

**COURSE DATA****DATA SUBJECT**

Code: 34458
Name: Epidemiology and preventative medicine
Cycle: Undergraduate Studies
ECTS Credits: 4.5
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Facultat de Medicina i Odontologia	2	First quarter

SUBJECT-MATTER

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

COORDINATION

CORELLA PIQUER MARIA DOLORES

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

COMPETENCES / LEARNING OUTCOMES

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Acknowledge diversity and multiculturality.

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

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

Capacity for communicating with professional circles from other domains.

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

Criticism and self-criticism skills.

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.

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

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

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

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.

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

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

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

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

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

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



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

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

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

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

Understands and interprets scientific texts critically.

Understands and interprets statistical data in medical literature.

Understands basic concepts of epidemiology and demographics.

Working capacity to function in an international context.

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 morbidity.
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

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	25,00
Laboratory	8,00
Computer classroom practice	12,00
Total hours	45,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	5,00
Independent study and work	42,50
Preparation of lessons	10,00
Preparation for assessment activities	0,00
Resolution of case studies	10,00
Total hours	67,50

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.

The gender perspective, the respect for diversity, and the sustainable development goals (SDGs) will be incorporated into teaching, whenever possible.

EVALUATION

The evaluation of the subject will be carried out through a written test with 8 short questions that will contain the theoretical and practical evaluation. The score will be joint and additive with the following considerations:

Theoretical evaluation: 60% of the final score. It will be carried out through a written test consisting of short questions that will deal with the contents of the theoretical program and will aim to evaluate the knowledge acquisition. The content of the test will be the same for all groups of the same subject.

Practical evaluation: 40% of the final score. It will be carried out through a written test consisting of short questions and problem solving of the content of the practices, evaluating the practical aspects of the acquisition of skills related to general and specific competences.

Theory and practices will not be valued separately.

Attendance at practical activities is mandatory. The student is considered to meet this requirement if he or she has attended a minimum of 80% of these activities and has adequately justified the impossibility of attending the remaining sessions due to the occurrence of a cause of force majeure. It will be essential to comply with this requirement to pass the subject.

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

REFERENCES

- 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.
- Recursos e-Salut: ClinicalKey Student Medicina, Odontologia y Enfermería [<https://uv-es.libguides.com/RecursosSalut>] Acces Medicina [https://uv-es.libguides.com/Access_Medicina] Médica Panamericana [https://uv-es.libguides.com/Medica_Panamericana]