Sveučilište u Rijeci
University of Rijeka

Sveučilište u Rijeci • Fakultet dentalne medicine
University of Rijeka • Faculty of Dental Medicine
Krešimirova 40/42 • 51000 Rijeka • CROATIA
Phone : + 385 51 559 200; 559 202, 559 203

Course: Anaesthesiology, Reanimatology and Intensive Care Medicine
Course Coordinator: Prof. Željko Župan, MD, PhD
Course Collaborators: Prof Vlatka Sotošek MD, PhD; Asst Vlasta Orlić Karbić, MD, PhD, Asst prof Mirna Bobinac, MD, PhD, Asst Vuksan Ivan, MD, Asst Bura Matej, MD
Department: Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine
Study program: University Integrated Undergraduate and Graduate Study of Dental Medicine (in English)
Study year: 3th
Academic year: 2023/24

SYLLABUS

COURSE DESCRIPTION (a brief description of the course, general instructions, where and in what form the lessons are organized, necessary equipment, instructions for attendance and preparation for classes, student obligations, etc.):

Course **"Anesthesiology, Reanimatology and Intensive Care Medicine** is a compulsory Course on the 3th year of the Integrated Undergraduate and Graduate Study of Dental Medicine Medicine in English. It consists of 12 hours of lectures, 8 hourse of seminars, 15 hours of practicals, and a total of **35 hours** (**2,5 ECTS credits**). The Course is held at the Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Clinical Hospital Center Rijeka and at Campus of the University of Rijeka.

The aim of the course are: is the acquisition of the basic knowledge and skills as well as competencies in the field of anesthesiology and resuscitation related to the scope of dental medicine. The aim of the Course is to acquaint students with the basic knowledge and techniques of performing certain degrees of sedation, analgesia and anesthesia in dental practice and dental anesthesiology. The goal of the Course is also to train students to perform skills in the field of monitoring of the basic body vital functions as well as basic and advanced resuscitation competencies that they can apply in their everyday dental clinics procedures.

The Course content:

Anesthesiology: to present the history of anesthesiology and connect it with today's development of dental practice. Clarify the basic methods of sedation and anxiety with pain control in everyday dental medicine. Explain conscious analgosedation and deep sedation and general anesthesia use in dental medicine. Describe inhalation sedation in dental medicine. Explain the need for patient preparation for sedation and anesthesia in dental medicine. Ensure the performance of dental procedures in patients on chronic anticoagulation peroral and antithrombotic therapy. To clarify some methods of regional anesthesia in dental medicine and to consider the problems associated with local anesthetics. Explain the approach of multimodal therapy of acute pain after dental procedures.

Reanimatology: acquire knowledge and skills of basic and advanced life support procedures (BLS and ALS).

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Teaching:
Classes are organized in the form of lectures and practicals. The estimated duration of Course including exam is 1 week. Practicals are supervised by anesthesiologist and intensive care medicine physician, and the student are actively involved in practicals. Teaching staff will discuss with the students practicals. During Course will be held obligatory colloquium from BLS and ALS. By completing all teaching activities, the students must pass obligatory written test. By completing all teaching activities, the students will acquire 2,5 ECTS credits.

Assigned reading:

Šustić A, Sotošek V et al. Handbook of Anesthesiology, Reanimatology and Intensive Care Medicine for student of Medicine and Dental Medicine, Zagreb: Medicinska naklada; 2021.

Optional/additional reading:

Allman KG, Wilson IH. Oxford handbook of anaesthesia. Oxford: Oxford University Press; 2016.
Recent and relevant article from field of dental medicine

COURSE TEACHING PLAN:

Lectures:

P1. Introduction to the course and historical review
Learning outcomes:
Understanding to the aims, contents, and requirements of the course. To know brief historical overview of anesthesiology, reanimatolology and intensive medicine and connect with today development of dental medicine.

P2. Methods of sedation and anxiety with pain control in dental medicine
Learning outcomes:
Get to know the most common causes of anxiety and pain in patients in dental practice.
Get to know the methods of anxiety and pain control in dental medicine.
Acquire knowledge about different anxiety and pain control procedures in dental practice.

P3. Patients preparing for sedation and general anaethesia in dental practice
Learning outcomes**:**
To explain the preparing procedure for sedation and anaesthesia.
To know ASA classification.
To explani the methods of assessments for periprocedural risc.
Get to know use medication for periprocedurales premedication.

P4. Deep sedation and general anaesthesia in dental medicine
Learning outcomes:
To know deep sedation.
Get to know procedures in deep sedation.
Understanding the general anaesthesia and explaination of the methods of its performance.
To understand the stages of general anaesthesia.

P5. Inhalation sedation in dental practice
Learning outcomes
To know basic pharmacodynamic and pharmacocinetics of inhalation anesthetics.
To know procedures to delivery general inhalation anaesthetics.

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P6. Concious sedation in dental practice
Learning outcomes:
To know basic principles of concious sedation in dental medicine.
To know with practical procedures of concious sedation in dental medicine
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P7. What are the techniques used in Basic Life Support?
Learning outcomes**:**
To know the knowledge and techniques in BLS.
To know the recongized the signs of cardiac arrest, significant haemodynamic failure and respiratory distress.
To know recognition of signs of sudden cardiac arrest, heart attack, stroke, and foreign body airway obstruction, and the performance of cardiopulmonary resuscitation (CPR) and defibrillation with an automated external defibrillator.

P8. What are the techniques used in Advanced Life Support?
Learning outcomes**:**
To know the knowledge and techniques in ALS.
To know a set of life-saving protocols and skills that extend beyond Basic Life Support (BLS) and used to provide urgent treatment to cardiac emergencies such as cardiac arrest, stroke, myocardial infarction, and other such conditions which can happened in dental procedures.

P9. Dental procedure in patinets with oral anticoagulation and antithrombotic therapy.
Lerning outcomes:
To know the mechanisms of action of antiplatelet and anticoagulation drugs.
Familiarize yourself with anesthetic techniques in patients on anticoagulation and antiplatelet therapy.

P10. Regional anesthesia and local anesthetics
Learning outcomes:
To describe different techniques of regional anesthesia. To understand the basic principles of regional anesthesia. To describe indications and contraindications for regional anesthesia. To describe mechanism of actions and characteristics of local anesthetics.

P11. Local anesthetics and its toxicity
Learning outcomes:
Get to know the pharmacodynamics and pharmacokinetics of local anesthetics.
Get to know the problems related to the application of local anesthetics in dental practice.
Know how to recognize the toxic effect of local anesthetics and apply appropriate treatment procedures.

P12. Multimodal therapy of pain control in dental medicine
Learning outcomes:
Define of acute pain in dental medicine.
Understand the pathways of pain transmission.
Understand the methods of determining pain intensity.
Understand and explain pharmacological and non-pharmacological methods of treating acute pain after dental procedures.

Seminars with explanation:

The seminars are held in the building of the Department of Biotechnology in the Sušak Campus, in the available space. During the seminar, students will actively discuss topics of interest in the field of anesthesiology and resuscitation in dental practice with the leader.

S1 and S2. Treatment of relevant topics of interest to students of dental medicine from recent literature

Learning outcomes

Acquire knowledge and learn to actively participate in the discussion of relevant topics in the field of anesthesiology and resuscitation in dental practice.

List of practical with explanation:

Exercises from the course Anesthesiology, resuscitation and intensive care are performed at the Clinic for Anesthesiology and Intensive Care of the Rijeka Clinical Hospital Center in Sušak. Exercises in reanimation take place in the Simulation Center - Cabinet of Skills on the University campus in Sušak, building of the Department of Biotechnology.
During the exercises at the Clinic for Anesthesiology and Intensive Care of the Rijeka Clinical Hospital Center in Sušak, students will practice the procedures for assessing the state of consciousness, become familiar with and practice manual ventilation, monitor the patient's basic hemodynamic parameters, practice how to monitor the patient's basic life functions, and practice setting up intravenous times.
During exercises in resuscitation, students will practically perform the acquired knowledge of basic and advanced life support on mannequins and computer simulators.

V1. Basic life support procedures, BLS (English Basic Life Support)
Learning outcomes:
Master basic life support procedures.
Familiarize yourself with the algorithm of basic life support and learn to act according to its guidelines.
Master the use of an automatic external defibrillator.

V2. Procedures of advanced life support, ALS (English Advanced Life Support)
Learning outcomes:
Master advanced life support procedures.
Familiarize yourself with the algorithm of advanced life support and learn to act according to its guidelines.

V3. Basics of anesthesiology, recognition of vital sign and function failure:
Learning outcomes:
Familiarize yourself with the pre-anesthesiological assessment of the patient and the procedures for reducing the client's risk for sedation and anesthesia.
Get to know and adopt the basic knowledge and skills of monitoring the client's basic vital functions, state of consciousness, hemodynamic and respiratory stability, establishment of an intravenous route and interventions to maintain airway patency, oxygen therapy, assisted breathing, use of basic vasoactive drugs to raise blood pressure and administration of intravenous solution.
Get to know the techniques of performing general and regional anesthesia.
Master the operation of various devices for monitoring vital functions of clients during sedation and anesthesia.

Student obligation:

Students are obliged to regularly attend and actively participate in all forms of classes.

Student assessment:

Student assessment is carried out in accordance with the current University of Rijeka Study Regulations and the Student Regulations at the Faculty of Dental Medicine Rijeka (adopted by the Faculty Council of the Faculty of Dental Medicine Rijeka).
Students' performance will be evaluated during the course and at the final exam. Out of a total of 60 credits, a student can earn 30 credits (50%) during the course, and 30 credits (50%) at the final exam.

Student assessment is performed using ECTS (A-F) and number system (1-5). Student assessments in ECTS system is carried out by is performed by absolute distribution, and according to graduate assessment criteria.

The student acquires grade points by completing the tasks as follows.

Students are evaluated using a combination of ECTS grades and numerical grades ranging from 5A to 1F.

More than 50% of the grade points that could be obtained during classes through forms of continuous monitoring and evaluation of students in accordance with the Rules for taking the final exam must be collected. The threshold for the final exam cannot be less than 50% of the successfully completed written exam.

The student acquires grade points by actively participating in classes, completing assigned tasks and taking midterm exams as follows:

I**. During the class, the following are assessed (maximum 30 points):**
a) class attendance (up to 3 credits)
b) compulsory colloquium (up to 27 points)

a) Class attendance (up to 3 points) explanation:

A student can miss 30% of classes solely for health reasons, which is justified by a doctor's excuse. Attendance at lectures and exercises is mandatory. Compensation for exercises is possible with prior agreement with the leader.
If a student, excused or unjustified, misses more than 30% of classes, he cannot continue following the course and loses the opportunity to take the final exam. With this, he collected 0 ECTS points and was graded F.

Grading of class attendance (lectures and exercises) will be done in the following way:

%	attendance grade points
70 - 85	1
86 - 100	3

b) Mandatory colloquium (up to 25 points)

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During classes, all students are required to take a colloquium in basic and advanced life support, where they gain a maximum of 27 points (range of 14-27). The colloquium is conducted in the "Skills Cabinet" with the use of a simulation computer program.
During the colloquium, the leader evaluates the acquired knowledge and skills of each student and assigns points in the following way:

Credits	Grade
16	**is enough**
20	**good**
25	**vary good**
27	**excellent**

Final exam before writing test (max. 30 marks in total)

Who can take the final exam:
Students who have obtained more than 15 points during classes take the mandatory final exam, where they can obtain a maximum of 30 points.
Students who achieved 0-49% of grade points during classes are graded F (failed), cannot gain ECTS points and must re-enroll in the course.

Who cannot take the final exam:
Students who have obtained 15 points or more (>50%) during the course have the right to sit for the final exam (they enroll in the second year course).

The final exam is a written exam. It carries 30 evaluation points (range 15-30).

Success in the final exam is converted into grade points as follows:

Correct answers	Evaluation points
148-150	30
145-147	29
142-144	28
139-141	27
136-138	26
133-135	25
130-132	24
127-129	23
124-126	22
121-123	21
118-120	20
115-117	19

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112-114	18
109-111	17
106-108	16
103-105	15
100-102	14
98-99	13
96-97	12
94-95	11
92-93	10
90-91	9
88-89	8
86-87	7
84-85	6
82-83	5
80-81	4
78-79	3
76-77	2
75	1

In order to pass the final exam and the final evaluation (including the addition of previously achieved evaluation points during classes), the student must be positively evaluated on the final exam and achieve a minimum of 15 evaluation points (50%).

Grading in the ECTS system is done by absolute distribution, that is, based on the final achievement:

A – 90 - 100% points
B – 75 - 89.9%
C – 60 – 74.9%
D -- 50 - 59.9%
F – 0 - 49.9%

Grades in the ECTS system are translated into a numerical system as follows:

A = excellent (5)
B = very good (4)
C = good (3)

D and E = enough (2)
F = insufficient (1)

Other notes (related to the course) important for students:
Teaching content and all information related to the course, as well as exam dates, will be available on the web sites of the Department of Anesthesiology, Reanimation and Intensive Care, Faculty of Dental Medicine, University of Rijeka.

The Number of students on the Course 2023/2024: nearly 15 students

They ara divided into two groups: A/7 students and B/8 students according to alphabetical order of they last name

Consultations with the students will be held at the Clinic and Department (locality Sušak) with secretary Diana Javor from 10:00 to 12:00 a.m. every work day during the academic year. The consulations with Course director prof Željko Župan, MD, PhD will also held every day at the same place ann time, with prior notice at phone 051 407400.

COURSE SCHEDULE (for the academic year 2023/2024)

Date	Lecture (time and place)	Seminars (time and place)	Practicals (time and place)	Teachers
14th March 2024	**P1** (8:15-9:00) Hall 357/III floor, Kampus,			Prof Željko Župan, MD, PhD
14th March 2024	**P2** (9:15-10:00) Hall 357/III floor, Kampus			Prof Željko Župan, dMD, PhD
14th March 2024	**P3** (10:15-11:00) Hall 357/III floor, Kampus			Prof Željko Župan, MD, PhD
14th March 2024			Practicals by groups: : **V1-V2** (16:00-19:45) Kabinet Kampus, **Groups A-B;** **V3** (12:00-15:45)	**"Kabinet" of the skills:** **A-**asst Vuksan Ivan, MD med. **B-**asst Bura Matej, MD Prof Željko Župan, dMD, PhD

			Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Clinical Hospital Center Rijeka Location Sušak, **Group A**	
15th March 2024	**P4-P5** (8:15-9:45) Hall 357/III floor, Kampus,			Prof Vlatka Sotošek MD, PhD
15th March 2023	**P6** (9:45-10:40) Hall 357/III floor, Kampus			Prof Vlatka Sotošek MD, PhD
15th March 2023	**P7** (10:45-11:30) Hall 357/III floor, Kampus **P8** (11:30-12:15) Hall 357/III floor, Kampus,			Asst prof Janja Turčuković, MD, PhD
15th March 2023			Practical by groups: **V1-V2** (16:00-19:45) Kabinet Kampus, **Groups A-B**	**"Kabinet" of the skills:** **A -** asst Vuksan Ivan, MD **B -** asst Bura Matej, MD
18th March 2024		**S1-S2** (8:15-11:15) Hall 269/II floor, Kampus,		Prof Vlatka Sotošek MD, PhD .
18th March 2024	**P9** (11:20-12:10) Hall 269/II floor, Kampus,			prof Željko Župan, MD,PhD
18th March 2024			Practical by groups: **V3** (13:00-16:00) Department of Anaesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Clinical Hospital Center Rijeka Location Sušak,	**Clinic/ICU:** **B -** asst Mima Bobinac, MD, PhD

			Groups B **V1-V2** (16:00-19:45) Kabinet Kampus, **Group A-B**	**A -** asst Vuksan Ivan, MD **B-** asst Jan Maroević, MD
19th March 2024	**P10 (**8:15-9:00**)** Hall 268/II floor, Kampus,			Asst Vlasta Orlić Karbić, MD, PhD
19th March 2024	**P11** (9:10-10:00) Hall 268/II floor, Kampus,			Asst Prof Vlasta Orlić, MD, PhD
19th March 2024	**P12** (10:15-11:00) Hall 268/II floor, Kampus,			Asst Prof Vlasta Orlić, MD, PhD
.		**S1-S2** (11:15-14:45) Hall 268/II floor, Kampus,		Prof Vlatka Sotošek MD, PhD
Mandatory colloquium from BLS and ALS after completion of V1 and V2			**Kabinet Kampus, at the end of block of practicals**	asst Vuksan Ivan, MD asst Bura Matej, MD

List of lectures, seminars and practical:

	LECTURES	HOURS of TEACHING	PLACE of MAINTAINANCE
P1	Introductory lecture and a brief historical overview of the development of anesthesiology	1	Hall 357/III floor or..., Kampus
P2	Methods of sedation and anxiety and pain control in dental medicine	1	Hall 357/III floor or..., Kampus
P3	Preparation of patients for sedation and anesthesia in dental medicine	1	Hall 357/III floor or..., Kampus
P4	Conscious analgosedation in dental medicine	1	Hall 357/III floor or..., Kampus
P5	Inhalation sedation in dental medicine	1	Hall 357/III floor or..., Kampus
P6	Conscious analgosedation in dental medicine	1	Hall 357/III floor or..., Kampus

P7	What are the techniques used in Basic Life Support?	1	Hall 357/III floor or..., Kampus
P8	What are the technique in Advanced Life Support?	1	Hall 357/III floor or..., Kampus
P9	Dental procedures in patients on anticoagulation and antiplatelet therapy	1	Hall 269/II floor or..., Kampus
P10	Regional anesthesia in dental medicine	1	Hall 268/II floor or..., Kampus
P11	Local anesthetics and toxicity of local anesthetics s	1	Hall 268/II floor or..., Kampus
P12	Multimodal therapy of acute pain after dental procedures	1	Hall 268/II floor or..., Kampus
	Total numbers of hours	**12**	

	SEMINARS (the title of seminars)	**HOURS of TEACHING**	**PLACE of MAINTAINANCE**
S1	Treatment of relevant topics from recent literature of interest to students of dental medicine	4	Hall 269 and 268/II floor or..., Kampus
S2	Treatment of relevant topics from recent literature of interest to students of dental medicine	4	Hall 269 and 269/II floor or..., Kampus
	Total numbers of hours	**8**	

	PRACTICAL (exercise topics)	**HOURS of TEACHING**	**PLACE of MAINTAINANCE**
V1	BLS (engl. Basic Life Support	5	"Kabinet" Kampus
V2	ALS (engl. Advanced Life Support)	5	"Kabinet" Kampus
V3	The basics monitoring and supervision of the respiratory and haemodynamic vital functions, setting up an intravenous line, releasing the airway, oygen therapy and non-invasive ventilation support, i.v. application of basic vasoactive drugs	5	Department of Anesthesiology, Reanimatology, Emergency and Intensive Care Medicine, Clinical Hospital Center Rijeka, Location Sušak/ICU
	Total numbers of hours	**15**	

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	EXAM DATES
1.	**20th March 2024** – Written test and final examination of the studensts at the end of the Course will be held at Hall 268/II floor from 9:00 to 11:00 a.m.; Kampus
2.	**19th April 2024**
3.	**24th May 2024**

	Lectures	Seminars	Practicals	Total
Total number	**12**	**8**	**15**	**35**
On-line	**0**	**0**	**0**	**0**
Percentage	**/**	**/**	**/**	**/**