

**Surgery and Anaesthetics**

Code: 102675  
ECTS Credits: 8

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OB	3	A

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

**Contact**

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**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**

Félix Angel García Arnás  
Maria Teresa Peña Giménez  
Cristina Costa Farré  
Adria Aguilar Catalan  
Anna Maria Andaluz Martinez  
Xavier Moll Sánchez  
Laura Fresno Bermejo

**Prerequisites**

There are no official prerequisites to take the course, although it is advisable that the student has taken and pass

**Objectives and Contextualisation**

The subject of General Surgery and Anesthesia is a compulsory third year subject that introduces the student for the first time in the study of surgical treatment diseases and in anesthesiology. It is essential and basic for subsequent clinical studies. He teaches the basics of asepsis, wound treatment, skin reconstruction and the handling of surgical equipment as well as different suturing techniques. In addition, it lays the foundations for clinical anesthesia and analgesia in different animal species and the fluid therapy techniques common in the surgical patient. The training objectives of the subject are: Have knowledge of pathophysiology applied to surgical diseases Know and be able to respect the concept of asepsis and sterile area in the operating room. To know in a theoretical and practical way the most commonly used suturing techniques and materials. Recognize and know how to use basic surgical instruments appropriately. Be able to use the usual anesthetics

and anesthesia machine. Be able to monitor an anesthetized animal. Be able to use the most common skin reconstructive surgery techniques. Know the basics of fluid therapy and be able to apply it to the clinical situations explained.

## Competences

- Apply scientific method to professional practice, including medicine
- Attend to emergencies and perform first aid in veterinary science.
- Collect, preserve and issue all types of samples with the corresponding report.
- Comunicar la informació obtinguda durant l'exercici professional de manera fluïda, oralment i per escrit, amb altres col·legues, autoritats i la societat en general.
- Demonstrate knowledge and understanding of structural and functional disorders of the animal organism.
- Demonstrate knowledge and understanding of the general bases of medical and surgical treatments.
- Make clinical records and accurate and complete clinical exploration of animals.
- Perform the most common medical and surgical treatments of animals.
- Prescribe and dispense medicines correctly and responsibly in accordance with legislation, and ensure that the medicines and waste are stored and eliminated properly.
- Properly apply the principles of sterilisation of surgical equipment and the principles of surgical asepsis.
- Safely perform sedations and regional and general anaesthesia, and evaluate and control the pain.
- Treat and handle animals in a safe and humanitarian manner, and instruct other people to properly employ these techniques.
- Work effectively in single or multidisciplinary teams and show respect, appreciation and sensitivity for the work of others.

## Learning Outcomes

1. "Choose the most suitable suture materials for each intervention; type of material and thickness and type of needle."
2. Apply any measures needed to restrain animals: protecting the veterinarian without causing them injury or stress, and be aware of the risks involved in handling animals.
3. Apply haemostasis and drainage techniques.
4. Apply scientific method to professional practice, including medicine
5. Communicate information obtained during professional exercise in a fluid manner, orally and in writing, with other colleagues, authorities and society in general.
6. Define the bases for the treatment of wounds and their complications.
7. Describe the methods for administering hospital nutrition.
8. Distinguish the bases of fluidotherapy and apply them to the explained clinical situations.
9. Employ the most common reconstructive surgery techniques.
10. Explain the cardiopulmonary resuscitation techniques to be applied to anaesthetic complications.
11. Explain the methods of disinfection and sterilisation and their limitations.
12. Explain the surgical pathology of different systems of the organism.
13. Identify biopsy techniques applicable for obtaining samples from different organs and tissues, as well as knowing their limitations, complications and methods to preserve samples and enable later analysis.
14. Identify the anaesthetic particularities of different animal species.
15. Identify the limitations on the use and prescription of some anaesthetic and/or analgesic agents.
16. Interpret the principles for the manipulation of tissue and surgical dissection, as well as the concept of atraumatic surgery.
17. Monitor animals during anaesthesia.
18. Perform pre-anaesthesia estimations of surgical patients.
19. Perform the most frequent suture techniques, as well as knotting techniques with suture materials.
20. Properly recognise, order, pass, take and use general surgical instruments.
21. Properly use and wear a cap, mask and gaiters without losing the sterility of the surgical gown and gloves (open and closed techniques).
22. Recognise the generalities of post-operation cures applicable to any type of surgery.
23. Respect the concept of asepsis and sterile area in the operating theatre.
24. Secure animals before examinations, treatment or sample taking, causing the minimum possible stress.

25. Show knowledge of pathophysiology applied to surgical diseases.
26. Use anaesthesia apparatus.
27. Use anaesthetics and analgesics.
28. Work effectively in single or multidisciplinary teams and show respect, appreciation and sensitivity for the work of others.

## Content

The learning process of the contents of the subject takes place in an integrated way by attending the theoretical c  
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Theoretical contents:

**BLOCK 1: GENERAL SURGERY (15 hours)**

Topic 1: Introduction. Principles of surgical asepsis. Sterilization and disinfection

Topic 2: Surgical material. Type and use. Tissue manipulation. Surgical care

Topic 3: Hemostasis. Drains.

Item 4: Sutures I: Generalities and indications. Instrumental. Suture materials

Topic 5: Sutures II: Types of sutures. Practical applications. Complications

Topic 6: Trauma: stages of healing. Types of wounds. Thermal and electrical

Topic 7: Bandages

Item 8: Taking biopsies. Oncological surgery (resection of tumors, margins)

Item 9: Postoperative management of the surgical patient: generalities, complications

Item 10: Food (enteral-parenteral nutrition).

Item 11: Reconstructive skin surgery I (tension lines, flaps)

Item 12: Reconstructive skin surgery II (flaps, grafts)

Item 13: Fluid Therapy I

Item 14: Fluid therapy II

Item 15: Fluid therapy III

**BLOCK 2: ANESTHESIA (15 hours)**

The theoretical contents of this block will be taught during the first semester

Item 16: Pre-anesthetic assessment. Patient preparation.

Item 17: Anesthetic premedication

Item 18: Pain I: Pathways of pain. Opiate analgesics

Topic 19. Pain II: NSAIDs. Postoperative analgesia. Neuroleptoanalgesia

Topic 20: Concept of general anesthesia. Injectable anesthetic agents

Item 21: Maintenance of general anesthesia. Inhalation anesthesia.

Item 22: Ventilation I. General concepts. Spontaneous ventilation, physical

Item 23: Monitoring I (respiratory)

Item 24: Monitoring II (cardiovascular)

Item 25: Anesthetic complications. Cardiopulmonary resuscitation

Topic 26: Loco-regional anesthesia.

Item 27: Anesthetic considerations in dogs and cats

Item 28: Anesthetic considerations in small mammals

Item 29: Anesthetic considerations in ruminants and pigs

Item 30: Anesthetic considerations in horses

Practical contents:

**GENERAL SURGERY PRACTICES (LABORATORY):** practices lasting 2 hours

**PRACTICE 1:** Surgical block. Asepsis. Behavior in the operating room. Infection

PRACTICE 2: Sutures I. Approach and eversion  
 PRACTICE 3: Sutures II. Investment sutures. Empty viscera  
 PRACTICE 4: Skin reconstruction  
 PRACTICE5: Biopsies. Placement of drains. Feeding tubes. Catheters  
 PRACTICE 6: Wound care. Bandages  
 ANESTHESIA PRACTICES: 4 hours face-to-face workshops; anesthesia  
 ANESTHESIA WORKSHOPS (LABORATORY): Workshop lasting two hours  
 WORKSHOP 1: Routes of administration, IV route placement, infusion pumps  
 WORKSHOP 2: Operation of anesthesia machine and systems, endotracheal intubation  
 ANESTHESIA PRACTICES ANESTHESIA MODULE 1 WEEK AT FHCV  
 OHE (4H) ANESTHESIA PRACTICE IN SMALL GROUPS

Self-learning:

Material uploaded to the virtual campus before internships. It is mandatory.  
 \*\* Depending on the restrictions that may be imposed by the health authorities

## Methodology

Learning will be taught in a combined way, with theoretical teaching given in the form of classes and master classes and with practical teaching (\*). In this way the bases will be covered. The teaching material used in the subject will be available on the Virtual Campus. Theoretical teaching. Master classes. The master classes will be given with the help of power point schemes and practical cases. The necessary and basic information will be given so that, later, the knowledge can be applied.

Practical teaching. The practical sessions serve to apply and fix the knowledge that the students have acquired in the theoretical teaching.

\*\* Depending on the restrictions that may be imposed by the health authorities depending on the evolution of the COVID-19 pandemic

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Autoaprendizaje	24	0.96	4, 5, 10, 15, 14, 17, 23, 24, 28, 21, 27, 26
Practical teaching	12	0.48	1, 3, 6, 9, 11, 13, 16, 19, 22, 20, 23, 21
Practical teaching. Anesthesia practices (practice laboratory)	4	0.16	10, 17, 28, 26

Theoretical teaching.	30	1.2	1, 3, 6, 25, 7, 8, 9, 11, 12, 10, 15, 14, 13, 16, 17, 19, 22, 20, 23, 24, 21, 27, 26
Type: Autonomous			
Practical teaching	40	1.6	8, 15, 14, 17, 27, 26
Theoretical teaching	86	3.44	1, 3, 6, 25, 7, 8, 9, 11, 12, 10, 15, 14, 13, 16, 17, 19, 22, 20, 23, 21, 27, 26

## Assessment

The assessment will be developed throughout the course, which will monitor the teaching and learning process, € In order to be able to sum or obtain the final mark, it is necessary to have Written exams. There will be two partial written exams (one for block 1 and one for block 2). The topics in block 2 taught by David Prandi will be evaluated continuously.

Evaluation of practices. Internships will be assessed as follows:

- General surgery practices: a practical exam will be performed. The subject will be suspended = failed minimum skills. The subject will be evaluated with 0.1- 2 points on the final grade: depending on the skills.
  - Practical teaching of anesthesia (module, OHE practice and work: Attendance at all internships will be mandatory.
- Self-learning work.  
The self-learning work will consist of two parts:
- Preparation and discussion of daily cases of anesthesia during the internship.
  - Preparation of laboratory practices independently with the material.
- The grades obtained in self-learning will account for 20% of the final grade. Students who do not pass the practical exam or one of the two partial written exams will not be able to pass the course. Practice controls and self-learning work are not recoverable.  
A student who has taken a midterm exam and then fails any more exams will be considered as failed.  
\* "The proposed assessment may be subject to change depending on the evolution of the course."

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
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Partial written test - Block 1 (the note will include the continuous assessment of the topics taught by David Prandi).	30%	1	0.04	10, 15, 14, 17, 24, 27, 26
Partial written test - Block 2	30%	1	0.04	1, 3, 2, 6, 9, 11, 13, 16, 19, 18, 22, 20, 23, 28, 21
Practical test	20% of the final grade	1	0.04	1, 3, 6, 25, 7, 8, 9, 11, 12, 13, 16, 19, 22, 20, 23, 21
Self-learning	20%	1	0.04	4, 5, 7, 15, 14, 13, 17, 28, 27, 26

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