

## 68421 - Introduction to microsurgery research

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 68421 - Introduction to microsurgery research

**Faculty / School:** 104 - Facultad de Medicina

**Degree:** 530 - Master's in Introduction to Medical Research

**ECTS:** 5.0

**Year:** 1

**Semester:** Second semester

**Subject type:** Optional

**Module:**

### 1. General information

#### 1.1. Objectives of the subject

The subject and its expected results respond to the following approaches and objectives:

The subject aims to introduce the student to the possibilities of experimental surgery, with special emphasis on microsurgery. Since the student has a basic knowledge of research (basic research methodology), they will be able to critically analyse and propose a research activity in microsurgery as a working tool.

#### 1.2. Context and meaning of the subject in the degree program

This subject is oriented to specialists, residents and specialized surgery nurses, interested in learning basic microsurgical techniques as well as the requirements to perform an experimental study in laboratory animals. It is intended to complement the training of any researcher who uses experimental surgery as a tool.

Approaches and objectives aligned with the SDGs of the UN 2030 agenda (<https://www.un.org/sustainabledevelopment/es>). The acquisition of the learning results of the subject provides training and competence to contribute to its achievement.

Objective 3: Health and well-being. Objective-4: Quality education

#### 1.3. Recommendations for taking the subject

Students must have a minimum knowledge of basic surgical technique, have a specialty or have started a residency program in a surgical or medical-surgical specialty. They should be familiar with the experimental surgical environment.

### 2. Learning results

#### 2.1. Competencies

Upon completion of the subject, the student will be able to:

Know and perform the experimental microsurgical techniques described in the subject content.

Know the requirements and steps to follow to conduct an experimental study with a laboratory animal

Propose an experimental surgery research project.

#### 2.2. Learning results

Upon completion of this subject, the student will be able to:

Know the necessary elements that will allow them to initiate a research activity in microsurgery:

-Handling of microsurgical instruments

-Knowledge of image magnification systems

-Performance of basic microsurgical manoeuvres.

-Handling of small laboratory animals

-Know the requirements to plan an experimental surgery project.

-Be able to propose a study based on the experimental surgery models presented in the subject.

#### 2.3 Importance of learning results

Learning the techniques and possibilities of microsurgery will enable the student to design work in the experimental surgery environment, with special emphasis on microsurgery.

### 3. Syllabus

Theoretical Lessons (Classroom-4 Faculty of Medicine)

1-Introduction to microsurgery. History of microsurgery. Handling of the experimental animal.

2-Microsurgical instruments. Sutures and needles. Handling of surgical microscope and magnifying glasses. Pharmacology in microsurgery.

3-Basic microsurgical techniques. Tremor control and suturing techniques. Mechanical suture. Arterial and venous suture. Nerve suture.

4-Methodology of research in an experimental animal. What steps should I follow to conduct a study in an experimental animal?

5-Microsurgical research models in rats.

6-Other models of animal experimentation.

Practical Program (CIBA experimental operating room): the most important experimental models in rats studied in the subject will be developed:

1.- McFarlane's flap

2.- Neuroorrhaphy of sciatic nerve

3.- Arterial anastomosis (carotid and aortic arteries)

#### **4. Academic activities**

All activities will be scheduled on Wednesdays April 3, 10, 17, 24 and May 8, 15 and 22 from 4 to 8 pm.

The papers shall be submitted to the professor in charge before June 30, 2024.

#### **5. Assessment system**

Participation: attendance and participation of the students to the theoretical and practical classes will be valued.

Development of a research project in experimental surgery: the student must propose a research project in experimental surgery, being able to make use of the models presented in the subject.

#### **6. Sustainable Development Goals**

3 - Good Health & Well-Being

4 - Quality Education