Federal State Autonomous Educational Institution of Higher Education

PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA named after Patrice Lumumba

RUDN University

Institute of Medicine

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

TRAUMATOLOGY AND ORTHOPEDICS

course title

Recommended by the Didactic Council for the Education Field of:

31.05.01 General Medicine

field of studies / speciality code and title

The course instruction is implemented within the professional education programme ofhigher education:

General Medicine

higher education programme profile/specialisation title

2023-2024

1. COURSE GOAL(s)

The goal of the course "**Traumatology and Orthopedics**" is to equip students with knowledge of scientific knowledge and, basing on them, possibility to diagnose trauma and disorders of muskulo-skeletal system, performing initial medical and specialized treatment, how to perform disease prophylaxis involving following study and professional activity.

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the course (module) "**Traumatology and Orthopedics**" is aimed at the development of the following competences /competences in part: **GPC-4, PC-1, PC-2, PC-3.**

Table 2.1. List of competences that students acquire through the course study

Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
GPC-4	Able to use medical devices provided for by the procedure for providing medicalcare, as well as to conduct examinations of the patient in order to establish a diagnosis.	GPC -4.1 Be able to use medical devices in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, assistance taking into account the standards of medical care.
		GPC -4.2 Be able to evaluate the effectiveness and safety of the use of medical devices.
		GPC -4.3 Possess the technique of performing typical medical manipulations using medical devices provided for by the procedures for providing medicalcare.
PC-1	Able to provide medical assistance to the patient in urgent or emergency forms.	PC -1.1. Is able to assess the condition of a patient who requires medical care in emergency or emergency forms.
		PC -1.2. Is able to recognize conditions that occur during sudden acute diseases, exacerbation of chronic diseases without obvious signs of a threat to the patient's life and requiring urgent medical care.

Competence code	Competence descriptor	Competence formation indicators (within this course)
		PC -1.3. Is able to provide emergency medical care to patients with sudden acute diseases, conditions, exacerbation of chronic diseases without obvious signs of a threat to the patient's life.
		PC -1.4. Is able to recognize conditions that pose a threat to the patient's life, including conditions of clinical death (stopping of vital functions of the human body (blood circulation and / or respiration) that require emergency medical care. conditions of clinical death (stopping of vital functions of the human body (blood circulation and / or respiration) that require emergency medical care.
		PC -1.5 is able to provide emergencymedical care to patients with conditions that pose a threat to the patient's life, including clinical death (stopping vital functions of thehuman body (blood circulation and / or respiration).
		PC -1.6. Is able to use medicines and medical devices when providing medical care in emergency or urgent forms.
PC -2	Able to Perform an examination of the patient in order to establish a diagnosis.	PC -2.1. Has the skills to collect complaints, anamnesis of the patient's life and illness, as well as to conduct a complete physical examination of the patient (examination, palpation, percussion, auscultation).
Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
		PC -2.2. Is able to formulate a preliminary diagnosis and make a plan for laboratory and instrumental examinations of the patient

		PC -2.3. Is able to send the patient for a laboratory examination if there are medical indications in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care.
		PC -2.4. Is able to refer the patient for an instrumental examination if there are medical indications in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care.
		PC -2.5. Is able to refer the patient to a consultation with specialist doctors if there are medical indications in accordance with the current procedures for providing medicalcare, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care.
Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
		PC -2.6. Is able to refer a patient for specialized medical care in inpatient conditions or in a day hospital if there are medical indications in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care.
		PC -2.7. Is able to perform differential diagnostics with other diseases/conditions, including urgent ones, as well as to establish a diagnosis taking into account the current international statistical classification ofdiseases and health-related problems (MCB).
PC-3	Able to prescribe treatment and monitoring its effectiveness and safety.	PC -3.1. Is able to develop a treatment plan for a disease or condition, taking intoaccountthe diagnosis, age and clinical picture in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking into account the standards of medical care

		PC -3.2. Is able to prescribe medicines, medical devices and medical nutrition, taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for providing medical care, clinical recommendations (treatment protocols) on the provision of medical care, taking intoaccount the standards of medical care
Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
		PC -3.3. Able to assign non- pharmacological treatment according to diagnosis, age and clinical picture of the disease in accordance with the applicable procedures of medical care, clinical recommendations (treatment protocols) onthe provision of medical care to standardmedical care
		PC -3.4. Able to evaluate the efficacy and safety of medicinal products, medical devices, clinical nutrition and other therapies
		PC -3.5. Able to provide palliative care in collaboration with physicians and otherhealth care professionals.
		PC -3.6. Is able to organize personalized treatment of the patient, including pregnant women, elderly and senile patients, to evaluate the effectiveness and safety of treatmen

3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course refers to the core/variable/elective* component of (B1) block of the higher educational programme curriculum.

* - Underline whatever applicable.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course study.

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
GPC-4	Able to use medical devices provided for by the procedure for providing medical care, as well as to conduct examinations of the patient in order to establish a diagnosis.	Physics, radiation diagnostics, general surgery,medical rehabilitation, neurology, neurosurgery, Faculty surgery, Urology, Endocrinology, Oncology	Maxillofacial surgery, endoscopic urology
PC-1	Able to provide medicalassistance to the patient in urgent or emergency forms.	Life safety, physics, immunology, pathophysiology, propaedeutics of internal diseases, radiation diagnostics, general surgery, topographic anatomy and operative surgery, dermatovenerology, neurology, neurosurgery, psychiatry, otorhinolaryngology, ophthalmology, disaster medicine, faculty therapy, faculty surgery, urology, occupational diseases, hospital therapy, endocrinology, polyclinic therapy, anesthesiology, intensive care, intensive care,hospital surgery, oncology, dentistry	Pediatrics, maxillofacial surgery, sectional course, biotechnology, medical elementology, allergology
PC -2	Able to Perform an examination of the patient in order to establish a diagnosis.		
PC -3	Able to prescribe treatment and monitoring its effectiveness and safety.		

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "**Traumatology and Orthopedics**" is 6 credits (216 academic hours).

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)**

Type of academic activities		**Total academic hours**	**Semesters/training modules**	
Types of academic activities		**TOTAL, academic hours** (ac.h)	**semesters**	
			10	**11**
Classroom learning , *ac.h.*		**216**	108	108
Including:				
Lectures (**Lec**)				
Lab work (**Lab**)		**86**	**43**	**43**
Practical/seminar classes (**S**)		50	25	25
Self-studies, academic hours		*80*	*40*	*40*
Evaluation and assessment (exam or pass/fail grading)				
Total workload of the discipline	ac.h.	**216**		
	credits	**6**	**6**	**6**

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	**Course module contents (topics)**	**Academic activities types**
Module 1	History of traumatology and orthopedy deleopment. Types of trauma and trauma care organization. Methods of evaluation. Basic principles of treatment in traumatology and orthopedy. Bone tissue regeneration.	(**Lab**), Practical/seminar classes, Self-studies
Module 2	Proximal and diaphyseal femural fractures. Classification, clinical findings and treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 3	Posttraumatic sinovitis, hemarthrosis. Meniscal impairment, knee ligaments disorders. Patella dislocations. Patella fractures. Intraarticular fractures of femoral and tibial condyles. Clinical findings, diagnostics. Treatment. Arhthroscopy in	(**Lab**), Practical/seminar classes, Self-studies

Course module title	Course module contents (topics)	Academic activities types
	treatment injuries of the knee. Injuries of the scapula. Injuries of the clavicle. Dislocation of the clavicle. Fractures of the humeral bone. Infuries of the elbow joint. Fractures, fractures-dislocation of the forearm bones. Fractures of the distal metaphys of the radius. Fracturesand dislocations bones of the hand. Clinical findings, diagnostics, treatment.	
Module 4	Features of the medical care on pre-hospital and hospital stages. Traumatic shock. Thromboembolism. Fat embolism. Clinical findinigs. Prophylaxis.	(**Lab**), Practical/seminar classes, Self-studies
Module 5	Polytrauma.. Classificatioin. Treatment on the evacuationstage. Cuncussion, contusion of the brain. Craniocerebral hematomas. Clinical findings, diagnostics, treatment	(**Lab**), Practical/seminar classes, Self-studies
Module 6	Dislocations and fractures of the vertebral bodies. Compression fractures. Complicated fractures Clinical findings, diagnostics, treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 7	Marginal fractures. Fractures of the pelvic ring. Fractures of the acetabulum. Complicated fractures of the pelvis. Clinicalfindings, diagnostics, treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 8	Fractures of the sternum (breast bone). Fractures of the ribs.Hemo-, pneumothorax. Clinical findings, diagnostics, treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 9	Primary, secondary deforming arthrosis of large joints.	(**Lab**), Practical/seminar

Course module title	Course module contents (topics)	Academic activities types
	Rheumatoid, gout, psoriatic arthritis. Clinical findings, diagnostics, treatment.	classes, Self-studies
Module 10	Modern types of implants of large joints. Friction pair. Cement cementless endoprosthesis. Indication,contraindication, complication.	(**Lab**), Practical/seminar classes, Self-studies
Module 11	Clinical findings, diagnostics, treatment, prophylaxis. . Spondylolisthesis. Spondilodesis.	(**Lab**), Practical/seminar classes, Self-studies
Module 12	Deformity of the foot. Valgus deformity of the 1st toe. Plano-valgus foot. Varus, valgus deformity of the shin. Treatment ofposttraumatic deformities of the long bones.	(**Lab**), Practical/seminar classes, Self-studies
Module 13	Tumors of the cartilage. Tumors of the bone tissue. Soft tissue tumors. Clinical findings, treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 14	Legg-Calve-Perthes disease, Konig disease, Osgood-Schlatter disease, Kienböck's disease, Calvet disease, Scheuermann- Mau disease, Keller osteochondropathy 1,2. Clinical findings, diagnostics, treatment.	(**Lab**), Practical/seminar classes, Self-studies
Module 15	Congenital muscular torticollis. Clubfoot. Clubhand. Osteogenesis imperfecta. Clinical findings, diagnostics, treatment.	**Lab**), Practical/seminar classes, Self-studies
Module 16	Tuberculosis of the joints, tuberculous spondylitis. Clinical findings, diagnostics, treatment. Treatment of paralytic foot.	**Lab**), Practical/seminar classes, Self-studies
Module 17	Violation of mineral metabolism of bone tissue. Clinicalfindings, treatment.Осложнения остеопороза Complications of the osteoporosis. Actual treatment of the	**Lab**), Practical/seminar classes, Self-studies

Course module title	Course module contents (topics)	Academic activities types
	osteoporosis. Complications of ostroporosis.	

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Type of academic activities	Classroom equipment	Specialised educational / laboratory equipment, software, and materials for course study (if necessary)
Lab work	Computers and multimedia projectors	Skeletal model (bones, joints) Artificial bones Metal devices for osteosynthesis (blocking and non-blocking intramedullary nail, plates DCP, LCP, screws, external fixation devices (Ilizarov, Volkov-Oganesyan device, rod devices and other) X-rays, CT X-rays, MRI images
Seminar	Computers and multimedia projectors	Skeletal model (bones, joints) Artificial bones Metal devices for osteosynthesis (blocking and non-blocking intramedullary nail, plates DCP, LCP, screws, external fixation devices (Ilizarov, Volkov-Oganesyan device, rod devices and other) X-rays, CT X-rays, MRI images
Self-studies	Computers and multimedia projectors	Skeletal model (bones, joints) Artificial bones Metal devices for osteosynthesis (blocking and non-blocking intramedullary nail, plates DCP, LCP, screws, external fixation devices (Ilizarov, Volkov-Oganesyan device, rod devices and other) X-rays, CT X-rays, MRI images

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main readings:

- Traumatology [Electronic resource]: National guidelines. Short edition / Edited by G. P. Kotelnikov, S. P. Mironov. - M.: GEOTAR-Media, 2017. - 528 p. - ISBN 978-5-9704-4221-0.

(Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=475687&idb=0).

- Traumatology and orthopedics [Electronic resource]: Textbook / Edited by N. V. Kornilov. - 3rd ed., additional and re-edited-Moscow: GEOTAR-Media, 2016. - 592 p. - ISBN 978-5-9704-3895-4. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=475837&idb=0).
- Traumatology and orthopedics [Electronic resource]: Textbook / Edited by N. V. Kornilov. -3rd ed., additional and re-edited-Moscow: GEOTAR-Media, 2016. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464704&idb=0).
- Traumatology [Electronic resource]: Textbook / G. P. Kotelnikov, V. F. Miroshnichenko. - M.:GEOTAR-Media, 2015. - 288 p. - ISBN 978-5-9704-3573-1. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=475686&idb=0).
- Damage and Fracture Mechanics [Electronic resource]: Contributed volume / B. Taoufik, E. Mimoun, P. Guy. - Electronic text data. - : Springer Netherlands, 2009. - System requirements:Windows XP and higher. - ISBN 978-90-481-2669-9. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=327316&idb=0).

Additional readings:

- Diagnosis and treatment of fractures of the proximal femur in elderly and senile people [electronic resource]: educational and methodological manual / N. V. Zagorodniy [et al.]. - electronic text data. - Moscow: Publishing House of RUDN, 2012. - 18 p.: ill. - ISBN 978-5-209-04249-5. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=380679&idb=0)
- Endoprosthetics of large human joints [Text/electronic resource]: Textbook / N. V. Zagorodniy,

E. Sh. Lomtatidze; RUDN; N. V. Zagorodniy et al. - Moscow: Publishing House of RUDN, 2008. - 134 p.: ill.- (Priority national project "Education": A complex of export-oriented innovative educational programs in priority areas of science and technology). - Application: CDROM

(Electr.resource). - 51.89. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=287944&idb=0).

- Surgical treatment of deformities and degenerative diseases of the spine in children and adults[Text/electronic resource]: Textbook / A. A. Laka; RUDN; A. A. Laka et al. -Moscow: Publishing House of RUDN, 2008. - 190 p.: ill.- (Priority national project "Education": A complex of export-oriented innovative educational programs in priority areas of science and

technology). - Application: CD ROM (Electr.resource). - 69.19. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=287811&idb=0).

- Modern methods of bone osteosynthesis in acute injury of the musculoskeletal system [Text/electronic resource]: Textbook / M. A. Abdulkhabirov, N. V. Zagorodniy; RUDN; N. V. Zagorodny- et al. - M.: Publishing House of RUDN, 2008. - 222 p.: ill.- (Priority national project"Education": A complex of export-oriented innovative educational programs in priority areas of science and technology). - Application: CD ROM (Electr.resource). - 79.32. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=287947&idb=0).
- Technique of preoperative planning of hip replacement [Text/electronic resource]: Methodological recommendations for orthopedic traumatologists / N. V. Zagorodniy [et al.]. -Electronic text data. - Moscow: Publishing House of RUDN, 2014. - 31 p.: ill. - ISBN 978-5- 209-06157-1 : 52.2. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=434000&idb= 0).
- Innovative technologies in pelvic fractures management [Text]: article in English / E. I. Solod[et al.] / / Bulletin of the Peoples ' Friendship University of Russia: Medicine. - 2016. - No. 4. -pp. 37-46. (Link to the document: http://lib.rudn.ru/MegaPro/UserEntry?Action=Rudn_FindDoc&id=466721&idb=0)

Internet (based) sources

- 1. Electronic libraries with access for RUDN students:
  -Electronic library network of RUDN – ELN RUDN http://lib.rudn.ru/MegaPro/Web
  - ELN «University Library online» http://www.biblioclub.ru
  - ELN Urait http://www.biblio-online.ru
  - ELN «Student Advisor» www.studentlibrary.ru
  - ELN «Lan» http://e.lanbook.com/

- 2. Databases and search engines:
  - electronic fund of legal and regulatory and technical documentation http://docs.cntd.ru/
  - search system Yandex https://www.yandex.ru/
  - search system Google https://www.google.ru/
  - abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/

*Training toolkit for self- studies to master the course *:*

1. The set of lectures on the course "**Traumatology and Orthopedics**"
2. The laboratory workshop (if any).on the course " **Traumatology and Orthopedics**"
3. The guidelines for writing a course paper / project (if any) on the course " **Traumatology and Orthopedics**

* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

The assessment toolkit and the grading system* to evaluate the competences formation level (**GPC-4, PC-1, PC-2, PC-3)** upon the course study completion are specified in the Appendix to the course syllabus.

* The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

DEVELOPERS:

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