



# Specification

## *mozaMedical*

**Educational platform  
for Healthcare Studies  
with VR support**



**Content**

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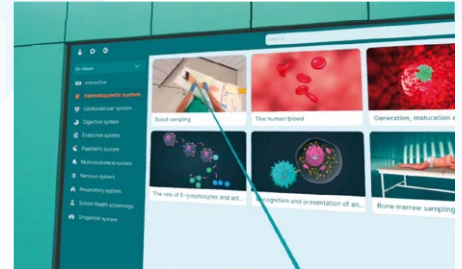
**Application**

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**Table of content**

Traditional methods make it difficult to acquire anatomical and physiological knowledge and learn nursing protocols and therapeutic processes. The learning process can be considered complete when students can put their knowledge into practice.

The roles and responsibilities of physiotherapists and nurses are presented using modern teaching methods and spectacular interactive content. The materials **based on anatomical and physiological knowledge are not organised according to subjects but organ systems.**



## Prepare with state-of-the-art materials

The interactive elements, three-dimensional scenes, and VR simulations are not only spectacular but also present the curriculum in an unprecedentedly detailed way, aiding the learning process.



## Content:

- 10 courses, 90+ interactive digital lessons for the following trainings: nurse, physiotherapist, health visitor, dietitian, dental hygienist, paramedic, midwife, speech therapist, voice therapist, swallowing therapist, ergotherapist, medical research laboratory analytics, optometry, radiography, pathological analysis, medical diagnostic analysis
- structure of the courses is based on organ systems
- Interactive media content:
  - complex 3D animations,
  - embedded 3D objects for realistic visualisation,
  - educational videos with narration and dynamic textual content,
  - realistic VR simulations for practising healthcare procedures/protocols,
  - VR (POV) videos
- self-check - built-in questions
- interactive exercises for practising terminology related to animations and images
- content graph structure, cross references of terms and expressions
- possibility of localising texts and content

**Digital lessons** - The system, based on anatomical and physiological knowledge, uses modern digital solutions to facilitate the education of healthcare professionals.

**3D scenes** - Modern digital solutions for illustration purposes; three-dimensional scenes and animations present each topic with unprecedented efficiency.

**Quizzes** - The built-in exercises and quizzes provide immediate feedback to users about the acquired knowledge.

**Videos** - The system includes narrated and POV videos, which present nursing and physiotherapeutic procedures in a realistic way.

**VR simulations** - To safely practise the protocols of nursing procedures related to critically ill patients (ECG, catheterisation, nasogastric tube feeding, endotracheal intubation).



## Digital lessons

The missing link between printed textbooks and digital education. These are up-to-date learning materials that present each topic with additional digital content. The lessons' easy-to-follow structure and the numerous images make learning more entertaining. The lessons include many interactive items, such as 3D scenes and educational videos, as well as worksheets for practising and revision.

## Realistic VR simulations for learning nursing procedures


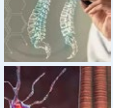
The learning process, supported by VR simulations and videos showing realistic situations, makes it possible to learn and safely practise crucial nursing procedures. These allow students to practise protocols and memorise the steps of various procedures and interventions.


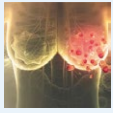

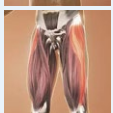
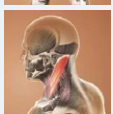
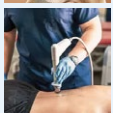
## Web and application:

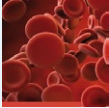



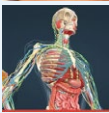
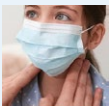
- online, responsive visualisation
- multiplatform:
  - PC: Windows, MacOS, Linux, ChromeOS
  - Mobile: iOS, Android
- VR simulation application
  - Meta Quest 2/3/3s, Pro




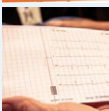













Musculoskeletal system			
1		<b>Viscoelastic behavior of the connective tissues</b>	Connective tissue is found in several parts of the body that connects, supports, and helps bind other tissues.
2		<b>Biomechanical behavior of the bone tissue</b>	The bones of the skeletal system have various essential functions in the human body.
3		<b>Deep oscillation therapy</b>	Deep oscillation therapy is an electro-mechanic therapy procedure in which a pulsating electrostatic field is built up between the probe and the tissue.
4		<b>Osteoporosis</b>	Osteoporosis is a disease of progressive bone loss, it is called a "silent" disease because there are typically no symptoms until a bone is broken.
5		<b>Walking aids</b>	Walking aids are used when one cannot carry bodyweight on at least one lower extremity.
6		<b>Biomechanical characteristics of tendons and ligaments</b>	The structure and composition of tendons, ligaments and articular capsule.
7		<b>The biomechanics of skeletal muscles</b>	Striated muscle tissue, is one of the three types of muscle tissue present in the human body.
8		<b>The biomechanical properties of the articular cartilage</b>	In synovial joints, the joint surfaces of the bones are covered by a dense, opalescent white layer of special connective tissue called hyaline cartilage.
9		<b>Venous thromboembolism in trauma patients</b>	Deep vein thrombosis most commonly affects the veins in the lower limbs and pelvis.
10		<b>Spine curvature disorders</b>	Spine curvature disorders are characterized by abnormal curvatures of the spine that deviate from its normal alignment
11		<b>Biomechanical properties of peripheral nerves</b>	Functionally the three main roles of the nervous system are sensation, integration, and response.
12		<b>Degenerative spine diseases</b>	Degenerative changes in the spine can also be caused by ageing or overuse.
13		<b>Types of gynaecological surgeries</b>	Gynaecological surgery can be divided into two categories: vaginal surgery and abdominal surgery.
14		<b>Bone fractures</b>	In case of fracture, the continuity of the bone is broken.
15		<b>The most common type of fractures</b>	The four most common types of adult bone fractures are the wrist, hip, proximal humerus, and ankle fractures.

16		<b>Osteoarthritis</b>	Osteoarthritis encompasses a range of joint diseases with being the most common degenerative type.
17		<b>Shockwave therapy</b>	Shock wave therapy represents a form of mechanotherapy.
18		<b>The therapeutic uses of Low-Level Laser Therapy (LLLT)</b>	Low-laser therapy is a non-invasive light source treatment used in physiotherapy.
19		<b>Role of physiotherapy in supporting recovery from breast cancer treatment</b>	Breast cancer is the most frequently diagnosed cancer in women globally.
20		<b>The efficacy of physiotherapy in the treatment and management of rheumatic diseases</b>	Early diagnosis and intervention in rheumatic diseases are critical for optimizing patient outcomes.
21		<b>Spondyloarthritis</b>	Spondyloarthritis – a family of inflammatory rheumatic diseases.
22		<b>Other inflammatory disorders of the musculoskeletal system</b>	Gout, also known as arthritis urica, is a systemic disease that belongs to the family of crystal arthropathies.
23		<b>Chronic pain syndrome</b>	Pain is the most common reason why people seek medical attention.
24		<b>Autoimmune disorders of connective tissue</b>	Systemic autoimmune connective tissue diseases encompass several different conditions.
25		<b>Functional anatomy, shoulder girdle, upper extremity</b>	Anatomy of the shoulder and upper extremity.
26		<b>Functional anatomy, lower extremities</b>	Anatomy of the upper extremities
27		<b>Functional anatomy, trunk and neck muscles</b>	Anatomy of the trunk and neck muscles.
28		<b>Types of physiotherapy treatments</b>	Overview of low and medium frequency currents in physiotherapy treatment methods.
29		<b>Case study III.</b>	A case study of a patient admitted to the neurology ward, from history taking to nursing care.





Blood cell formation and the lymphatic system		
30		<b>The blood</b> The blood is considered a fluid connective tissue that connects various regions of the body.
31		<b>Phlebotomy</b> "How to draw blood? Step-by-step guide to phlebotomy."
32		<b>The immune system</b> The immune system, the body's first line of defense protects us from possibly harmful or foreign invaders.
33		<b>Bone marrow biopsy</b> Bone marrow biopsy is a commonly performed procedure that helps in the diagnosis of hematological malignancies.
34		<b>The lymphatic system</b> The lymphatic system is composed of the lymphatic fluid (lymph), the lymphatic vessels and lymphatic cells.
35		<b>Examination of the lymph nodes</b> The assessment of the lymph nodes is important for diagnostics as it provides information about various underlying diseases.

Cardiovascular system		
36		<b>The heart</b> The heart is located in the thoracic cavity or in the anterior mediastinum oriented obliquely, and above the diaphragm.
37		<b>The vascular system</b> Blood is circulated by the heart in a closed circuit through vessels.
38		<b>Physiology of the circulation</b> Blood is circulated by the continuous pump function of the heart inside a closed system.
39		<b>Electrocardiogram (ECG)</b> An electrocardiogram is a simple, painless, non-invasive screening test.
40		<b>Cardiopulmonary resuscitation (CPR)</b> Resuscitation is the set of interventions and activities undertaken to restart the circulatory system after it has stopped.
41		<b>Vital signs assessment–Pulse rate</b> The first set of clinical examinations is the evaluation of the patient's vital signs.
42		<b>Assessment of vital signs – Blood pressure</b> Blood pressure is the pressure of blood on the walls of the arteries as the heart pumps blood around the body.
43		<b>The Role of Physiotherapy in Peripheral Arterial Diseases (PAD)</b> The narrowing of the peripheral arteries causes a decrease in the blood supply of the area.



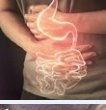
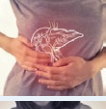

## Respiratory system

44		<b>The respiratory system</b>	The respiratory system is divided into upper and lower airways.
45		<b>Respiration (the process of breathing)</b>	Proper breathing requires the coordinated functioning of the organs involved in the process of inhalation and exhalation.
46		<b>COPD as a public health issue</b>	COPD is a preventable and treatable disease characterized by often irreversible obstructive changes in the airways.
47		<b>Inhalation therapy</b>	Inhalation therapy is a treatment for both acute and chronic obstructive airway diseases.
48		<b>Respiratory system — nursing and patient care</b>	Possible applications of airway management and oxygen therapy.














## Urogenital system

49		<b>The genitourinary system</b>	The genitourinary system encompasses the organs of the genital and urinary systems.
50		<b>The reproductive system</b>	The gender differentiation begins in the early stages of the intrauterine development.
51		<b>Urinary catheterization</b>	Urinary or bladder catheterization is one of the typical tasks of daily in-patient care.
52		<b>Breast and testicular self-examination</b>	Regular self-examination can facilitate early detection of testicular and breast cancer.


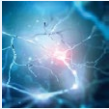
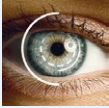


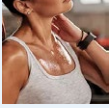

## Digestive system

53		<b>The digestive system</b>	The dietary and digestive organ system represents the largest interface between the outside world and the body.
54		<b>Achalasia and gastroesophageal reflux disease (GERD)</b>	Diseases affecting the oesophagus and their care.
55		<b>Peptic ulcer</b>	A gastric ulcer is a sore in the stomach lining, while a duodenal ulcer is a sore in the duodenum.
56		<b>Diseases of the liver and bile ducts (I.)</b>	Certain liver diseases (hepatitis, cirrhosis) and their management.
57		<b>Diseases of the liver and bile ducts II.</b>	Understanding gallbladder and pancreatic disorders: treatment and management.


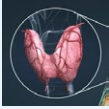
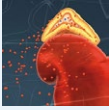
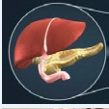
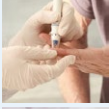

## Nervous system

58		<b>Hemodynamic monitoring</b>	There are invasive, minimally invasive, and non-invasive methods of hemodynamic monitoring; all of them assess physiological processes to provide valuable diagnostic and therapeutic information.
59		<b>Assessing respiration and oxygenation in critically ill patients</b>	Assessing respiration and oxygenation in critically ill patients.
60		<b>Body temperature</b>	Periodic vital sign measurement and monitoring are essential in the care and treatment of critically ill patients.
61		<b>Impaired consciousness</b>	In intensive care units (ICUs), objective evaluation of consciousness is a crucial aspect of patient assessment.
62		<b>Nutritional care of unconscious patients</b>	In artificial nutrition, specialized nutritional formulas are administered enterally in a patient who cannot feed on their own.
63		<b>Monitoring critically ill patients' elimination needs</b>	Monitoring with the elimination of stool and urine is a crucial aspect of nursing care for patients in critical condition.
64		<b>Assisting uncounscious patients with personal hygiene</b>	Maintaining proper hygiene is a fundamental human need that contributes to overall well-being.
65		<b>Patient safety in critical care nursing</b>	Patient safety in critical care nursing
66		<b>Positioning and mobilization of critically ill patients</b>	Patient positioning to maintain the patient in a neutral body position.
67		<b>Assessing level of consciousness: examination of the nervous system</b>	The patient's general condition and level of consciousness are key factors.
68		<b>Sensory functions</b>	Our body is constantly receiving and processing information from the outside world through somatosensory system.
69		<b>Sensory organs I.</b>	External stimuli are perceived and transmitted to the brain through specific sensory organs.
70		<b>Sensory organs II.</b>	Sensing chemical stimuli from the outside world requires receptors in the olfactory and taste organs.
71		<b>Neurobiological, neuroanatomical basics</b>	Understanding the building blocks of the nervous system.
72		<b>Brain, cranial nerves</b>	The nervous system: anatomy and function.








73		<b>The spinal cord and the spinal nerves and nerve roots</b>	The peripheral nervous system consists of nerves and neuromuscular junctions outside the brain and spinal cord.
74		<b>Somatomotor system</b>	Motor tracts, motor neurons, and types of reflexes.
75		<b>The visual system</b>	Visible electromagnetic radiation from the outside world is perceived by the visual system.
76		<b>Physiology of sleep</b>	Sleeping interrupts the periods when we are awake.
77		<b>The autonomic nervous system</b>	The autonomic nervous system is responsible for maintaining the body's physiologic processes.
78		<b>Thermoregulation</b>	Humans are homeotherms, meaning they regulate body temperature within a narrow range.
79		<b>Case study II.</b>	Case studies typically encompass the entire patient journey, from the initial clinic visit and medical history taking to the implementation and evaluation of nursing care.




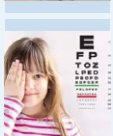
## Endocrine system

80		<b>Endocrine system I.</b>	The endocrine system is also referred to as the hormone system.
81		<b>Endocrine system II.</b>	The thyroid and parathyroid glands.
82		<b>Endocrine system III.</b>	Adrenal hormones and sex hormones.
83		<b>Endocrine system IV.</b>	Hormones secreted by the pancreas.
84		<b>Diabetes mellitus—nursing and patient care</b>	Effective management of patients with diabetes.
85		<b>Diabetic emergencies</b>	Diabetic emergencies must be recognized quickly and require prompt treatment.

## Pediatric nursing and infant care

86		<b>Cervical cancer screening performed by a registered nurse</b>	Cervical carcinoma, commonly referred to as cervical cancer.
87		<b>Infant and child development, body measurements</b>	Monitoring the child's development and growth.
88		<b>Bathing infants and young children</b>	The role and practice of bathing infants and young children.
89		<b>Dressing up infants and young children</b>	The purpose and practice of diapering.
90		<b>Case study I.</b>	A detailed case study of an obstetric case, from history taking to nursing care.

## School health screenings

91		<b>Pediculosis</b>	The head louse is a parasitic insect, which feeds on human blood.
92		<b>Hearing screening</b>	Periodic hearing screenings in schools are highly recommended and often even compulsory.
93		<b>Blood pressure screenings in school-aged children</b>	The frequency of blood pressure screenings in schools can vary depending on the guidelines and policies of individual schools, states and countries.
94		<b>Vision screening in school-aged children</b>	The frequency of vision screenings in schools can vary depending on the guidelines and policies of individual schools, states and countries.