

UNIVERSITY DIPLOMA IN MEDICINE

Concentrations:

- Laparoscopy
- Microsurgery

Main Language of Instruction:

French ☒ English ☐ Arabic ☐

Campus Where the Program Is Offered: CSM

OBJECTIVES

University Diploma in Medicine, Concentration: Laparoscopy

It aims to reach an advanced level in laparoscopic and robotic surgery.

University Diploma in Medicine, Concentration: Microsurgery

It aims to reach an advanced level in microsurgery.

PROGRAM LEARNING OUTCOMES (COMPETENCIES)

University Diploma in Medicine, Concentration: Laparoscopy

- Develop basic psychomotor skills in laparoscopic and robot-assisted surgery
- Develop complex psychomotor skills in laparoscopic and robot-assisted surgery

University Diploma in Medicine, Concentration: Microsurgery

- Develop basic and advanced microsurgical skills

ADMISSION REQUIREMENTS

University Diploma in Medicine, Concentration: Laparoscopy

- Surgeons and surgical residents ($\geq R3$) from different specialties: digestive surgery, pediatric surgery, gynecology and urology.

University Diploma in Medicine, Concentration: Microsurgery

- Surgeons and surgical residents ($\geq R3$) from different specialties: ophthalmology, orthopedic surgery, pediatric surgery, plastic surgery, head and neck surgery, neurosurgery, vascular surgery, urology, cardiothoracic surgery.

PROGRAM REQUIREMENTS

University Diploma in Medicine, Concentration: Laparoscopy

15 Credits: Required Courses (15 credits)

Laparoscopic Suturing (3 Cr.), Digestive Anastomoses (2 Cr.), Specific Surgical Procedures (2 Cr.), Gastrointestinal Surgery (2 Cr.), Solid Organ Surgery (2 Cr.), Laparoscopy in Urology (2 Cr.), Laparoscopy in Gynecology (2 Cr.)

University Diploma in Medicine, Concentration: Microsurgery

15 Credits: Required Courses (15 credits)

Intensive Sessions: Vascular Sutures and Flaps (5 Cr.), Intensive Sessions: Grafts and Flaps (5 Cr.), Plastic, Orthopedic and Neurosurgery (5 Cr.)



COURSE DESCRIPTION

University Diploma in Medicine, Concentration: Laparoscopy

Laparoscopic Suturing

3 Cr.

Basic Psychomotor Skills

Laparoscopy: Familiarization with the laparoscopic tower, surgical instruments, and trocars; setup and operation of the laparoscopic tower; troubleshooting of technical issues; and application of safety procedures. Practical training includes exercises in depth perception, hand-eye coordination, bimanual coordination, sliding-knot tying, and tissue dissection.

Robotic Surgery: Familiarization with the robotic surgical console and robotic arms; setup and operation of the robotic surgical system; troubleshooting of technical issues; and application of safety procedures. Practical training includes exercises in depth perception, hand-eye coordination, bimanual coordination, and controlled transection of anatomical structures.

Complex Psychomotor Skills

Laparoscopy: Training in various laparoscopic suturing techniques, including intracorporeal and extracorporeal knot tying and continuous suturing. Practical training in an animal laboratory.

Robotic Surgery: Training in various robotic suturing techniques using virtual reality simulation; manipulation of robotic arms and performance of suturing exercises on a pelvic trainer. Practical training in an animal laboratory.

Digestive Anastomoses

2 Cr.

Theoretical Courses – Basic Laparoscopic and Robotic Surgery

Laparoscopic suturing techniques; minimally invasive surgery: past, present, and future; surgical instruments, patient positioning, and pneumoperitoneum; fundamentals of robotic general surgery; physiological changes during laparoscopic surgery; and introduction to robotic surgery.

Basic Psychomotor Skills

Ten weeks of structured training in laparoscopic suturing and practical training on a robotic surgical console using virtual reality simulation, with 4 hours of training per day, once per week.

Specific Surgical Procedures

2 Cr.

Advanced Laparoscopic and Robotic Surgery: Anesthesia for laparoscopic surgery.

Advanced Psychomotor Skills: Ten weeks of structured training in laparoscopic suturing, laparoscopic knot tying, and robotic suturing, with 4 hours of training per day, once per week.

Gastrointestinal Surgery

2 Cr.

Advanced Laparoscopic and Robotic Surgery: Minimally invasive surgery in digestive surgery; minimally invasive surgery in pediatric surgery; surgical robotic systems.

Solid Organ Surgery

2 Cr.

Eight practical assessments: six in a dry lab and two in an animal lab.

Laparoscopy in Urology

2 Cr.

Advanced Laparoscopic and Robotic Surgery: Minimally invasive surgery in urology.

Laparoscopy in Gynecology

2 Cr.

Advanced Laparoscopic and Robotic Surgery: Minimally invasive surgery in gynecology.



University Diploma in Medicine, Concentration: Microsurgery

Intensive Sessions: Vascular Sutures and Flaps

5 Cr.

Intensive session 1: Vascular suturing in rats (2 days/session): handling and manipulation of surgical instruments and surgical microscopes; principles of microscopic dissection and suturing; end-to-end anastomosis of the abdominal aorta; interposition of an external jugular vein graft into the common carotid artery in rats; abdominal aortic bypass; end-to-end anastomosis of the femoral artery and vein.

Weekly training (4 credits): Fourteen weeks of training in vascular suturing in rats (4 hours/day/week).

Intensive Sessions: Grafts and Flaps

5 Cr.

Intensive Session 2: Skin flap management in rats (2days/session – 1 credit): skin flap in situ; skin flap transposition to the other leg; skin flap transfer to the neck; renal transplantation; renal autotransplantation.

Weekly Training (4 credits): Fourteen weeks of training in skin flap management in rats (4 hours/day/week).

Plastic, Orthopedic and Neurosurgery

5 Cr.

Theoretical Courses (4 Cr.)

a) Principles of Basic Microsurgery: Theory and principles of flaps; principles of digital and limb replantation; peripheral nerve and microsurgery; basic principles of vascular microsurgery.

b) Principles of Advanced Microsurgery: Microsurgical facial reanimation; head and neck reconstructive microsurgery; applications of microsurgery in orthopedics; microsurgery for peripheral nerve tumors; microsurgery for hemodialysis: vascular access and lymphedema.

Assessment (1 Cr.)

a) 2 practical midterm exams

b) Final exam: written and practical

