COURSE DATA

DATA SUBJECT

Code: 34481
Name: Pathology of the respiratory system
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Facultat de Medicina i Odontologia	4	Second quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1204 - Degree in Medicine	Human clinical training III	COMPULSORY

COORDINATION

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SUMMARY

The general objectives are: to train professionals in the area of the respiratory system, with theoretical and practical knowledge, attitudes and skills that make the student capable to solve and guide the medical and surgical situations of the respiratory pathology. Thus, theoretical lessons, seminars, skills classroom practices and clinical practices will be used in order to boost the practical aspects of the teaching.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

To course this subject, it is advisable to have passed the subject General pathology and semiology.

COMPETENCES / LEARNING OUTCOMES

1204 - Degree in Medicine

Acknowledge diversity and multiculturality.

Acquire properclinical experience in hospitals, health care centres and other health institutions, under supervision, as well as basic knowledge of clinical management focused on the patient and the correct use of tests, medicines and other resources available in the health care system.

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 the diagnosis, prognosis and treatment, applying principles based on the bestinformation available and on conditions of clinical safety.

Have the capacity to make an initial diagnosis and establish a reasonable strategy of diagnosis.

Indicate the most accurate therapy in acute and chronic processes prevailing, as well as for terminally ill patients.

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 how to evaluate modifications in clinical parameters at different ages.

Knows how to perform a complete anamnesis, focused on the patient and orientated to various pathologies, interpreting its meaning.

Obtain and elaborate a clinical history withrelevant information.

Perform a physical examination and a mental health assessment.

Plan and propose appropriate preventive measures for each clinical situation.

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

Recognises, diagnoses, and guides the management of the pathologies affecting the respiratory system.

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

Understand the importance and the limitations of scientific thinking in the study, prevention and management of diseases.

Working capacity to function in an international context.

DESCRIPTION OF CONTENTS

1. Respiratory failure. General concepts.

To know clearly the concept of respiratory insufficiency.
To know the production and classification nechanisms.
To describe the effects of respiratory failure.
To know how to diagnosis of respiratory failure is done.
To know the general treatment focused on the respiratory failure.

2. Respiratory failure: types and characteristics.

To know the concept and types of global respiratory insufficiency.
Extrapulmonary or with normal lungs.
With pathological lungs.

To know the concept and types of partial respiratory failure.
In chronic respiratory disease.
In acute localized lung diseases.
In acute diffuse lung diseases.

3. Syndrome of sleep apnea.

To know the physiological respiratory changes that occur during sleep.
Describe the concept of central apnea during sleep; its production mechanism and clinical situations in which occurs.
Describe the concept of obstructive sleep apnea, prevalence and clinical importance, mechanism of production, diagnosis and treatment.

4. Asthma. Concept, pathogenesis, physiopathology and forms of presentation.

Pathogenesis of asthma.
Forms of presentation.

5. Asthma. Clinical and therapeutical management.

Diagnostic methods and criterio.

Treatment of the stable situation and exarcebations.

6. Chronic obstructive pulmonary disease. Concept, pathogenesis, physiopathology and forms of presentation.

Pathogenesis of chronic obstructive pulmonary disease.
Forms of presentation.
Importance of smoking.
Pathophysiology of the disease.

7. Chronic obstructive pulmonary disease. Clinical and therapeutical management.

Pharmacological, rehabilitation.
Treatment of exacerbation and stable situation.

8. Bronchiectasis and cystic fibrosis.

To know the definition and types of bronchiectasis.
To know the specific causes of bronchiectasis.
To know the treatment, with special emphasis on physical therapy and the use of antibiotics.
To know the genetic, pathogenesis, diagnosis and treatment of the cystic fibrosis.

9. Smoking.

To identify smoking as a disease, one of the main ones in developed countries.
To know the epidemiology of smoking.
To know the health and non-health consequences of tobacco consumption.
To know the consequences of passive smoking, both before birth, in childhood and in adulthood.
To know the process of diagnosing smoking. Consumption intensity, motivation, phase and dependence on nicotine.
To know the pharmacological and non-pharmacological treatment of smoking. Its indications, contraindications and potential side effects.
To know the regional, national and international strategies for smoking prevention

10. Pneumonia. Clinical management and treatment.

To know the concept of pneumonia and its epidemiological significance.
To know the pathogenesis of pneumonia.

To know the types of pneumonia.
To know the clinical management of patients with pneumonia.
To know the treatment guidelines according to the type of pneumonia

11. Pulmonary tuberculosis.

To know the etiology of the tuberculosis.
Epidemiology.
Natural history of the disease.
Pathogenesis.
Clinical manifestations, diagnosis and treatment.

12. Pleural effusion.

To know the concept of pleural effusion.
Types and characteristics.
Diagnostic approach.
Techniques.
To know the most common pleural effusions.

13. Pathology of the pulmonary circulation.

To know the concept of pulmonary hypertension, its types and its pathogenesis.
To describe the Pulmonary Arterial Hypertension (PAH) and that associated with other pathologies.
To known the treatment possibilities.

14. Venous thromboembolic pulmonary disease.

To know the concept of the deep vein thrombosis: its pathogenesis, diagnostic methods, prevention and treatment.
To know the concept and the clinical importance pulmonary embolism.
To describe the diagnosis of acute pulmonary embolism diagnosis. Clinic and complementary techniques. Decision trees. Commentaries according the resources availability.
To know the possibilities and indications for treatment.

15. Interstitial pathology. Pulmonary fibrosis. Sarcoidosis.

To explain the concept of diffuse instersticial disease or pulmonary fibrosis.
To know the classification of this group of diseases.
Diagnostic procedures and types.
Symptoms and treatment of sarcoidosis.

16. Occupational lung diseases. Hypersensitivity pneumonitis.

To know the characteristics of occupational diseases: Importance of exposure measurement.
To know the clinical, functional and radiological study.
To know the main occupational diseases.
To know the diagnosis and treatment of hypersensitivity pneumonitis and pulmonary eosinophilia

17. Lung transplantation.

To know the main indications for lung transplantation and when candidates should be referred to the transplant unit.
Management of basic immunosuppression
To know the most frequent complications: comorbidities and infections

18. Pleura surgical pathology.

To specify the role of the thoracoscopy in the diagnosis of pleural effusions of unknown etiology.
Describe the concept, bases and indications of the pleurodesis in the metastatic pleural effusions.
Define the concept of pleural empyema.
Delineate the diagnostic system in the pleural empyema, with special reference to the biochemical analysis of the pleural fluid.
Determine the indications for pleural drainage in the treatment of the pleural empyema, as well as the current criteria for indicating endopleural fibrinolysis and the surgical treatment.
Define the concept of chylothorax, pointing out he diagnostic criteria.
List of its main causes.
Point out various therapeutic options and their application according to the evolution of the chylothorax.
Indicate the relative frequency of the primitive pleural tumours in relation to metastatic tumors.
Differentiate the histopathological characteristics of the different pleural tumours.
Describe the clinical and radiological peculiarities that allow us to suspect the diagnosis of localized pleural mesotheliomas.
Name the etiological factors of malignant mesothelioma.
Describe its symptoms and radiological signs.
Refer pleural mesotheliomas to diagnostic and therapeutic alternatives.

19. Lung cancer.

Describe the epidemiology, etiology, clinic, diagnosis staging and surgical indications of the bronchogenic carcinoma (BC).
Justify the importance of the BC study using current epidemiological data.
Establish the relationship between tobacco and BC.
List other modifiable and non-modifiable BC risk factors
Name the most important histological types of BC and point out their most important clinical characteristics.

Refer to the symptoms and signs that can cause BC, both due to its local extension and its metastasis or paraneoplastic manifestations.
Plan the diagnostic protocol of a patient with clinical suspicion of BC.
Distinguish between resectability and operability pointing out the criteria for one and another.
Perform a TNM staging and decide, based on it, a therapeutic attitude.
Define the therapeutic strategy in the undifferentiated small cells carcinoma.
Establish the prognosis of a BC based on the evolutionary stage.
Describe the technical bases of the BC surgical treatment.

20. Pneumothorax.

To define the concept of pneumothorax.
List different etiological types of pneumothorax.
State the concept of primary spontaneous pneumothorax.
Know the physiopathology of the spontaneous pneumothorax.
Apply a systematic clínical study and diagnosis in spontaneous pneumothorax.
Know how to evaluate a chest X-ray.
Decide the treatment to apply in pneumothorax, with special emphasis in primary spontaneous pneumothorax pointing out the indications for pleural drainage and surgery.
Know the treatment and surgical indications in the secondary spontaneous pneumothorax.
To explain the technical bases of surgical treatment for pneumothorax.
Be able to do a clinical study and diagnosis of the emphysema from a surgical point of view. Specify the surgical indications and contraindications for the pulmonary emphysema and describe the technical bases of its treatment.

21. Surgical pathology of the thoracic wall.

Define the concept of pectus excavatum and pectus carinatum, pointing out its etiological hypothesis. Define their surgical indications and outline the different technical options and the bases for their correction.
Point out the anatomoclinical characteristics, diagnostic and treatment of the thoracic outlet syndrome.
Classify chest wall tumours according their origin and histological type, taking into account those of great clinical importance.
Describe the clinical manifestations and diagnostic protocol in chest wall tumors.
Decide the treatment of chest wall tumors based in its origin, histological type and degree of evolution.
Summarize other less common chest wall disorders.

22. Benign tumours and pulmonary metastasis.

Describe the anatomopathological classification of the benign lung tumours.
To know the clinical characteristics of the most frequent benign tumours, the carcinoid tumour.
Understand the role of the surgery in the overall treatment of the metastatic cancer.
To know the types of surgery used, according their size, extension and options for dissection and complete resection.

Define the concept of solitary pulmonary nodule and its difference single metastasis.
Identify a solitary pulmonary nodule in a plain chest X-ray and list the characteristics of probable benignity and malignancy.
Describe the theoretical foundations on which the surgery of pulmonary metastases is based.
Point out its limits, contraindications and factors of good and bad prognosis.
To know the technical bases of suyrgery for lung metastases.

23. Chest trauma.

To justify the importance of chest traumatisms in the group of traumas.
Determine the sequence of priorities of the politrauma who suffer severe thoracic trauma.
Describe the pathophysiological factors that influence its severity.
Distinguish through clinical manifestations and simple chest X-ray those thoracic traumas that are serious and require immediate action.
Recognize rib fractures clinically and radiologically, analyzing their clinical implications.
Define the concept of paradoxical breathing (volet), delimiting its anatomical and pathophysiological bases.
Recognize clinically and radiologically the concepts of pulmonary contusion and pleural occupation syndrome of traumatic origin.
Describe the clinical and radiological picture of a diaphragmatic rupture and a rupture of the airway.
List those conditions of traumatic origin that require pleural drainage.
Specify the diagnostic and therapeutic importance of the pleural drainage in thoracic trauma.
Outline the different therapeutic alternatives in the thoracic trauma, highlighting the medical ones.
Reasonable define treatment guidelines and techniques to be used in the initial resuscitation of a patient with a serious chest trauma.
To know the indications of the surgical treatment in the thoracic trauma.

24. Seminar practices

Pneumology Area

- Bases for the functional diagnosis of the respiratory pathology: interpretation of respiratory function tests.
- Bases for the study of the alterations of the gas exchange: interpretation of blood gas and acid-base balance.
- Radiological diagnosis of the respiratory pathology I: bases of radiological diagnosis of the respiratory pathology.
- Radiological diagnosis of the respiratory pathology II: presentation of chest radiology cases.
- Clinical cases of respiratory pathology of teaching interest presented by the students.
- Clinical anatomy session: presentation by the students of several clinical anatomy cases.
- Mechanical ventilation/oxygen therapy workshop: management of the oxygen therapy and noninvasive ventilation systems.

- Scientific day. A session structured as a scientific day will be held. All the students will have to participate performing different roles as speaker, moderator or argumentative.

Thoracic Surgery Area

- Radiological diagnosis in chest surgery.
- Post-operatory care in chest surgery.
- Drainage and chest surgery techniques workshop.

25. Practice. Skills classroom.

Pneumology Area

Clinical cases in the smulation room.

26. Clinical practices.

Clinical practices in the pulmonology and chest surgery wards.
Clinical practices in the respiratory functional examintation laboratory, bronchoscopy unit and chest surgery operating rooms.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	26,00
Seminars	24,00
Laboratory	2,00
In-class tutorials	0,00
Clinical practice	23,00
Total hours	**75,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	15,00
Independent study and work	45,00
Preparation of lessons	0,00
Preparation for assessment activities	0,00
Resolution of case studies	15,00
Preparation of supplementary reports	0,00
Preparation of the internship report and evaluation of the internship	0,00
Total hours	**75,00**

TEACHING METHODOLOGY

In the theoretical credits, a problem-solving methodology will be used, to a large extent, with active participation of the students.

Practical credits will consist of seminars, clinical cases and clinical skills classroom. In the seminars, practical aspects of respiratory pathology will be presented in a participative manner, with aerosol management, how oxygen therapy is used, how non-invasive ventilation is applied, etc. All this with the use of real devices, which students must learn to use.

Virtual tutoring is promoted through email and also through the virtual classroom. Other computer resources are also used, such as opening a pulmonological forum in the skills classroom.Clinical practices are carried out mainly in the hospitalization wards of the different University Hospitals, supervised by healthcare professors and teaching collaborators. There, students take histories of admitted patients (anamnesis, examination, complementary data, diagnosis and treatment, for teaching purposes). A minimum of 8 medical records is set as desirable. The Unit provides the student with the objectives on the first day of practice and on the last day it is evaluated whether they have been achieved.

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

EVALUATION

For this subject, the evaluation of knowledge and skills is carried out based on the following elements: final written exam, multiple choice, which will have 100 questions (75 on medicine and 25 on surgery), with 4 possible answers and only one valid one. Correct questions will have a value of 1 point, wrong questions will subtract 0.333 and unanswered questions will have 0 points.

Theoretical evaluation: 50% of the final grade. It will cover the contents of the theoretical program and will aim to evaluate the acquisition of knowledge.

Practical evaluation: 50% of the total grade. It will allow the acquisition of skills related to general and specific practical competencies to be evaluated. The test questions have theoretical-practical content, so the evaluation is joint in the multiple choice exam and this therefore serves to evaluate the practical, theoretical, medicine and surgery contents, with a common final grade. The content of the test will be the same for all groups of the same subject. It will be approved with 50 points.

Throughout the course, a continuous evaluation consisting of several partial evaluations of the explained subject is carried out on a voluntary basis, which will take place at the end of some ¿theoretical¿ classes at the School of Medicine and/or through the virtual classroom questionnaire resource, non-face-to-face. It will consist of multiple choice theoretical-practical questions. The continuous evaluation, for students who decide to take it, will have a value of 40% of the final grade. This score will only serve to increase the grade and never to subtract it. That is, the maximum grade can be obtained only with the final exam. Continuous

evaluation may raise the grade from 4.5 in the final exam.

The student's participation in the scientific day will be evaluated between 0 - 1 point. The grade obtained in this seminar will be added directly to the final grade obtained after evaluating the final exam and the continued evaluation (in cases where applicable). The grade in this section can only be raised after 4.5 in the final exam.

The final grade resulting from all the previous sections will range between 0 and 10. If adding the score of the scientific day to the final grade after the final exam and continuous evaluation exceeds 10, the maximum grade will continue to be 10.

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 is a requirement to access the advance call for this subject that the student has completed all of his/her practices.

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

REFERENCES

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- West JB. J.B. West's Respiratory Physiology: The Essentials. 8th edition. Lippincott Williams & Wilkins, 2007
- Pearson's Thoracic and Esophageal Surgery, 2-Volume. by G. Alexander Patterson, F. Griffith Pearson , Joel D. Cooper, etc.
- Operative Thoracic Surgery by Larry R. Kaiser, Glyn G. Jamieson
- Thoracic Surgery Atlas by Mark K. Ferguson
- Thomas W. Shields, Publisher: Lippincott, Williams & Wilkins; 5th edition
- - 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]