

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

Code: 44772
Name: Medical principles
Cycle: Master's Degree
ECTS Credits: 4.5
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2231 - Master's Degree in Biomedical Engineering	Facultat de Medicina i Odontologia	1	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2231 - Master's Degree in Biomedical Engineering	Bridging courses	ELECTIVES

COORDINATION

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SUMMARY

The subject of Medical Fundamentals is a subject that is taught in the course of complements of the Master in Biomedical Engineering. It consists of three units run by three departments (Department of Pediatrics and Gynecology, Department of Medicine and Department of Surgery). This course deals with the basic concepts of medical terminology and the characteristics of the main syndromes and pathological processes, the bases on which clinical diagnosis is based and the usefulness of complementary diagnostic techniques specific to diseases, as well as the general principles of the medical-surgical treatment of diseases.

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****DESCRIPTION OF CONTENTS****1. INTRODUCTION TO HEALTH SCIENCES**

Lesson 1. Illness, Health, Aging and Death.

Lesson 2. Systematic review in health sciences.

Lesson 3. Laboratory techniques in health sciences. Genetic pathologies.

2. Surgical Foundations.

Lesson 4. Fundamentals in General and Digestive Surgery.

Lesson 5. Fundamentals in Ophthalmology.

Lesson 6. Fundamentals in Neurosurgery.

Lesson 7. Fundamentals in Otolaryngology.

3. Medical Fundamentals

Lesson 8. Medical fundamentals in Pediatric pathology.

Lesson 9. Medical fundamentals in Gynecological pathology.

Lesson 10. Medical fundamentals in Cardiovascular pathology.

Lesson 11. Medical fundamentals in Pulmonary pathology.

Lesson 12. Medical fundamentals in Immunological pathology.

Lesson 13. Medical fundamentals in Oncological pathology.

Lesson 14. Medical fundamentals in Digestive pathology.

Lesson 15. Medical fundamentals in Endocrine pathology.

Lesson 16. Medical fundamentals in Neurological pathology.

Lesson 17. Medical fundamentals in Psychiatric pathology.

Lesson 18. Medical fundamentals in Renal pathology.

Lesson 19. Medical fundamentals in Osteoarticular pathology.

WORKLOAD**PRESENCIAL ACTIVITIES**

Activity	Hours
Theory	45,00
Total hours	45,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
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Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	15,00
Preparation of lessons	20,00
Preparation for assessment activities	20,00
Resolution of case studies	2,50
Total hours	67,50

TEACHING METHODOLOGY

The subject has a theoretical and a practical part.

A. During the **theoretical sessions** a teaching-learning methodology based on the participatory master class will be used, with the following scheme:

1. Autonomous work through a comprehensive reading of the topic.
2. Quick questions on basic concepts of the theme (Aula virtual application).
3. Use of audiovisual material to study patients with different neuropathologies.

At the end of each Lesson, a self-assessment and feedback test will be carried out, using an objective test of multiple responses (Aula virtual application).

B. During the **practice sessions**, a teaching-learning methodology based on "cases and simulations" will be used. Attendance to practical sessions is mandatory.

EVALUATION

Minimum requirements

- Achieve 50% of the maximum mark of the theoretical exam.
- Achieve 50% of the maximum mark of the Final Project (FP).



Evaluation

1- Theoretical exam (50% of the global mark of the subject). It will consist of a recoverable test in second call. It is an objective theoretical test by means of multiple-choice questions with four possible answers and a single valid answer. This part of the test is considered surpassed with 50% of correct answers.

2- FP evaluation (50% of the overall grade of the subject). Oral Exposure from one of the revised diagnostic and / or therapeutic techniques. 9 minutes of exposure and 5 minutes of questions.

REFERENCES

- Referencia b1: Pérez Arellano, J. Manual de Patología General Sisinio de Castro. 6ª ed. Barcelona: Masson, 2006 Referencia b2: Kasper, Fauci, Hauser, Longo, Jameson y Loscalzo. Harrison principios de medicina interna. Volumen 1. 19ª ed. McGraw-Hill Interamericana Editores, S.A. de C.V. 2015 Referencia b3: Texto referencia
- Referencia c1: Referencia c2: Referencia c3: Referencia c4: Texto referencia Referencia c5: Texto referencia