Faculty of Medicine in Rijeka

Curriculum
2024/2025

For course

Simulation of Clinical Skills

Study program:	**Medical Studies in English (R)** University integrated undergraduate and graduate study
Department:	**Department of Anesthesiology, Resustacitation and Intensive Care Medicine**
Course coordinator:	**doc. dr. sc. Tarčuković Janja, dr. med, DESAIC**
Year of study:	**6**
ECTS:	**6**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

Course information (short description of the course, general information, and instructions, where and in which form is the course organized, necessary tools, instructions on class attendance and preparation, student obligation, etc):

Simulation of Clinical Skills is a mandatory course in the sixth year of the Integrated Undergraduate and Graduate University Study of Medicine in English. Comprising 8 hours of lectures and 125 hours of practicals, the course totals 133 hours, accounting for 6 ECTS.

The course is held by an experienced team of medical educators and physicians from different departments, including Anaesthesiology, Resuscitation, Emergency, and Intensive Care Medicine, Surgery, Urology, and Paediatrics. These educators are based at the Faculty of Medicine, University of Rijeka, and Clinical Hospital Centre Rijeka. On top of live lectures and workshops, the course is comprised of obligatory online asynchronous written materials and video-tutorial and demonstrations.

The primary objective of this course is to equip sixth-year medical students with the essential skills and knowledge required to respond effectively to diverse emergency medical conditions. The course employs advanced simulation techniques to enhance students' decision-making skills, practice their clinical judgement, and develop effective communication and teamwork. This is achieved through a combination of concise theoretical overviews of specific medical skills and/or emergency medical conditions, and the practical application of this knowledge in simulations of real-world scenarios.

COURSE LEARNING OUTCOMES

After finishing the course, the student should be able to:

A. **COGNITIVE DOMAIN – KNOWLEDGE**

1. List the most common medical emergencies, including various causes of acute respiratory and circulatory failure, acute coronary syndrome and malignant arrhythmias, sudden neurological deterioration, sepsis and septic shock, fluid and electrolyte imbalances, hypovolemic shock, acute poisoning, burns, polytrauma, and paediatric emergencies.
2. Describe the typical clinical presentation and diagnostic tools for evaluating common medical emergencies.
3. Describe the necessary medication, procedures, and equipment for the management of the most common medical emergencies.

A. **PSYCHOMOTOR DOMAIN – SKILLS**

1. Recognize and manage cardiorespiratory arrest according to advanced life support guidelines.
2. Conduct a structured assessment (ABCDE, SAMPLE) of simulated patients experiencing medical emergencies, identify pathological findings, and apply this knowledge to create a differential diagnosis and propose diagnostic plan.
3. Analyse results of basic diagnostic tests: laboratory tests (blood count, glucose and electrolyte values, urea, creatinine, cardiac and inflammatory biomarkers, BGA), coagulation tests, microbiology cultures, ECG, and chest x-ray.
4. Manage a simulated patient with a medical emergency, including selecting appropriate treatment and emergency procedures based on clinical findings and diagnostic results.
5. Communicate effectively with team-members during clinical scenarios and other medical personnel during patient hand-over, fusing a structured approach (e.g. SBAR).

A. **AFFECTIVE DOMAIN – VALUES AND ATTITUDES**

1. Recognize the importance of structured patient assessment in high-stress situations.
2. Acknowledge the importance of early recognition of deteriorating patient and the need for prompt intervention planning.
3. Understand the significance of effective communication among medical personnel during medical emergencies.

COURSE CONTENT

To achieve the learning outcomes, classes are organized in 10 thematic units that utilize simulation medicine to bridge the gap between theoretical knowledge and practical application:

1. **FOUNDATIONS OF SIMULATION MEDICINE: TECHNIQUES AND BEST PRACTICES**

(How can simulation-based learning enhance the acquisition and application of clinical skills in medical practice?)

L1 Introduction to the simulation medicine

eP. Introduction to simulation medicine: learning techniques and best practices

1. **STRUCTURED APPROACH TO MEDICAL EMERGENCIES**

(How to assess, recognize, and manage a deteriorating patient in daily practice?)

L2 Cardiopulmonary resuscitation algorithm

L3 Initial assessment and hand-over of acutely ill patients (ABCDE, SAMPLE and SBAR)

L4 Essentials for interpretation of 12-lead ECG in medical emergencies

L5 Initial assessment and management of a patient with cardiac arrhythmias

P1 Recognition and management of a deteriorating patient; cardiopulmonary resuscitation algorithm: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

1. **CARDIAC EMERGENCIES**

(How to effectively recognize, assess, and manage life-threatening cardiac emergencies in daily practice?)

P2 Cardiac emergencies – background, assessment, recognition, and management: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

1. **ACUTE RESPIRATORY FAILURE**

(How to assess, recognize and manage a patient in acute respiratory failure in daily practice?)

P3 Acute respiratory failure – background, assessment, recognition, and management: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

1. **SUDDEN NEUROLOGICAL DETERIORATION**

(How to assess, recognize and manage a patient with sudden deterioration in neurologic status in daily practice?)

P4/part I Sudden deterioration in neurologic status: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

1. **SEPSIS AND SEPTIC SHOCK**

(How to assess, recognize and manage a patient with suspected sepsis/septic shock in daily practice?)

P4/part II Sepsis and septic shock: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

1. **COMPREHENSIVE MANAGEMENT OF ACUTE MEDICAL EMERGENCIES**

(How to assess, recognize and manage a patient with haemorrhage and haemorrhagic shock, electrolyte disturbances, acute poisoning, and burns in daily practice?)

P5 Haemorrhage and haemorrhagic shock, electrolyte disturbances, acute poisoning, burns

1. **INJURIES AND TRAUMA LIFE SUPPORT**

(How to assess and manage an injured patient in daily practice?)

L6 Trauma life support

P6 Essential surgical clinical skills: suturing, splints, repositions, urinary bladder catheterisation

P7 Trauma assessment and management: onsite workshop in conjunction with educational materials provided via the Merlin e-learning platform

9. CLINICAL SKILLS IN PAEDIATRICS

(How to assess, recognize and manage paediatric emergency in daily practice?)

L7 Initial assessment and management of paediatric emergencies

P8 Paediatric emergencies and life support

10. THINKING IN PATERNS OF CLINICAL FEATURES IN WIDE DIFFERENTIAL DIAGNOSIS

(How to properly integrate acquired theoretical and practical knowledge in a wide variety of different medical scenarios and perform an effective communication between medical personnel?)

P9 Integrated simulation of all clinical skills – part 1

P10 Integrated simulation of all clinical skills – part 2

COURSE CONCEPT

The primary objective of the course “Simulation of Clinical Skills,” held at the Skills Lab Simulation Centre (Kabinet vještina), is to equip sixth-year medical students with the essentials skills and knowledge required to respond effectively to diverse emergency medical situations. The course employs advanced simulation techniques to enhance decision-making abilities, refine clinical judgement, and foster effective communication and teamwork.

Innovatively using the flipped classroom model, students independently study theoretical overviews of essential medical skills and specific emergency conditions via Merlin e-learning platform, prior to onsite classes. This independent study is followed by highly interactive in-class sessions, where the theoretical knowledge is tightly interwoven with practical simulation exercises. These theoretical segments aim to equip students with the robust skillset necessary to properly recognize, assess, and manage varying medical emergencies.

Upon mastering the theoretical aspects, students are introduced to a range of simulation scenarios that mimic diverse clinical conditions. These scenarios provide an ideal platform for students to implement the theoretical knowledge they have acquired throughout the medical school and summarized during the theoretical parts of the classes. Each simulation is run by a team of students, consisting of one team-leader and 2-3 team members, and is moderated by a teacher. This structure ensures that students receive ample hand-on experience while also promoting effective team communication.

As a conclusion to each simulation scenario, a teaching discussion is held where personalized feedback is provided to each student. This feedback mechanism is integral to the learning process, enabling students to reflect on their performance and make necessary adjustments for future simulations.

List of assigned reading:

List of mandatory literature:

“Simulation of Clinical Skills – a practical guide” and educational materials available on Merlin e-learning platform (available to students two weeks prior to beginning of this course)

List of optional reading:

Additional (optional) literature:

European Resuscitation Council Guidelines 2021 - available at: https://www.cprguidelines.eu/
- Basic Life Support
- Adult Advanced Life Support
- Cardiac Arrest in Special Circumstances
- Newborn Resuscitation and Support of Transition of Infants at Birth
- Paediatric Life Support

Alson LA, Han KH, Campbell JE. International Trauma Life Support for Emergency Care Providers, 9ed. Pearson 2019.
Šustić A, Sotošek V. Handbook of Anaesthesiology, Reanimatology, and Intensive Care Medicine for students of medicine and dental medicine, 1ed. Zagreb: Medicinska naklada, 2021.

Curriculum:

Lectures list (with titles and explanation):

Introduction to Simulation Medicine

Understand the aims, contents, and requirement of the course. Define the role of simulation-based medical teaching and learning.

Cardiopulmonary resuscitation algorithm

Describe how to identify a patient in cardiorespiratory arrest. Explain and manage resuscitation following advanced life support guidelines. Understand the treatment of shockable and non-shockable rhythms. List potentially reversible causes of cardiac arrest.

Initial assessment and hand-over of acutely ill patient (ABCDE, SAMPLE and SBAR)

Explainassessment methods and management of deteriorating patient using ABCDE approach. Describe a structured approach for communication between team members during the management of a patient (e.g. closed-loop communication), and during patient handover (e.g. SBAR).

Essentials for interpretation of the 12-lead ECG in medical emergencies

Explain basic electrocardiography and describe features of normal 12-lead ECG. Identify the P wave, PQ/R interval, QRS complex, ST segment and T wave on an ECG and describe normal the duration of different intervals. Describe features of ECG in acute coronary syndrome and the most common rhythm and rate disturbances.

Initial assessment and management of a patient with cardiac arrhythmias

Describe how to assess and manage a patient with rate and/or rhythm disturbance. List and define life-threatening features (e.g., shock, syncope, myocardial ischaemia, severe heart failure). List the indications for synchronized cardioversion and transcutaneous pacing.

Trauma assessment and management

Describe the assessment and management of trauma patients, including the primary survey, ongoing exams, and secondary survey.

Initial assessment and management of paediatric emergencies

List clinical skills in paediatric population. Explain the peculiarities of taking medical history, performing physical examination, and preparing the equipment needed for the paediatric population. Describe the algorithms of advanced life support for the paediatric population.

Practicals list (with titles and explanation):

Entry Practical (eP). Introduction to simulation medicine: learning techniques and best practices

Onsite class in conjunction with educational materials provided via the Merlin e-learning module, lessons include:

- Overview of simulation-based learning
- Techniques for effective learning in a simulation environment
- Best practices for teamwork and communication in clinical simulations

Learning outcomes: understand the principles of simulation-based learning and its importance in medical education. Apply techniques for effective learning in simulation environments. Demonstrate best practices for teamwork and communication during clinical simulations. Develop a structured approach to participating in debriefing simulation exercises.

Practical 1 (P1). Recognition and management of deteriorating patient; cardiopulmonary resuscitation algorithm

Onsite class in conjunction with obligatory educational materials provided via Merlin e-learning platform, lessons include:

Initial assessment of the deteriorating patient, with written educational material and video-tutorials
- Airway management, with written educational material and video-demonstration
- Essentials for ECG interpretation in medical emergencies, with written educational material
- Cardiopulmonary resuscitation (CPR) guidelines and algorithms, with written educational material and video-demonstrations
- Intravenous fluids, with written educational materials and video-tutorial on basic physiology

Learning outcomes: Apply the ABCDE approach for the initial assessment of a deteriorating (simulated) patient, report the findings in a structured manner, interpret the pathological findings and incorporate them in a differential diagnosis, select the appropriate diagnostic tools to confirm the diagnosis, and apply the correct treatment. Interpret the 12-lead electrocardiogram (ECG). Perform a structured handover of the (simulated) patient.

Recognise cardiopulmonary arrest, identify heart rhythm associated with cardiac arrest, and perform CPR according to current guidelines.

Identify different types of intravenous fluids and understand their composition. Determine appropriate indications for the use of crystalloids, colloids, and blood products. Recognize contraindications and potential adverse effects associated with various intravenous fluids. Calculate the dose for fluid administration and demonstrate correct techniques for intravenous fluid delivery. Understand the principles of fluid balance and how to adjust intravenous fluid dose based on patient response and needs.

Practical 2 (P2). Cardiac Emergencies – background, assessment, recognition, and management

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Acute coronary syndrome, with written educational material and video-tutorial
- Life-threatening arrhythmias, with written educational material and video-tutorial

Learning outcomes: Apply the ABCDE for the initial assessment of a (simulated) patient, report the findings in a structured manner, interpret the pathological findings and incorporate them in a differential diagnosis, select the appropriate diagnostic tools to confirm the diagnosis, and apply the correct treatment. Interpret the 12-lead electrocardiogram (ECG). Recognise cardiopulmonary arrest, identify heart rhythm associated with cardiac arrest, apply resuscitation guidelines correctly, and perform safe defibrillation when indicated. Explain the guidelines for acute coronary syndrome, bradyarrhythmia, and tachyarrhythmia, interpret the 12-lead electrocardiogram. Define clinical and diagnostic findings important for selecting appropriate treatment and implement the knowledge and skills needed for treatment of medical conditions in simulations of different clinical scenarios of acute coronary syndrome, brady- and tachyarrhythmia. Perform structured handover of the (simulated) patient.

Practical 3 (P3). Acute Respiratory Failure – background, assessment, recognition, and management

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Acute respiratory failure, with written educational materials
- Arterial blood gases, with written educational materials and video-tutorial
- Anaphylaxis, with written educational materials and video-tutorial
- Acute bronchospasm, with written educational materials and video-tutorials on asthma attack and acute exacerbation of COPD
- Pulmonary oedema, with written educational materials and video-tutorial

Learning outcomes: Apply the ABCDE for the initial assessment of a (simulated) patient with acute respiratory insufficiency, report the findings in a structured manner, interpret the pathological findings and incorporate them in a differential diagnosis. Select the appropriate diagnostic tools to confirm the diagnosis and apply the correct treatment. Interpret blood gas analysis. Explain the guidelines for the management of anaphylaxis, severe asthma attack, pulmonary oedema, and acute exacerbation of chronic obstructive pulmonary disease, define clinical and diagnostic findings important for selecting appropriate treatment. Implement the knowledge and skills needed for treatment of mentioned medical conditions. Perform structured handover of the (simulated) patient.

Practical 4 (P4). Sudden Deterioration in Neurologic Status. Sepsis and septic shock .

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Neurologic assessment, with education materials, video-tutorial, and video-demonstration on assessment of GCS
- Management of sudden neurological deterioration, with written educational material and video tutorial

Seizures, with written educational materials
- Recognition and initial treatment of sepsis and septic shock, with written educational material and video tutorial on SOFA and qSOFA score, as well as First hour bundle

Learning outcomes: Apply the ABCDE for the initial assessment of a (simulated) patient with sudden deterioration in neurologic status, report the findings in a structured manner, interpret the pathological findings and incorporate them in a differential diagnosis, select the appropriate diagnostic tools to confirm the diagnosis, and apply the correct treatment. Conduct a neurologic assessment, including the Glasgow Coma Scale (GCS). Explain the guidelines for the management of stroke, traumatic brain injury, increased intracranial pressure, and blood glucose disturbances. Define clinical and diagnostic findings important for selecting appropriate treatment. Implement the knowledge and skills needed for treatment of mentioned medical conditions. Perform structured handover of the (simulated) patient.

Explain the background for sepsis and septic shock. Perform an assessment of the (simulated) patient suspected of having sepsis, with special emphasis on quick-SOFA score. Define the most common sites and pathogens associated with sepsis. Recognize and manage septic patient with emphasis on first-hour bundle.

Practical 5 (P5). Intravenous fluids, haemorrhage and haemorrhagic shock, electrolyte disturbances, burns, acute poisoning

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Electrolyte disorders, with written educational materials and video-tutorial on hypo- and hyperkalaemia
- Haemorrhage and haemorrhagic shock, with written educational materials and video-tutorial
- Acute poisoning, with written educational materials and video-tutorial
- Burns assessment and management, with written educational materials and video-tutorial

Learning outcomes: Apply the ABCDE for the initial assessment of a (simulated) patient with haemorrhage, report the findings in a structured manner, interpret the pathological findings and incorporate them in a differential diagnosis, select the appropriate diagnostic tools to confirm the diagnosis, and apply the correct treatment. Explain the guidelines for haemorrhagic shock. Define clinical and diagnostic findings important for selecting appropriate treatment. Implement the knowledge and skills needed for the treatment of mentioned medical conditions. Order tranexamic acid and blood products timely. Perform structured handover of the (simulated) patient.

List clinical signs and symptoms of common electrolyte imbalances, interpret laboratory results to diagnose electrolyte disorder, develop appropriate management plan for the most common electrolyte disturbances, apply knowledge of electrolyte physiology to select correct treatment options.

Identify and manage a patient with various types of acute poisoning.

Assess and provide initial management for burn injuries.

Practical 6 (P6). Essential Surgical Clinical Skills: suturing, splints, repositions, urinary bladder catheterisation

Onsite classes in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Suturing techniques, with video tutorial
- Application of splints and repositions
- Urinary bladder catheterization

Learning outcomes: demonstrate proper suturing techniques for wound closure, apply splints and perform repositions for fractures and dislocations, perform urinary bladder catheterization with sterile technique, recognize and manage complications associated with these procedures.

Practical 7 (P7). Trauma Assessment and Management

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Initial trauma assessment and management, with written education materials and video-tutorials on initial assessment and management, as well as thoracic and abdominal trauma
- Trauma life support algorithms, with written education materials and video-tutorials
- Case studies on trauma management

Learning outcomes: conduct a primary and secondary survey for trauma patients, apply trauma life support protocols, recognize, and manage life-threatening injuries in a simulated environment, demonstrate effective

communication and teamwork in trauma scenarios, perform structured handover of the (simulated) patient.

Practical 8 (P8). Paediatric Emergencies and Life Support

Onsite class in conjunction with obligatory educational materials provided via the Merlin e-learning platform, lessons include:

- Paediatric assessment and life support
- Common paediatric emergencies

Learning outcomes: conduct a comprehensive assessment of paediatric patients, apply paediatric life support protocols, recognize and manage common paediatric emergencies, demonstrate effective communication with paediatric patients and their families. Describe dose modification for therapy given to paediatric population. Become familiar with internet-application that assist with appropriate therapy and doses in paediatric population (e.g., PediHelp).

Practical 9 (P9). Integrated simulation of all clinical skills – part 1

Onsite class involving integrated simulation scenarios that encompass a variety of clinical skills and emergencies learned throughout the course.

Learning outcomes: integrate and apply clinical skills from various medical emergencies in simulated scenarios, demonstrate effective teamwork and communication during simulations, reflect on performance and identify areas for improvement, receive and apply feedback to enhance clinical skills.

Practical 10 (P10). Integrated simulation of all clinical skills – part 2

This session continues the onsite integrated simulation scenarios from part 1, emphasizing the final evaluation of students. The assessment will be conducted using the Objective Structured Clinical Examination (OSCE) format, focusing on a simulated medical emergency scenario.

Learning outcomes: integrate and apply clinical skills from various medical emergencies in simulated scenarios, demonstrate effective teamwork and communication during simulations, reflect on performance and identify areas for improvement, receive and apply feedback to enhance clinical skills.

Student obligations:

Student obligations:

All information regarding the course, as well as the obligatory materials needed to prepare for the course, will be available on the Merlin e-learning platform. Students should visit the mentioned platform regularly in order to be informed in a timely manner of any facts or changes concerning the course. Furthermore, students should regularly fulfil the obligations related to course attendance and active participation in classes.

COURSE ATTENDANCE:

Classes are organized according to the schedule published on the Merlin e-learning platform. Attendance of all lectures and practicals is mandatory, and attendance records are kept separately for each student. All classes start exactly at the scheduled time, and being late is treated as an absence from the class. Entries and exits during classes are not allowed. A student may justifiably miss up to 30% of the hours provided separately for lectures and practicals, solely for health reasons, which must be confirmed by a medical certificate. If a student is unjustifiably absent from more than 30% of class hours for each class type, the student cannot continue to attend the course and does not meet the mandatory requirement for passing the course. In case of justifiably missed class, individual appointment should be arranged between the student and kabinet.vjestina@gmail.com for the purpose of fulfilling mandatory requirements.

In the event that a student is found to have misused the inp.medri.uniri. hr application for attendance purposes, such actions will be considered a serious violation of academic integrity. Consequently, the matter will be referred to the Ethics Committee of the Medical Faculty for a comprehensive review and appropriate disciplinary action.

ACTIVE PARTICIPATION IN CLASSES:

Predominantly comprised of highly interactive classes, the course “Simulation of clinical skills” is structured around a flipped classroom model, encouraging pre-class preparation and active in-class participation. Teachers provide a succinct theoretical overview at the beginning of each session, and students – lead by a designated team-leader – apply this knowledge by engaging in running a clinical scenario with support from their team members.

In each scenario, the team-leader is tasked with patient assessment, formulation of differential diagnoses based on findings, deciding on appropriate diagnostic tests, determining necessary procedures and therapies, and making the final decision on patient discharge or hospital admission. In cases of hospital admission, students are encouraged to deliver a structured patient hand-over to another simulated medical specialist. Teachers moderate the course of the clinical scenario, providing insightful teaching discussion and feedback to all team members once the scenario concludes.

The benefits of this course are intrinsically linked to the level of student engagement and preparation. Optimal learning outcomes are achieved when clinical scenarios run seamlessly, with students accurately identifying pathological findings, incorporating them into differential diagnoses, and informing subsequent patient management. Therefore, **students are expected to come to each session well-prepared and proficient in the ABCDE approach and cardiopulmonary resuscitation guidelines, with prior theoretical knowledge of managing medical emergencies. In particular, this means that the student is obligated to thoroughly study the “Simulation of Clinical Skills – a practical guide” and other educational materials on the Merlin e-learning platform before attending the practical workshops. Additionally, as this course is on the final year of medical school and serves to integrate all the previous knowledge from prior years, the student is expected to have a solid theoretical background in all major clinical courses, such as internal medicine, neurology, surgery, and other relevant disciplines.** Students are encouraged to refer to the provided (obligatory and additional) educational materials during the practicals for a deeper understanding and better application of the skills under study. All of the educational materials on Merlin e-learning platform will be available before the beginning of the course.

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

Assessment (types and description of assessment etc):

Student assessment in the course “Simulation of Clinical Skills” is designed to provide regular feedback and evaluate students’ growth over time. The assessment strategy incorporates both formative and summative assessments.

FORMATIVE ASSESSMENT

Formative assessments are strategically incorporated throughout the duration of the course. These assessments take shape in teaching discussions, succeeded by personalized feedback upon the completion of each simulated scenario. The goal of these iterative process of learning, assessment and feedback is designed to promote students’ continuous learning and enhance their clinical skills and knowledge.

Formative assessment is based on the modified Sweeney-Clark Simulation Evaluation Rubric, which is accessible via the Merlin e-learning platform. The evaluation rubric categorizes student (team leaders) into varying proficiency levels: novice, advanced beginner, competent, proficient, or expert level. This categorization is achieved through assessment of seven distinct areas: ABCDE assessment, SAMPLE history, choice and interpretation of laboratory data and diagnostics, medical interventions, clinical judgement, communication skills and cardiopulmonary resuscitation measures.

This formative approach encourages students to develop a deeper understanding of the subject matter, refine their practical skills, and apply their knowledge in real-time. The frequent feedback and discussions provide students with an opportunity to reflect on their performance, understand their strengths, and identify areas for improvement.

SUMMATIVE ASSESSMENT

Summative assessment for the course “Simulation of Clinical Skills” adheres to the established grading regulations at the University of Rijeka and the Faculty of Medicine in Rijeka. Comprising of both **continuous and final evaluation** methods, the assessment allows for a maximum of 100 credits, split equally between continuous coursework (50 credits, 50%) and the final practical examination (50 credits, 50%). A minimum score of 25 credits in both categories is necessary to pass the course and earn the corresponding ECTS credits.

The continuous assessment portion of the course, worth up to 50 credits, evaluates students’ acquisition of knowledge throughout the course via five brief obligatory tests. These tests align with the themes of practical sessions 1-5, with each test offering a potential maximum of 10 credits. Credits are awarded provided that the student correctly answers a minimum of 50% of the questions. The tests can incorporate a variety of question types, including single best answer, multiple-choice and short descriptive questions. These assessments are designed to gauge students’ understanding of the course’s theoretical elements.

Here is a credit allocation chart for the obligatory tests in continuous assessment:

% of correct answers	credits
50%	5
51-60%	6
61-70%	7
71-80%	8
81-90%	9
91-100%	10

The final evaluation, which also contributes 50 credits towards the total assessment score, can only be taken by students who have:

- Earned more than 25 credits in continuous assessments, and
- Maintaned a maximum of 30% of **justified** absences from classes.

The final evaluation, conducted at the end of the course, utilizes the Objective Structured Clinical Examination (OSCE) format on a simulated scenario of a medical emergency.

Here is a credit allocation chart for the OSCE:

% of correct answers	credits
50%	25
51-60%	30
61-70%	35
71-80%	40
81-90%	45
91-100%	50

To pass the course and obtain the allocated ECTS credits, a student must successfully pass both the continuous and final evaluation, amassing more than 50 credits in total.

This holistic evaluation system ensures students' knowledge and practical skills are adequately assessed, promoting their readiness for real-world medical practice.

Other notes (related to the course) important for students:

Other information (related to the course) important for students:

COMMUNICATION WITH TEACHERS:

Teachers are available daily during working hours via e - mail addresses (available on the webpage of the Faculty of Medicine in Rijeka and Merlin e-learning platform) for all questions concerning the course. Consultations are possible by appointment and can be conducted live or through the online platform MS Teams.

ACADEMIC INTEGRITY:

It is expected that the teacher will respect the Code of Ethics of the University of Rijeka, and the students the Code of Ethics for students at the University of Rijeka.

COURSE HOURS 2024/2025

Simulation of Clinical Skills

Lectures (Place and time or group)	**Practicals** (Place and time or group)
30.10.2024	

Introduction to Simulation Medicine:
• KBC Sušak -- (16:00 - 16:45) [259]
  ○ CSS
	Entry Practical (eP). Introduction to simulation medicine: learning techniques and best practices:
	• KBC Sušak -- (16:45 - 18:15) [353] [1913]
	  ○ CSS G1
	  ○ CSS G2
	  ○ CSS G3
	  ○ CSS G4

naslovna asistentica Božić Katarina, dr. med. [1913] · prof. dr. sc. Protić Alen, dr. med. [259] · Šuper-Petrinjac Erika, dr. med. [353]	
31.10.2024	

Initial assessment and management of paediatric emergencies:
• P5-112 (11:15 - 12:00) [372]
  ○ CSS
 	
Initial assessment and hand-over of acutely ill patient (ABCDE, SAMPLE and SBAR):
• P5-112 (12:00 - 12:45) [259]
  ○ CSS
 	
Essentials for interpretation of the 12-lead ECG in medical emergencies:
• P5-112 (12:45 - 13:30) [462]
  ○ CSS
 	
Initial assessment and management of a patient with cardiac arrhythmias:
• P5-112 (13:30 - 14:15) [352]
  ○ CSS
 	
Cardiopulmonary resuscitation algorithm:
• P5-112 (15:00 - 15:45) [352]
  ○ CSS
 	
Trauma assessment and management:
• P5-112 (16:00 - 17:30) [352]
  ○ CSS	

doc. dr. sc. Bobinac Mirna, dr. med. [352] · izv. prof. dr. sc. Lah Tomulić Kristina, dr. med. [372] · prof. dr. sc. Protić Alen, dr. med. [259] · doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462]	
09.12.2024	

	Practical 1 (P1). Recognition and management of deteriorating patient; cardiopulmonary resuscitation algorithm:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [355] [1913]
	  ○ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1913]
	  ○ CSS G2

naslovna asistentica Božić Katarina, dr. med. [1913] · naslovni asistent Bura Matej, dr. med. [355]	
10.12.2024	

	Practical 2 (P2). Cardiac Emergencies – background, assessment, recognition, and management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1914]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1912]
	  ◦ CSS G2

naslovni asistent Vuksan Ivan, dr. med. [1912] · naslovni asistent Ševeljević Ivan, dr. med. [1914]	
11.12.2024	

	Practical 3 (P3). Acute Respiratory Failure – background, assessment, recognition, and management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [2304]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1915]
	  ◦ CSS G2

naslovni asistent Barbalić Berislav, dr. med. [2304] · naslovna asistentica Predrijevac Tomljanović Anamarija, dr.med. [1915]	
12.12.2024	

	Practical 4 (P4). Sudden Deterioration in Neurologic Status. Sepsis and septic shock .:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1911]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1404]
	  ◦ CSS G2

naslovna asistentica Jurinčić Ivana, dr. med. [1911] · naslovni asistent Maroević Jan, dr. med. [1404]	
13.12.2024	

	Practical 5 (P5). Intravenous fluids, haemorrhage and haemorrhagic shock, electrolyte disturbances, burns, acute poisoning:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [468]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1404]
	  ◦ CSS G2

Knežević Danijel, dr. med. [468] · naslovni asistent Maroević Jan, dr. med. [1404]	
16.12.2024	

	Practical 6 (P6). Essential Surgical Clinical Skills: suturing, splints, repositions, urinary bladder catheterisation:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1257]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1881]
	  ◦ CSS G2

asistent Jakšić Ante, dr. med., FEBU [1881] · naslovni asistent Roth Aron, dr. med. [1257]	
17.12.2024	

	Practical 7 (P7). Trauma Assessment and Management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [292]
	  ◦ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [294]
	  ◦ CSS G2

naslovna asistentica Otočan Marinka, dr. med. [294] · naslovna asistentica Šverko Zinaić Petra, dr. med. [292]	
18.12.2024	

	Practical 8 (P8). Paediatric Emergencies and Life Support:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [372]
	  ○ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [2264]
	  ○ CSS G2

izv. prof. dr. sc. Lah Tomulić Kristina, dr. med. [372] · asistentica Marinić Dolores, dr. med. [2264]	
19.12.2024	

	Practical 9 (P9). Integrated simulation of all clinical skills – part 1:
	• Cabinet of skills, training ground 1 (08:00 - 17:45) [1915] [1914]
	  ○ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 17:45) [1914]
	  ○ CSS G2

naslovna asistentica Predrijevac Tomljanović Anamarija, dr.med. [1915] · naslovni asistent Ševeljević Ivan, dr. med. [1914]	
20.12.2024	

	Practical 10 (P10). Integrated simulation of all clinical skills – part 2:
	• Cabinet of skills, training ground 1 (08:00 - 18:30) [1912]
	  ○ CSS G1
	• Cabinet of skills, training ground 2 (08:00 - 18:30) [355]
	  ○ CSS G2

naslovni asistent Bura Matej, dr. med. [355] · naslovni asistent Vuksan Ivan, dr. med. [1912]	
07.01.2025	

	Practical 1 (P1). Recognition and management of deteriorating patient; cardiopulmonary resuscitation algorithm:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [462]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [468]
	  ○ CSS G4

Knežević Danijel, dr. med. [468] · doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462]	
08.01.2025	

	Practical 2 (P2). Cardiac Emergencies – background, assessment, recognition, and management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1913]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [355]
	  ○ CSS G4

naslovna asistentica Božić Katarina, dr. med. [1913] · naslovni asistent Bura Matej, dr. med. [355]	
09.01.2025	

	Practical 3 (P3). Acute Respiratory Failure – background, assessment, recognition, and management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [2304]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1915]
	  ○ CSS G4

naslovni asistent Barbalić Berislav, dr. med. [2304] · naslovna asistentica Predrijevac Tomljanović Anamarija, dr.med. [1915]	
10.01.2025	

	Practical 4 (P4). Sudden Deterioration in Neurologic Status. Sepsis and septic shock .:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [462]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1914]
	  ○ CSS G4

doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462] · naslovni asistent Ševeljević Ivan, dr. med. [1914]	
13.01.2025	

	Practical 6 (P6). Essential Surgical Clinical Skills: suturing, splints, repositions, urinary bladder catheterisation:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1257]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [1881]
	  ○ CSS G4

asistent Jakšić Ante, dr. med., FEBU [1881] · naslovni asistent Roth Aron, dr. med. [1257]	
14.01.2025	

	Practical 5 (P5). Intravenous fluids, haemorrhage and haemorrhagic shock, electrolyte disturbances, burns, acute poisoning:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [462]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [2757]
	  ○ CSS G4

naslovna asistentica Polonijo Željka [2757] · doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462]	
15.01.2025	

	Practical 7 (P7). Trauma Assessment and Management:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [1482]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [292]
	  ○ CSS G4

doc. prim.dr.sc. Pavletić Martina, dr. med. [1482] · naslovna asistentica Šverko Zinaić Petra, dr. med. [292]	
16.01.2025	

	Practical 8 (P8). Paediatric Emergencies and Life Support:
	• Cabinet of skills, training ground 1 (08:00 - 17:00) [2776]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 17:00) [2778]
	  ○ CSS G4

naslovni asistent Verbić Arijan, dr.med. [2776] · naslovna asistentica Šlabek Ema, dr. med. [2778]	
17.01.2025	

	Practical 9 (P9). Integrated simulation of all clinical skills – part 1:
	• Cabinet of skills, training ground 1 (08:00 - 17:45) [463]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (12:00 - 21:30) [462]
	  ○ CSS G4

doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462] · Valenčić Seršić Lara, dr. med. [463]	
18.01.2025	

	Practical 10 (P10). Integrated simulation of all clinical skills – part 2:
	• Cabinet of skills, training ground 1 (08:00 - 18:30) [462]
	  ○ CSS G3
	• Cabinet of skills, training ground 2 (08:00 - 18:30) [355]
	  ○ CSS G4

naslovni asistent Bura Matej, dr. med. [355] · doc. dr. sc. Tarčuković Janja, dr. med, DESAIC [462]	

List of lectures, seminars and practicals:

LECTURES (TOPIC)	Number of hours	Location
Introduction to Simulation Medicine	1	KBC Sušak --
Cardiopulmonary resuscitation algorithm	1	P5-112
Initial assessment and hand-over of acutely ill patient (ABCDE, SAMPLE and SBAR)	1	P5-112
Essentials for interpretation of the 12-lead ECG in medical emergencies	1	P5-112
Initial assessment and management of a patient with cardiac arrhythmias	1	P5-112
Trauma assessment and management	2	P5-112
Initial assessment and management of paediatric emergencies	1	P5-112

PRACTICALS (TOPIC)	Number of hours	Location
Entry Practical (eP). Introduction to simulation medicine: learning techniques and best practices	2	KBC Sušak --
Practical 1 (P1). Recognition and management of deteriorating patient; cardiopulmonary resuscitation algorithm	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 2 (P2). Cardiac Emergencies – background, assessment, recognition, and management	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 3 (P3). Acute Respiratory Failure – background, assessment, recognition, and management	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 4 (P4). Sudden Deterioration in Neurologic Status. Sepsis and septic shock .	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 5 (P5). Intravenous fluids, haemorrhage and haemorrhagic shock, electrolyte disturbances, burns, acute poisoning	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 6 (P6). Essential Surgical Clinical Skills: suturing, splints, repositions, urinary bladder catheterisation	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 7 (P7). Trauma Assessment and Management	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 8 (P8). Paediatric Emergencies and Life Support	12	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 9 (P9). Integrated simulation of all clinical skills – part 1	14	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2
Practical 10 (P10). Integrated simulation of all clinical skills – part 2	13	Cabinet of skills, training ground 1 Cabinet of skills, training ground 2

EXAM DATES (final exam):

1.	18.02.2025.
2.	28.04.2025.