

Physiopathology and Clinical Semiology

Code: 102936
ECTS Credits: 11

Degree	Type	Year	Semester
2502442 Medicine	OB	3	0

Contact

Name: Albert Selva O'callaghan
Email: albert.selva@uab.cat

Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Teachers

Roberto Muga Bustamante
Joaquín Oristrell Salva
Jordi Casademont Pou

Prerequisites

It is recommended that the student has achieved basic competencies in cell biology, biochemistry and molecular biology.

It is also convenient to have enough knowledge on the basis of psychological states of health and disease, as well as an adequate level of knowledge in interpersonal communication.

It is recommended to have acquired sufficient knowledge in:

General and specific anatomy of the different organs and systems

General and specific physiology of the different organs and systems

The student will acquire the commitment to preserve the confidentiality and professional secrecy of the data that can be accessed due to the learning in health care services. Also to maintain an attitude of professional ethics in all its actions.

Objectives and Contextualisation

The subject is programmed in the third year of the Degree of Medicine, which corresponds to the beginning of the clinical period, once the basic knowledge about the structure and function of the human body has been obtained and before entering the study of the different medical and surgical pathologies and in clinical practice.

Its general objective is the study of the patient and, therefore, involves the knowledge of the general and basic aspects of the illness. In any case, it constitutes the first contact of the student with the clinic and must offer a global and systematized vision of the patient.

Knowledge of general physiopathology, semiology and clinical propaedeutic will allow students to face the clinical cycle of their training knowing previously what is the patient, the relationship that the doctor establishes with the patient, the technique of obtaining the subjective data that afflict it, the methods and techniques of obtaining the objective data that provide the physical examination and the elementary complementary examinations, finally, to group the fundamental signs and symptoms, making abstraction from what is superfluous, and to shape the great internal medicine syndromes.

The objectives and contents of the subject are complemented with the subjects of the module of diagnostic and therapeutic procedures (bases of clinical surgery, microbiology and parasitology, medical radiology, structural and molecular pathology and general pharmacology) also scheduled in the third year.

Competences

- Demonstrate basic research skills.
- Demonstrate understanding of the causal agents and the risk factors that determine states of health and the progression of illnesses.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
- Indicate the basic diagnosis techniques and procedures and analyse and interpret the results so as to better pinpoint the nature of the problems.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Perform a general and a system-by-system physical examination appropriate to the patient's age and sex, in complete and systematic way, and a mental evaluation.

Learning Outcomes

1. Demonstrate basic research skills.
2. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
3. Describe the organ and system involvement and forms of presentation of diseases of the respiratory, circulatory and digestive systems, blood and hematopoietic organs, nervous system, musculoskeletal system, genitourinary system, metabolism and endocrine system.
4. Describe the relationship between constitution and disease as well as the food habits and drug use, and the physical, chemical, environmental, psychological, social and occupational and carcinogenic factors that determine the development of the disease.
5. Explain the mechanisms by which the disease affects the respiratory, circulatory and digestive systems, blood and hematopoietic organs, nervous system, musculoskeletal system, genitourinary system, metabolism and endocrine system.
6. Explain the mechanisms of ageing, geriatric syndromes and the general assessment of the geriatric patient.
7. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
8. Indicate the basic complementary examinations for interpreting the manifestations of the illness in the different organs and systems of the human body.
9. Make a record that includes the personal, physiological and pathological antecedents of the illness, as well as the main symptoms of diseases of the respiratory, circulatory and digestive systems, blood and hematopoietic organs, nervous system, musculoskeletal system, genitourinary system, metabolism and endocrine system.
10. a complete physical examination general and the respiratory, circulatory and digestive systems, blood and hematopoietic organs, nervous system, musculoskeletal system, genitourinary system, metabolism and endocrine system.

Content

Contents

Development of general medical semiology and propaedeutic and for apparatus and systems. General aetiology of diseases. Pathophysiology and organic syndromes: respiratory, cardio-circulatory and digestive tract, blood and haematopoietic organs, nervous system, locomotor system, metabolism, genitourinary system and the endocrine system.

Distributive blocks and teaching typologies

A. Introduction.

B. Aetiology and general pathophysiology

C. Manifestations of diseases and special pathophysiology for apparatus and systems

D. Semiology and clinical propaedeutic

I. Theory classes (TE typology, 1h sessions, enrolment group)

A. INTRODUCTION

1. Introduction to General Pathology

2. Medical patient-doctor relationship

B. ETIOLOGY AND GENERAL PHYSIOPATHOLOGY

3. Physiopathology of the thermoregulation. Febrile syndrome

4. Pathophysiology of pain

5. Constitutional syndrome / affecting the general state syndrome.

6. Concept of constitution. Constitution and illness. Endogenous risk factors.

7. Physical agents as the cause of illness. Chemical agents as a cause of disease. Poisoning

8. Environmental factors as a cause of illness. Food habits. Tobacco Alcohol Other drugs

9. Psychic and social factors. Occupational pathology

10. General pathology of neoplasms. Carcinogenesis. Effects of the tumor on the host. Paraneoplastic syndromes

11. The disease in the elderly. Geriatric syndromes.

C. MANIFESTATIONS OF SPECIAL DISEASES AND SPECIAL PHYSIOPATHOLOGY

Respiratory track

12. Main signs and symptoms of the respiratory system

13. Respiratory insufficiency and respiratory distress of the adult

14. Obstructive pulmonary syndromes

15. Restrictive pulmonary syndromes. Pulmonary cavitation

16. Pleural syndromes

17. Pathophysiology of diaphragm and mediastin. Mediastinic syndromes

Circulatory system

- 18. Main signs and symptoms of the circulatory system
- 19. Heart failure
- 20. Pathophysiology of valvular lesions. Stenosis and regurgitation
- 21. Pathophysiology of pericardium. Pericardial syndromes
- 22. Pathophysiology of coronary circulation. Coronary syndrome
- 23. Physiopathology of the minor circuit
- 24. Physiopathology of the major circuit. Arterial hypertension. Arterial hypotension
- 25. Pathophysiology of shock. Mechanisms and types of shock

Digestive system

- 26. General semiology of the digestive tract. Abdominal pain Digestive Haemorrhage
- 27. Disorders of intestinal transit. Diarrhoea and constipation. Rectal syndrome
- 28. Malabsorption and bad digestion syndrome. Pathophysiology and causes
- 29. Icteric syndrome. Pathophysiology. Classification
- 30. Portal hypertension. Ascites
- 31. Hepatic insufficiency. Hepatic encephalopathy

Blood and Hematopoietic Organs

- 32. Pathophysiology of the erythrocyte. Anaemic general syndrome. Poliglobuliuc syndrome General exploration of the hematopoietic system
- 33. Alterations of the leucocytes
- 34. Pathophysiology of haemostasis disorders
- 35. Hipofunction and hiperfunction of the bone marrow.
- 36. Adenomegalies and splenomegaly

Neurology

- 37. General semiotics of the nervous system. Main signs and symptoms.
- 38. Pathology of the motor function. Pyramidal syndrome Pathophysiology. Exploration of pyramidal paralysis.

Previous horn syndrome. Motor nerve alterations. Neuromuscular transmission disorders

- 39. Extrapyramidal syndromes. Hypocynesis Hyperkinesis.

Muscle tone disorders

- 40. Medullary, radicular and peripheral nerves syndromes. Segmental medulla syndromes. Cordon of syndromes Complete acute spinal cordonal syndrome. Medullary hemisection syndrome. Levels of medullary alteration. Radicular and peripheral nerves syndromes: semiology
- 41. Vestibular syndrome and cerebellar syndrome. Pathophysiology and semiology

42. Meningeal syndrome and endocranially hypertension syndrome. Pathophysiology and semiology
43. General pathology of the wake and sleep states. Coma
44. Cerebral topographical syndromes. Dementias

Locomotive apparatus

45. Semiology and general pathophysiology of the locomotor apparatus
46. General pathophysiology of bone metabolism

Metabolism

47. Disorders of hydrocarbon metabolism. Hypoglycaemia. Hyperglycemia
48. Disorders of metabolism of lipids. Hypolipoproteinemias. Hyperlipoproteinemias
49. Protein metabolism disorders. Purines metabolism disorders: pathophysiology of the proteins.

uric acid disorders

50. Pathophysiology of water and electrolytes. Disorders of water balance. Sodium balance disorders.
51. Acid-base balance disorders. Potassium Balance Disorders.

Genitourinary Apparatus

52. Semiology and general exploration of the genitourinary system. Nefrourological pain Urination disorders.

Polyuria, oliguria and anuria. Alterations of the appearance and composition of the urine. Disorders of the genital system

53. Renal syndromes. Glomerular, tubular-interstitial and vasculorenal syndrome
54. Renal insufficiency. Type Pathophysiology and semiology

Endocrine system

55. Hipotalamohipofisari system. Hypothalamic syndromes Hypofunction and hyperfunction pituitary syndromes.
56. Thyroid. Pathophysiology of simple goiter. Hypothyroid syndrome Hyperthyroid syndrome Parathyroids: Hypofunction and hyperfunction syndromes
57. Adrenals glands. Hypofunction and hyperfincion adrenal cortex. Hyperfunction of the adrenal medulla
58. General pathophysiology of gonads

D. SEMIOLOGY AND CLINICAL PROPERTIES

II. General seminars (SCC typology, 1 hour sessions, 10-12 students)

Communication with the patient, the family, the healthcare team and the environment. Factors that facilitate communication patien-doctor: overcoming cultural and religious barriers. Relationship with specific subgroups of patients

(children, adolescents, old, incapacitated, psychiatric) Relations with relatives. Relations with other components of the healthcare team. Confidentiality and informed consent.

Clinical history and anamnesis: General principles. Pathological and personal history. Family history. Anamnesis of pain.

Clinical history and anamnesis: anamnesis for apparatus and systems.

Clinical history and anamnesis: Clinical history problem-oriented. Course of the disease.

Epicrise

The doctor and the laboratory.

Reading and interpretation of ECG

III. Laboratory of clinical abilities (PLAB typology, 1 hour sessions, groups of 10-12 students)

The general exploration of the patient. General principles

Clinical interpretation of the measurement of AP and of the arterial pulse. Frequency and rhythm anomalies heartbeats

Heart sounds. Added heart sounds. Heart murmurs.

Semiology of the most frequent respiratory diseases. Respiratory auscultation.

Exploration of the abdomen. Genitourinary and ano-rectal exploration

Semiology and general exploration of the locomotor apparatus

General exploration of the nervous system. Exploration of motility and sensitivity

Exploration of the reflexes. Exploration of the cranial pairs. Meningeal syndrome

Other explorations.

IV. Discussion of clinical cases (SCC typology, sessions of 2 h, groups of 10-12 students)

Case of ethical problem and aspects related to confidentiality

Case of febrile syndrome

Case of illness of the Respiratory apparatus

Case of illness of the Circulatory apparatus

Case of illness of the Digestive system

Case of Hematological Disease

Case of Neurological disease

Case of Metabolic disease

Case of illness of the Genitourinary device

Case of Endocrine Disease

V. Clinical practices (30 hours: 3h x 5 days 1st semester and 3h x 5 days second semester, groups of 2 students).

Rotation for the hospitalization room with the objectives of completing 5 complete clinical histories and obtaining experience in exploration of the main clinical syndromes:

First semester practice

Clinical history nº 1.

Clinical history nº 2.

Clinical history nº 3.

Clinical history nº 4.

Clinical history nº 5.

Physical examination practices during the semester:

Exploration of respiratory syndromes (exploration of respiratory insufficiency, exploration of pulmonary condensation syndrome, exploration of pleural syndromes).

Exploration of cardio circulatory syndromes (exploration of pressure and arterial pulses, exploration of heart failure, exploration of cardiovascular failure).

Exploration of digestive syndromes (exploration of ascitical syndrome, exploration of the syndrome icteric, exploration of liver failure).

Exploration of the nephrourological syndromes (exploration of the urinary syndrome, semiology of oedema).
Exploration of hematologic syndromes (general exploration and evaluation of anaemic syndrome, exploration of the spleen and ganglionic regions).

Exploration of neurological syndromes (awareness, strength and muscular tone, reflexes, sensitivity, coordination and balance, walking, meningeal syndrome).

Methodology

Methodology

This Guide describes the framework, contents, methodology and general norms of the subject, in accordance with the current curriculum. The final organization of the subject with regard to the number and size of groups, distribution in the calendar and dates of examinations, specific criteria of evaluation and review of examinations, will be specified in each one of the Hospital Teaching Units, that will explain it through their WEB pages and the first day of class of each subject, through the teachers responsible for the subject at UDH. If the tutors consider appropriate, and depending on the resources available at each Teaching Unit, some of the contents of the theory classes may be taught and evaluated in the simulation classes using the corresponding methodology.

For the present year, the professors appointed by the Departments as responsible for the subject at the Faculty level and the UDH are:

Department responsible: Medicine

Responsible of Faculty: Vicent Fonollosa Pla

Responsible UDH:

UD Vall d'Hebron: Vicent Fonollosa Pla

UD Germans Trias i Pujol: Jordi Tor Aguilera

UD Sant Pau: Jordi Casademont Pou

UD Parc Taulí: Joaquim Oristrell Salvà

General teaching methodology:

Theory classes (typology TE), Scheduled sessions 58 (1h per session), group: group of enrolment. The student acquires the theory knowledge of the subject attending the lectures and complementing them with the

personal study of the topics explained. The master classes are conceived as an essentially expositive method, which transmits the teacher's knowledge to the student.

General semiology seminars (SCC typology). Scheduled sessions 7 (1 h per session), in small groups (10-12 students). In each seminar, a selected subject will be treated in accordance with the established programming, through the exchange of information and the subsequent debate.

Discussion seminars on clinical cases (SCC typology). Scheduled sessions 10 (2 hours per session), in small groups (10-12 students). The students will discuss type clinical cases, under the direction of a tutor. Some of these seminars will serve as a basis and tutorial in the presentations of the clinical histories that the student will have

To perform and deliver as a part of the clinical evaluation.

Laboratory practices (PLAB typology). Scheduled sessions 9 (1 h per session), in small groups (10-12 students) in the classroom of abilities. The activities carried out within a scheduled timetable are aimed at the acquisition of clinical skills.

Clinical Assistance Practices (PCA). Scheduled hours 30 (3h x 10 days). They will be done in a group of 2 students. The students will attend the hospitalization room facilities: 10 days, 3 hours a day, with the objectives of completing 5 complete clinical histories and obtaining experience in exploration of the main syndromes. The clinical histories carried out will be the basis of the deliveries that the student will have to carry out and that will be evaluated as part of the clinical evaluation.

Autonomous (total 137 hours). Comprehensive reading of texts and articles, study and realization of diagrams, summarization and conceptual assimilation of the contents. Preparation of presentations and written works.

In the current exceptional circumstances, at the discretion of the teachers and also depending on the resources available and the public health situation, some of the theoretical classes, practicals and seminars organized by the Teaching Units may be taught either in person or virtually.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
ADVANCED CLINICAL SIMULATION PRACTICE (IN HUMANS) (PSCA)	3	0.12	1, 2, 3, 4, 6, 5, 7, 8, 10, 9
CLINICAL CASES SEMINARS (SCC)	24	0.96	1, 2, 3, 4, 6, 5, 7, 8, 10, 9
CLINICAL PRACTICES (PCAh)	30	1.2	3, 7, 8, 10, 9
PRACTICE OF ADVANCED CLINICAL SKILLS (IN HUMANS) (PHCA)	9	0.36	1, 2, 3, 7, 8, 10, 9
THEORY (TE)	58	2.32	1, 2, 3, 4, 6, 5, 7, 8, 10, 9
Type: Autonomous			
Self studies	137	5.48	1, 2, 3, 4, 6, 5, 7, 8, 10, 9

Assessment

Evaluation

An evaluation of the knowledge of the theory contents of the subject and the attitudes, aptitudes and clinical competence will be carried out. The relative weight of the theory examination and the clinical evaluation is 70% and 30% respectively (maximum 7 and 3 points out of 10).

Assessment of theory knowledge

Final theory exam : The final exam includes all the subject matter and the content of the seminars. In test-type test models, questions will be included that will have 5 possible answers and a single right choice.

The wrong answers take away 0.25 points.

Partial theory examinations. There will be two partial exams. The first will include the topics and the corresponding content of the seminars. The second part will include the subjects and contents of the remaining seminars.

The final grade of theory will be obtained from the average of the marks obtained in the two partial exams. In order to be able to do this, the minimum score of any one of the partials must be 5. The student must submit to the final exam of any partial not passed.

Examples:

(1er quadre)

1st part	2nd part	Average	Final exam theory and mark
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* The mark is joint and unique, not differentiated in 1st part and 2nd partial.

If the mark of this final exam of theory is less than 5, the subject is failed and the remaining mark corresponds to the final exam (1st part, 2nd partial or Not evaluated).

Example:

(2ºn quadre)

1st part	2nd part	Final exam theory and mark
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Final mark	Qualification
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Students who pass any of the partial exams may submit to the final exam in order to get a better qualification, previously renouncing the mark obtained in the partial ones.

Clinical Evaluation

Comprises the practical evaluation and presentation of clinical works and histories. Attendance is mandatory. Any absence must justify it to the tutor and retrieve it if necessary for the student to be evaluated.

Final grade

Weighted average of theoretical knowledge (70%) and clinical evaluation (30%). Attendance to class will be evaluated positively. The average between the theoretical evaluation and the clinical evaluation can not be made if a minimum score of 5/10 is not obtained in both tests. In the case of not being able to do the average, the final grade will correspond to the lowest quantitative value of those obtained in theoretical and clinical evaluations.

Examples:

(3er quadre)

Final theory	Final clinic	Average provisional final grade	Final exam T + C
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Quantitative rating: numerical note with a decimal, from 0 to 10 (0-4.9 Fail, 5-6.9 Pass, 7-8.9 Good, 9-10 Merit).

Qualification: Fail, Pass, Good, Merit, Honour Distinction.

Exams review system

The review of the exams will be done individually with the student, upon written request within the established deadlines.

Students who do not perform both theoretical nor practical evaluation tests will be considered as Not evaluated by exhausting the rights to the matriculation of the subject.

Evaluation activities

Practical type assessments: Objective and structured clinical evaluation 30%

Written Evaluation: Objective tests: Elements of multiple choice

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Clinical practice evaluation	30%	7	0.28	1, 2, 3, 4, 6, 5, 7, 8
Theory evaluation: multiple choice	70% (35% 1st partial + 35% 2n partial)	7	0.28	7, 8, 10, 9

Bibliography

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B) MEDICINA INTERNA

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Software

No software required