factors.
- To transmit the advantages of the healthy food and physical activity in the prevention and promotion of health in every stage of life
- To analyze chances and challenges set by new or changing situations in relation with the Preventive Medicine.

DESCRIPTION OF CONTENTS

1. THEORY

1. Introduction. Concept of Preventive Medicine and Public Health. Determinant concepts of health. Causality.
2. Frequency measurements: measurement of mortality and morbility.
3. Demography and public health. Static demography.
4. Demography and public health. Dynamic demography.
5. Sanitary information systems.
6. Ecologic studies. Cross-sectional studies.
7. Study of cases and controls.
8. Cohorts study.
9. Experimental studies.
10. Precision and validity.
11. Molecular epidemiology and genetic.
12. Meta-analysis.
13. Diagnostic tests valuation.
14. Communicable diseases. Epidemiological classification. Fundamental bases for their prevention and control.
15. Feeding and public health. Physical activity and health.
16. Ecology and human health. Environmental epidemiology. Environmental indicators. Environmental physical pollution.
17. Sanitary conditions of the drinking water.
18. Sanitary waste.
19. Atmospheric abiotic pollution. Study methodologies and prevention.
20. Epidemiology of the cardiovascular diseases. Risk factors. Prevention and control programs.
21. Cancer epidemiology. Risk factors. Prevention and control programs.
22. Oral health. Prevention and control diseases.

2. PRACTICES

There will be 20 hours of practices equivalent to 10 sessions of 2 hours. Practices in the computer room (6) and laboratory practices (4) will be combined according to their content and the need for spaces and instruments.

- I: Representation, calculation and comparison of basic demographic indicators.
- II: Computer tools and methodology to calculate and interpret the measures of frequency, association and impact in epidemiology. Importance of the gender perspective.
- III: Identification of the design and analysis of an epidemiological study. Ecological studies.
- IV: Interpretation and analysis of case-control and cohort studies.
- V: Genetic and molecular epidemiology studies.
- VI: Health education for groups and individual health education to promote healthy habits. Smoking.
- VII: Studies of epidemic outbreaks.
- VIII: Diet and taste perception. Identification of healthy life-style patterns.

- IX: Analysis and interpretation of environmental pollution data. Vaccines.
- X: Analysis of water quality. Data interpretation. Sustainable development goals.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	25,00	100
Computer classroom practice	12,00	100
Laboratory practices	8,00	100
Development of individual work	5,00	0
Study and independent work	37,50	0
Readings supplementary material	5,00	0
Preparation of practical classes and problem	10,00	0
Resolution of case studies	10,00	0
TOTAL	112,50	

TEACHING METHODOLOGY

The theoretical content will be taught through de oral master classes with the students promoting participation by asking some questions.

In the practical lessons, besides using a methodology based on learning by problem solving and real situations setting (laboratory practices), the student will use computer software which will help him/her to obtain some results that he/she must interpret according the theoretical knowledge acquired (computer practices). Group work will be promoted, which will allow the development of communication and oral expression skills coherently and logically.

EVALUATION

The assessment of the subject will be made through a written test that will include the theoretical and practical assessment. The mark will be joint and additive with the following considerations:

Theoretical assessment: 60% of the final mark. It will be made by written test consisting of short questions that will be about the content on the theoretical program and it will have as the main goal to assess the acquisition of knowledge. The content of the test will be the same for each group of the same subject.

Practical assessment: 40% of the final mark. It will be made by a written test consisting on short answers and problem solving about the content of the practices assessing the practical aspects of the acquisition of abilities related with the general and specific competencies.

Theory and practices will not be assessed separately.

Attendance to practical sessions is mandatory. Unjustified non-attendance to more than 20% of the sessions will make it impossible to pass the course.

Students are reminded of the importance of carrying out evaluation surveys on all the teaching staff of the degree subjects.

REFERENCES

Basic

- Argimón Pallas JM, Jiménez Villa J. Métodos de investigación clínica y epidemiológica. 4ª edición. Barcelona Elsevier, 2013.

- Celentano D & Szklo M. Gordis. Epidemiología. 6ª edición. Elsevier. España. 2019.

- Fernández-Créhuet Navajas J, Gestal Otero J, Domínguez Rojas V, Delgado Rodríguez M, Bolumar Montrull F, Herruzo Cabrera R, Serra Majem L, Rodríguez Artalejo F (dirs.). Medicina Preventiva y Salud pública. 12ª ed. Barcelona: Elsevier-Masson, 2016.

- Hernández-Aguado I, Lumbreas-Lacarra B. Manual de Epidemiología y Salud Pública para grados en ciencias de la Salud. 3ª edición. Madrid: Medica Panamericana, 2018.

- Malagón-Londoño, G.; Reynales- Londoño, J. Salud pública: conceptos, aplicaciones y desafíos. 3ª Edición. Medica Panamericana: Bogotá, Madrid, 2020; ISBN 9789588443805.

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