UNICAMILLUS

Degree in Medicine and Surgery

Integrated teaching: **Emergency**
SSD: **MEDS-23/A**

Professor Responsible: Prof. **Cesare Gregoretti** mail: cesare.gregoretti@unicamillus.org
Total CFU: 3

PREREQUISITES

There are no specific prerequisites or propaedeuticities. However, since this is a "cross-curricular" subject, it is desirable for students to have a good knowledge of systemic physiology and pathology and pharmacology, particularly with regard to the cardiovascular system, respiratory system, and pain pathways.

LEARNING OBJECTIVES:

The teaching aims to convey the main concepts of Anesthesia, Resuscitation, Intensive Care and Pain Therapy with which the students will interface most often throughout their professional career, and will constitute one of the first moments in which they will need to combine concepts from multiple subjects for the purpose of integrated patient management. Special emphasis will be placed on the recognition of major clinical deteriorating conditions, their initial stabilization, and cardiopulmonary resuscitation.

LEARNING OUTCOMES

Knowledge and Understanding:

Upon completion, students will be able to:

- Describe the main techniques and drugs used in anesthesia;
- Recognize the main signs/symptoms underlying life-threatening conditions and describe the most appropriate workup and the basics of immediate management;
- Describe the basics of evaluating, setting up and managing analgesic therapy;
- Describe the main aspects of respiratory pathophysiology, oxygen therapy and mechanical ventilation ;
- Describe the main aspects of basic cardiopulmonary resuscitation and take part in advanced-level management of cardiac arrest;
- Describe the main aspects related to shock management and therapy monitoring;
- Describe and define the basic treatment lines for the main metabolic emergencies, burns, drowning and electrocution.

Applying knowledge and understanding

The teaching aims to provide an integrated view of emergency-urgency pathology and of anesthesiologic/intensivist/antalgic management. Students will then be able to interface with specialists in the field by providing the relevant elements, actively participate in a cardiopulmonary resuscitation activity in basic and advanced modes, and provide their patients with the main concepts regarding anesthesia.

Communication skills
Students will be able to actively participate in integrated patient management, providing necessary information in a timely manner and collaborating in the management itself.

Making judgements
Upon completion, students will have acquired sufficient knowledge and understanding to be able to make diagnosis and/or treatment in major emergency-urgency settings, and to request specialist consultations and appropriate instrumental or laboratory tests where required.

Learning ability
Students will have the necessary tools to be able to further deepen their skills and knowledge, including through research of the scientific literature.

SYLLABUS

- Pharmacology in anesthesia: sedatives, analgesics, neuromuscular blocking agents;
- Basics of general anesthesia, preoperative evaluation, postoperative monitoring;
- Basics of pain medicine;
- Cardiac arrest and cardiopulmonary resuscitation: Basic and Advanced Life Support (American Heart Association guidelines);
- Clinical deterioration, shock, sepsis and hemodynamic support;
- Airway management;
- Respiratory pathophysiology, oxygen therapy and mechanical ventilation, blood gas analysis;
- Major trauma;
- Main metabolic urgencies/emergencies, burns, drowning, electrocution.

COURSE STRUCTURE

The teaching consists of 30 total hours: part will consist of lectures, part of hands-on training on specific subjects related to the teaching. Lectures will also make use of slides and videos, and time will be spent on discussion of clinical cases. Attendance is mandatory.

COURSE GRADE DETERMINATION

The exam will consist of two parts: a mandatory written exam and an optional oral exam.
The written exam will consist of a single-answer multiple-choice written test on topics covered in class. Thirty-one questions will be asked in 45 minutes. The score will be given as follows: 1 point for each right answer, 0 points for no answer or wrong answer. A score of 31/31 will be considered as "cum laude".
Students who will request, and with a minimum score of 18/31 on the written test, will be allowed to take part in the oral test, during which they will be given the opportunity to demonstrate their preparation by discussing the topics of the teaching, to reason about problems inherent in the subject demonstrating the ability to make connections and express themselves in an appropriate scientific language.

The final assessment will reflect the outcome of the written test and the oral examination as judged by the professor.

The exams will be assessed according to the following criteria:

- **failed** : significant deficiencies and/or inaccuracies in knowledge and understanding of the topics; limited analytical and synthesis skills, frequent generalizations.
- **18-20**: knowledge and understanding of the topics are barely sufficient with possible imperfections; adequate skills in analysis, synthesis, and independent judgment.
- **21-23**: knowledge and understanding of the topics are routine; correct skills in analysis and synthesis with coherent logical reasoning.
- **24-26**: reasonable knowledge and understanding of the topics; good skills in analysis and synthesis with arguments expressed rigorously.
- **27-29**: comprehensive knowledge and understanding of the topics; remarkable skills in analysis and synthesis. Good independence in judgment.
- **30-30L**: Excellent level of knowledge and understanding of the topics. Remarkable skills in analysis, synthesis, and independence in judgment. Arguments expressed in an original manner.

RECOMMENDED TEXTS AND BIBLIOGRAPHY

https://cpr.heart.org/en/resuscitation-science/cpr-and-ecc-guidelines
https://www.asahq.org/standards-and-practice-parameters
https://www.sccm.org/SurvivingSepsisCampaign/Guidelines

Stoelting's Pharmacology & Physiology in Anesthetic Practice – Pamela Flood et al., edited by Wolters Kluwer.
Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) 14th Edition – John E. Hall, Michael E. Hall, edited by Elsevier

FOR FURTHER INSIGHT (Optional):

Miller's Anesthesia 9th Edition - Michael A. Groppe et al., edited by Elsevier
Clinical Anesthesia, 8e – Paul G. Barash et al., edited by Wolters Kluwer
ATLS Advanced Trauma Life Support 10th Edition Student Course Manual - American College of Surgeons
The professor will provide all necessary notions during lesson time, and the slides. Further materials/resources may be provided, if needed or deemed appropriate.