

Degree programme	Type	Course
Medicine	OP	4

Contact lecturer

Name : Enrique Moret Ruiz

Email : enrique.moret@uab.cat

Teaching staff

Sergi Sabate Tenas

Maria Mercedes Garcia Alvarez

Myriam Nadal Clanchet

Jenaro Mañero Rey

Maria Pilar Paniagua Iglesias

Alicia Melero Mascaray

Susana Gonzalez Suarez

Ana Parera Ruiz

Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

Students should have passed all subjects of the first cycle previously.

Students are request to preserve confidentiality and professional secret about clinical data related to patients or to learning purposes.

A correct attitude in terms of professional ethics in all students' actions is mandatory.

Objectives

1. To recognise risks and problems of anaesthesia as a medical doctor, to be able to advice surgical patients how to prepare physically and psychologically before surgery and anaesthesia.
2. To know special problems of anaesthesia for different surgical procedures and different kind of patients so that in the future the student, no matter the chosen specialty, will be able to help and advise other medical doctors on medical problems related to anaesthesia and surgery.

3. To apply basic principles of physiopathology and pharmacology to diagnose and treat critical ill patients: different coma states, cardiovascular and respiratory insufficiency, cardio-respiratory arrest, traumatism, shock status, etc.
4. To familiarise with acute pain evaluation using analgesic drugs through different administration routes and to perform some techniques to be able to relieve pain in situations of chronic pain.
5. To know and recognise general principles of Postoperative Resuscitation, most frequent complications and their treatment

Specific objectives

1. To know general surgical indications, perioperative risks and postoperative complications

Knowledge

- Risk factors of anaesthetic and surgical procedures
- General and specific postoperative complications in different surgical specialties
- Postoperative pain
- Thrombotic risk associated to anaesthesia, prophylaxis in different surgical procedures

Clinical abilities (to do)

- To detect the most important anaesthetic-surgical risk factors affecting: anatomic abnormalities, cardiovascular diseases, respiratory diseases, hepatic and renal diseases, metabolic diseases and nutritional alterations, extreme ages, coagulation disorders, nervous system diseases, allergies, pregnancy.
- To detect relationship between chronic treatments and anaesthetic-surgical procedures
- To detect early postoperative complications depending on surgical risk factors and patient's comorbidities.

Clinical abilities (to know how to do)

- Full preanaesthetic evaluation and decision making about anaesthetic-surgical procedures

2. To know general principles of anaesthesia and resuscitation

Knowledge

- Clinical guides (phases) of the surgical patient
- Preoperative evaluation
- Preoperative preparation of the patient
- Multimodal prehabilitation concept and objectives
- IV and inhalatory general anaesthesia
- Sedation and analgesia
- Differences between general anaesthesia, sedation, regional and local anaesthesia
- OR and Day-Hospital organisation
- Ethics and laws of the clinical practice of anaesthesia and resuscitation

Clinical abilities (to know to do)

- To give general information about anaesthesia to the patient: safety, risks, sensations and side effects
- To perform correctly local topic and infiltration anaesthesia
- Safety administration of mild sedation

Clinical abilities (to know how to do)

- Neuroaxial and regional blocks

3. To know principles of different drug groups, dosages, administration routes, and pharmacokinetics. Analgesic drugs.

Knowledge

- Clinical pharmacology of general anaesthetics, benzodiazepines, muscle relaxants and local anaesthetics
- Perioperative use of opioids
- Non-opioid analgesic drugs

Clinical abilities (to know to do)

- To administer sedative drugs, neuroleptics, antiepileptic drugs, antibiotics, etc. safely

Clinical abilities (to know how to do)

- Lumbar puncture

To indicate adequate treatments in most frequent acute and chronic processes and in terminal ill patients.

4. To know epidemiology, social-economic consequences and physiopathologic basis of acute and chronic pain and its treatment.

Knowledge

Pain and its treatment. Definition and types of pain. Pain treatment as a fundamental human right.

a) Pain as a Public Health Problem

- Epidemiology. Individual and socioeconomic repercussions
- Ethics aspects
- Human and animal research

b) To know implicated mechanisms of transmission and modulation of pain and its evolution from acute to chronic pain.

- Neuroanatomy, physiology and biochemistry: Transmission and modulation routes of pain. Transmitters implicated. Psychology of pain.

c) To know how to evaluate pain, suffering and disability and the efficacy of treatments. Scales and questionnaires

d) To know standard treatments used in acute and chronic pain

- Pharmacologic treatment: opioid and non-opioid analgesics and adjuvants. Administration routes and forms
- Invasive treatments: blocks, radiofrequency, neurostimulation
- Psychologic techniques and physiotherapy

e) To know clinical characteristics and treatment in most frequent clinical scenarios affected by pain:

Acute postoperative pain and pain treatment in emergency room

Muscle-skeletal pain

Neuropathic pain

Oncologic pain

Pain in children and elderly patients

Pain and pregnancy

Pain in drug dependent patients

Pain in palliative care

f) Derivation criteria and patient visits in Pain Unit

g) Principles of analgesia and palliative sedations

Clinical abilities (to do)

To perform anamnesis, clinical exploration, y solicitar pruebas complementarias de enfermos con dolor agudo y crónico

- To evaluate acute and chronic pain intensity using visual and oral analogic scales
- To prescribe combined analgesic treatments. To prevent and treat side effects.
- To treat pain correctly in special situations: pregnancy, breast feeding, pediatry, geriatry, drug dependent patients.
- To prescribe opioids and combined opioid drugs through different administration routes (oral, transdermic, etc.) at home. To prevent and treat side effects. To recognise opioid addiction signs in patients with chronic pain.
- Follow-up of oncologic patients under high dosages of opioids through different administration routes
- Peripheric infiltrations with local anaesthetics with analgesic purposes
- Follow-up ("pain diary") of chronic pain and treatment efficacy

Clinical abilities (to know how to do)

- To evaluate clinical trial protocols on pain issues
- To know the correct use of questionnaires in chronic pain management
- To know the correct safe IV administration of opioids in acute pain treatment
- To know the correct administration of analgesic drugs with "patient controlled analgesia" (PCA)
- To know the indications of central and peripheric nerve blocks in pain treatment
- To know pain treatment in labour with epidural analgesia
- To know the use of opioids in terminal ill patients
- To know opioids rotation and/or administration routes

Learning outcomes

1. Manage the information available and set levels of discussion in multidisciplinary groups.
2. Back decision-making with the best scientific evidence.
3. Anticipate and compare information for good decision-making.
4. Participate in the whole process of patient-care, from diagnosis to aftercare.
5. Enumerate the alarm signs that require urgent attention to the patient.
6. Identify emergency situations and establish an order of priorities.
7. Distinguish the implications of different interventions regarding functional and morphological changes.
8. Further investigate the risk factors of morbidity and mortality in operations.
9. Use the scales that assess the general (physical and mental) state of the patient.
10. Integrate all pre-operative information for decision-making.
11. Calculate the surgical risk indices, both general and by apparatus, and adjust the indications accordingly.
12. Distinguish the bases of the different surgical specialisations to integrate and lead the treatment in acute and chronic patients with multiple conditions.
13. Gather information and select the most important facts about the patient, both in normal visits and emergencies.
14. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
15. Use information and communication technologies in professional practice.

Contents

CONTENTS

Theoretical classes (11 hours): in case of virtual classes, video records of the corresponding classes will be available in Moodle Virtual Campus

Preoperative risk assessment (1 hour)

General principles of anaesthesia and resuscitation (2 hours)

General anaesthetics (1 hour)

Regional Anaesthesia and local anaesthetics (1 hours)

Obstetric anaesthesia (1 hour)

Acute and chronic pain (2 hours)

Reanimation surgical table (3 hours)

Pràctiques de laboratori (4 hores): es realitzaran en petits grups per tal de respectar la distància social de seguretat

Clinic cases in Anaesthesiology (1 hour)

Contextual competences (1 hour)

Basic Monitoring (1 hour)

Basic Airway management (1 hour)

Asistencial Clinical Practices (15 hours): also possible during the weekend with the anaesthesiology team on duty

OR (5 hours)

Postoperative ICU (5 hours)

Pain (5 hours)

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
THEORY (TE)	11	0.44	1, 3, 5, 8, 12, 13, 14, 15
LABORATORY PRACTICES (PLAB)	4	0.16	2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 15
Autonomous	42	1.68	1, 3, 7, 8, 10, 12, 13, 14, 15
ASISTENCIAL CLINICAL PRACTICES (PCAh)	15	0.6	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

This Guide describes the framework, contents, methodology and general rules of the subject, in accordance with the current curriculum.

The final organization of the subject with respect to the number and size of groups, distribution in the calendar, specific evaluation criteria, will be specified in each of the hospital teaching units (UDH), which will make it explicit

through its web pages and the first day of class of each subject, through the professors responsible for the subject at the UDH.

Teaching methodology and evaluation proposed in this guide may be modified according to current pandemic restrictive official regulations. For the present course, the professors appointed by the departments as responsible for the subject at the Faculty and the UDH level are:

UDHSP UDHVH

Ana

Parera aparera@santpau.cat

Ruiz

UDGTiP UDPT

Sergi

Sabaté SSabateT@santpau.cat

Tena

Mercedes

García

Álvarez

MGarciaA@santpau.cat

Pilar

Paniagua p

The subject can be taught if you meet a minimum of 10 students enrolled.

The orientation schedule of the subject can be consulted on the corresponding UUDD website.

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.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Anaesthesiology clinical traineeship attendance	50%	1	0.04	4, 5, 6, 7, 9, 11, 12, 13, 15
Evaluation through case studies and problem solving	10%	1	0.04	4, 5, 6, 8, 9, 10, 11, 12, 14
Attendance and active participation in class and seminars (also in virtual form)	40%	1	0.04	1, 2, 3, 5, 7, 8, 10, 15

This subject does not provide the single assessment system.

The assessment system is based on:

Anaesthesiology clinical traineeship attendance: 50%

Attendance and active participation in class: 40% (also in case of virtual classes) by asking a question at the end of each class.

Evaluation of practical cases and problem based learning: 10%

Problem solving, class attendance, active participation, demonstration of skills, student behavior during practices (punctuality, compliance with the schedule, treatment with the patient, treatment with the medical / nursing staff, interest shown, involvement / collaboration).

Students who do not take the theoretical and practical assessment tests will be considered as NOT evaluated, exhausting the rights to the enrollment of the subject.

This subject includes a recovery system for students who have not passed the content of the same, with a format to be determined.

Any irregularity committed during an assessment activity (academic fraud, plagiarism, or improper use of AI, unless such use is expressly authorized in the course guide) that could lead to a significant alteration of the grade will result in that assessment being graded 0.

If the course guide stipulates that passing the course requires obtaining a minimum grade on that assessment activity, or if multiple irregularities occur in the assessment activities of the same course, the final grade for the course will be 0.

In addition, disciplinary proceedings may be initiated against any student who commits any of these irregularities.

For this course, the use of Artificial Intelligence (AI) technologies is permitted exclusively for support activities, such as bibliographic or information searches, text correction, or translations. The student must clearly identify which parts have been generated using this technology, specify the tools used, and include a critical reflection

on how these tools have influenced both the process and the final outcome of the activity. Lack of transparency regarding the use of AI in this graded activity will be considered a breach of academic honesty and may result in partial or total penalties on the activity's grade, or more severe sanctions in serious cases.

Bibliography

Specific bibliography

[Anesthesia Student Survival Guide: A Case-Based Approach](#) by Jesse M. Ehrenfeld, [Richard D Urman](#), and Scott Segal (Paperback - Mar 19, 2010)

[Pocket Anesthesia \(Pocket Notebook Series\)](#) by [Richard D Urman](#) and Jesse M Ehrenfeld (Loose Leaf - Jun 1, 2009)

[NMS Clinical Manual of Anesthesia](#) by Randall S. Glidden (Paperback - Oct 15, 2002)

[Atlas de poche d'anesthésie](#) de Norbert Roewer, Holger Thiel, Jürgen Wirth, et Guy Freys (Broché - 8 septembre 2009)- original in German.

[Core Clinical Competencies in Anesthesiology: A Case-based Approach \(Cambridge Medicine\)](#) by Christopher J. Gallagher, Michael C. Lewis, and Deborah A. Schwengel (Paperback - 12Apr 2010)

[How to Survive in Anaesthesia: A Guide for Trainees, Third Edition](#) by Neville Robinson and George M. Hall (Paperback - 10 Oct 2006)

Recursos WEB:

Anesthesia virtual

<http://www.anestesiavirtual.com/>

Regional anesthesia:

<http://www.raeducation.com>

Software

No specific program is needed.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE