COURSE DATA

DATA SUBJECT

Code: 42597
Name: Medicine and clinical testing
Cycle: Master's Degree
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2116 - Master's Degree in Bioinformatics	Escola Tècnica Superior d'Enginyeria	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2116 - Master's Degree in Bioinformatics	Medicine and clinical testing	ELECTIVES

COORDINATION

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CALVO SAIZ CONRADO JAVIER

SUMMARY

The objective is to understand the doctor or pharmacist entitled not the general organization of the human body and its operating mechanisms and control basic pathophysiological processes then know the process of diagnosing a disease that is still in medicine, as data is generated as have access to them, and their advantages and limitations. This will explain the general concepts of health and disease, and diagnostic processes are established, the variety of additional tests that are used, and the basis of treatment.

In a second aspect will analyze the different methodologies used for the application of scientific method to medical 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

Is recommended prior review of materials previously studied Biology at least at the undergraduate level.

COMPETENCES / LEARNING OUTCOMES

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Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

DESCRIPTION OF CONTENTS

1. General concepts. Disease and syndrome

Concept of Health and Disease. Scales of physical capacity and quality of life. General nomenclature of the diferent aspects of the disease process.

2. Introduction to medicine (i). Anamnesis

Introduction to the diagnòstic processes of the disease. Evalaution of subjetive data and objetive

3. Introduction to medicine (ii). Diagnostic tests

General description of diagnòstic tests. Sensibility, especificity, predictive vàlues (postive and negative). Introduction to the evaluation of Health tecnologies

4. Clinic history. Electronic Registry of Health. Telemedicine and guides for automàtic decission of patients

New thecnologies in storra processes and handling of Medical information. Electronic registries of Health.
Telemonitorization: their role in the follow-up of crònic-degenerative diseases
new technologies for the resolution of Medical problems.
Patient Guided Systems

5. Nombre de la U.T. (English): Introduction to medicine (iii). Basic Pharmacology. Treatments , types and exemples.

General concepts in Pharmacology.
Eficacy and pharmacological toxicity.
New ways in the development and safe and useful use of drugs.
Pharmacogenomics

6. Introduction to medicine (iv). Preventive medicine. Pupulation Studies . Cohorts. Types of studies

Preventive medicine
Utilization of epidemiology in the advances of medicine
Stuides of total population
Types of epidemiological studies

7. Introduction to medicine (v). Clinical assays. Types Ethics commitee. Legal considerations

Types of clinical assays and their role in the development of new terapeutcial interventions. Legal framework. Ethics of the clinical assays. Evidence based medicine.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	30,00
Total hours	**30,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	8,00

Individual or group project	4,00
Independent study and work	78,00
Preparation of lessons	0,00
Preparation for assessment activities	12,00
Resolution of case studies	20,00
Total hours	**122,00**

TEACHING METHODOLOGY

MD1 - Task training of the teaching-learning environment interaction in the classroom through expository sessions. Previous assignments include preparation (information search, reading texts supplied by teachers), teaching sessions themselves and the later work of deepening.

MD2 - Learning through problem solving and case studies, through which it is acquiring skills on different aspects of materials and subjects.

MD4 - Cross-disciplinary skills. Include attendance at courses, conferences or round tables organized by the CEC of the Master and / or conduct of a bibliographic work on issues that contribute to the integral. It produces a reportonactivities

EVALUATION

SE1 Continuous Assessment: 50%

SE3 Activities: practical work, 50%

REFERENCES

1) Harrison's Principles of Internal Medicine. J. Larry Jameson, Anthony Fauci, Dennis Kasper, Stephen Hauser, Dan Longo, Joseph Loscalzo. 20ª Edición (2018).
2) Foundations of Clinical Research: Applications to Practice. Leslie Portney, Mary P. Watkins 3ª Edición (2009).
3) Guyton & Hall. Tratado de fisiología médica. 14ª Edición (2021).