UAB
Universitat Autònoma de Barcelona

Simulation Applied to Medical and Surgical Knowledge

Code: 106705
ECTS Credits: 5

2024/2025

Degree	Type	Year
2502442 Medicine	OB	6

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

It is necessary for the student to have basic clinical knowledge of medical and surgical pathology and general hos

Objectives and Contextualisation

The subject corresponds to the last year of the Degree in Medicine (6th year), once the student knows the scienti
Consolidate attitudes, aptitudes and abilities of the student to train him in

Competences

- Accept one's role in actions to prevent or protect against diseases, injuries or accidents and to maintain and promote health, on both personal and community-wide levels.
- Act with ethical responsibility and respect for fundamental rights, diversity and democratic values.
- Apply the principle of social justice to professional practice and demonstrate understanding of the ethical implications of health in a changing world context.
- Care for patients, families and the community in an effective and efficient manner, in accordance with professional ethics, with special emphasis on health promotion and disease prevention, as part of multidisciplinary teams.
- Communicate clearly and effectively, orally and in writing, with patients, family-members and accompanying persons, to facilitate decision-making, informed consent and compliance with instructions.
- Communicate clearly, orally and in writing, with other professionals and the media.
- Critically assess and use clinical and biomedical information sources to obtain, organise, interpret and present information on science and health.
- Demonstrate an understanding of the fundamentals of action, indications, efficacy and benefit-risk ratio of therapeutic interventions based on the available scientific evidence.
- Demonstrate basic knowledge of the Spanish health system, legislation on health and economic issues.
- Demonstrate sufficient supervised clinical experience in hospitals or other healthcare centres, and familiarity with patient-centred care management and the correct use of tests, medicines and other resources of the healthcare system.
- Demonstrate understanding of the importance of ethical principles in dealings with patients, society and the profession, in particular with regard to professional confidentiality.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Design and manage programmes and projects in the field of health.
- Empathise and establish efficient interpersonal communication with patients, family-members, accompanying persons, doctors and other healthcare professionals.
- Engage in professional practice with respect for patients' autonomy, beliefs and culture, and for other healthcare professionals, showing an aptitude for teamwork.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Establish the diagnosis, prognosis and treatment, basing decisions on the best possible evidence and a multidisciplinary approach focusing on the patient's needs and involving all members of the healthcare team, as well as the family and social environment.
- Give the patient and/or accompanying persons the relevant information about the disease process, its bases and consequences, including bad news, in an appropriate way.

- Identify and measure the affective and emotional components of human behaviour and their disorders.
- Indicate the basic diagnosis techniques and procedures and analyse and interpret the results so as to better pinpoint the nature of the problems.
- Indicate the most suitable treatment for the most prevalent acute and chronic processes, and for the terminally ill.
- Listen carefully, obtain and synthesise relevant information on patients' problems, and understand this information.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- 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.
- Perform the basic practical procedures of examination and treatment.
- Put forward suitable preventive measures for each clinical situation.
- Reason and make decisions in conflict situations of an ethical, religious, cultural, legal or professional nature, including those that stem from economic constraints, the marketing of health cures or scientific advances.
- Recognise and take action in life-threatening situations and others that require an immediate response.
- Recognise ethical, legal and technical factors in patients' documentation, plagiarism, confidentiality and propriety.
- Recognise the basic elements of the medical profession as the result of an evolving, scientific, social and cultural process, including ethical principles, legal responsibilities and patient-oriented professional practice.
- Recognise the role of complexity, uncertainty and probability in decision-making in medical practice.
- Recognize the determinants of population health, both genetic and dependent on gender, lifestyle, and demographic, environmental, social, economic, psychological and cultural factors.
- Students can apply the knowledge to their own work or vocation in a professional manner and have the powers generally demonstrated by preparing and defending arguments and solving problems within their area of study.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Use information and communication technologies in professional practice.
- Write patient records and other medical documents that can be understood by third parties.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Apply the principles of equity in all areas of application of public health.
3. Assess the relationship between efficacy and risk in the main therapeutic interventions.
4. Communicate appropriately with patients and their family-members.
5. Communicate clearly, orally and in writing, with other professionals and the media.
6. Correctly write reports on the results of genetic tests.
7. Critically analyse the principles, values and procedures that govern the exercise of the profession.
8. Critique scientific papers on bioinformatics.
9. Describe how health is not merely the absence of disease but also all physical, psychological and social conditions that allow maximum plenitude and autonomy of the person.
10. Describe the communication process and its effect on the professional caregiverpatient relationship.
11. Describe the concept of risk-benefit in medical therapy.
12. Describe the main communicative skills for a clinical interview.
13. Describe the main genetic, sexual, age, lifestyle, environmental, social, economic, psychological and cultural factors that may modify the therapeutic and toxic response of a drug.

14. 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.
15. Describe the person as a multidimensional being in which the interplay of biological, psychological, social, environmental and ethical factors determines and alters the states of health and disease and their manifestations.
16. Evaluate the appropriate scientific methodology for a biomedical paper.
17. Explain ethical, legal and technical features and those of confidentiality related to patient documentation.
18. Explain the economic and social implications of medical intervention, using criteria of effectiveness and efficiency.
19. Explain the explicit or implicit deontological code in your area of knowledge.
20. Give patients the maximum possible information about their health, diagnostic steps, complementary examinations and treatments in an appropriate way.
21. Identify situations that require improvement or change.
22. Identify the main activities of health promotion and disease prevention.
23. Indicate the basic complementary examinations for interpreting the manifestations of the illness in the different organs and systems of the human body.
24. Interact with other specialists in treating patients with a complex or multiorganic pathology.
25. Know the main forms of preventive immunotherapy, especially vaccines, and the mechanism by which they confer protection.
26. 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.
27. Order signs and symptoms to perform a differential syndromic diagnosis.
28. Perform a suitable physical examination for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
29. Perform basic and advanced life support manoeuvres.
30. Perform basic techniques for the examination and functional assessment of physiological systems.
31. Propose new experience-based methods or alternative solutions.
32. Propose new ways to measure success or failure when implementing ground-breaking proposals or ideas.
33. Propose projects and actions in accordance with the principles of ethical responsibility and respect for fundamental rights, diversity and democratic values.
34. Provide the bases for preparing clinical guides and constructing diagnostic and therapeutic algorithms.
35. Recognise the clinical manifestation of affective disorders and anxiety disorders.
36. Report all professional activities with scrupulous accuracy in individual patient records, both to serve as a reminder of the actions taken and to facilitate follow-up work by colleagues.
37. Respect patients' religious, ideological and cultural convictions, unless these conflict with the Universal Declaration of Human Rights, and prevent one's own convictions from impinging on patients' decision-making capacity.
38. Students can apply the knowledge to their own work or vocation in a professional manner and have the powers generally demonstrated by preparing and defending arguments and solving problems within their area of study.
39. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
40. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
41. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
42. Use information and communication technologies in professional practice.
43. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.

44. Weigh up the risks and opportunities of one's own ideas for improvement and proposals made by others.
45. Write a review paper on a current topic in the field of medicine.

Content

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
DIRECTED ACTIVITIES	53	2.12	2, 16, 4, 8, 11, 10, 13, 14, 15, 12, 9, 28, 17, 18, 22, 23, 20, 24, 29, 26, 45, 37, 3
Type: Autonomous			
AUTONOMOUS ACTIVITIES	66.65	2.67	7, 1, 19, 21, 44, 31, 32, 33, 41, 40, 38, 39, 43

The subject will be taught in the following teaching typologies:

1.- THEORETICAL CLASSES (6 hours of TE)
a) Global Presentation of the Subject (5 hours of TE): at the beginning of
b) Presentation of the Catalan Health System (1 hour of TE): by the Man
2.- CLINICAL SKILLS PRACTICES (20 h of PHCA)
These practices will be developed fundamentally in the skills classroom i
3.- ADVANCED SIMULATION PRACTICES IN HUMANS (24 h of PSCA)
These practices will be developed in the simulation and debriefing classr
4.- SEMINARS (3h of SEM)
The seminars will be given in groups of 20 students who will split into 25
Exceptionally and according to the criteria of the responsible teaching sta

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Assistance and active participation in the Pharmacotherapy Specialization Seminar	5%	1.3	0.05	7, 1, 2, 16, 4, 5, 25, 8, 11, 10, 13, 14, 15, 12, 9, 28, 19, 17, 18, 22, 21, 23, 20, 24, 27, 44, 34, 31, 32, 33, 41, 40,

				38, 39, 29, 30, 26, 35, 6, 45, 36, 37, 42, 3, 43
Assistance to the skills and simulation sessions: Evaluation of a practical type of simulation, Evaluation of a practical type of technical skills	50%	1.3	0.05	7, 1, 2, 16, 4, 5, 25, 8, 11, 10, 13, 14, 15, 12, 9, 28, 19, 17, 18, 22, 21, 23, 20, 24, 27, 44, 34, 31, 32, 33, 41, 40, 38, 39, 29, 30, 26, 35, 6, 45, 36, 37, 42, 3, 43
Attendance and active participation in class: Presentation assigned What are the ACOEs? Sistema Sanitario de Salud Catalan	5%	1.3	0.05	7, 1, 2, 16, 4, 5, 25, 8, 11, 10, 13, 14, 15, 12, 9, 28, 19, 17, 18, 22, 21, 23, 20, 24, 27, 44, 34, 31, 32, 33, 41, 40, 38, 39, 29, 30, 26, 35, 6, 45, 36, 37, 42, 3, 43
Evaluation of the learning achieved and the participation in the simulation sessions	40%	1.45	0.06	7, 1, 2, 16, 4, 5, 25, 8, 11, 10, 13, 14, 15, 12, 9, 28, 19, 17, 18, 22, 21, 23, 20, 24, 27, 44, 34, 31, 32, 33, 41, 40, 38, 39, 29, 30, 26, 35, 6, 45, 36, 37, 42, 3, 43

Evaluation activities	Final Note Weight
Attendance in class:	5%
• subject presentation	2%
• What are ACOEs?	1%
• Catalan Health System	2%
Assistance and active participation in the Specialized Seminar on Pharmacotherapy	5%
Attendance to simulation sessions and technical skills:	50%
• Evaluation of practical type of simulation	25%
	25%

• Practical evaluation of technical skills	
Evaluation of the learning achieved and the participation in the simulation sessions	40%

The evaluation system will be based on attendance at theoretical classes (5%) (Presentation of the subject (2%), Regarding the attendance and active participation in the simulation pract Since the subject is fundamentally practical, students will be "NOT EVAL Any proof of recovery is excluded.

This subject does not provide the single assessment system

Evaluation activities

TITLE	WEIGHT	ECTS	LEARNING RESULTS
1.- Attendance and active participation in class:	5%	0.13	All the learning outcomes expressed in basic, general, specific and transversal skills
• Presentation assigned	2%		
. What are the ACOEs?	1		
•Sistema Sanitario de Salud Catalan	2%		
2.-Assistance and active participation in the Pharmacotherapy Specialization Seminar	5%		
3.- Assistance to the skills and simulation sessions:	50%		
• Evaluation of a practical type of simulation	25%		
• Evaluation of a practical type of technical skills	25%		

4.- Evaluation of the learning achieved and the participation in the simulation sessions	40%	0.22
TOTAL	100%	0.35

Bibliography

the bibliography will be provided by each department involved in the course program in each teaching unit

Software

Non aplicable

Language list

Information on the teaching languages can be checked on the CONTENTS section of the guide.