

Документ подписан простой электронной подписью  
Информация о владельце:  
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Должность: Ректор  
Дата подписания: 23.08.2026 14:30  
Уникальный программный ключ:  
ca953a0120d891083f939675078ef1a989dae18a

**Federal State Autonomous Educational Institution for Higher Education  
Peoples' Friendship University of Russia named after Patrice Lumumba**

**Institute of Medicine**

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(Educational division)

**COURSE SYLLABUS**

**TOPICAL ISSUES OF NEONATOLOGY**

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(Course name)

**Recommended by the Didactic council for the Education field (specialty)**

**31.05.01 General Medicine**

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(Education field (specialty) code and title)

**Recommended by the Didactic Council for the Education Field of:**

**31.05.01 General Medicine**

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(Higher education field (profile/specialization) title)

**2025**

## 1. COURSE GOAL(s)

The goal of the course “Topical Issues of Neonatology” is to mastering theoretical and practical knowledge, skills and abilities in the field of diagnostics, emergency care, treatment tactics, medical examination and prevention of the most common diseases of newborns.

The discipline “Topical Issues of Neonatology” is part of the program of the specialty “General Medicine” in the field 31.05.01 “General Medicine” and is studied in the 9th semester in the 5th year. The discipline is implemented by the Department of Pediatrics. The discipline consists of 5 sections and 14 topics and is aimed at studying and improving basic, fundamental medical knowledge in the field of pediatrics, forming the professional competencies of a doctor capable of successfully solving professional problems.

## 2. REQUIREMENTS OF COURSE LEARNING OUTCOMES

The discipline “Topical Issues of Neonatology” is aimed at developing the following competences (parts of competencies) in students:

*Table 2.1. List of competences formed in students during course of study (learning outcomes)*

| <b>Code</b> | <b>Competence</b>   | <b>Competence Development Indicators</b>   |
|-------------|---|--|
| PC-2        | Able to examine a patient in order to determine a diagnosis     | PC-2.2. Able to make a preliminary diagnosis and make up a plan of laboratory and instrumental examinations of a patient.<br><br>PC-2.7. Able to conduct a differential diagnosis with other diseases/conditions, including urgent ones, as well as to make a diagnosis taking into account the current international statistical classification of diseases and problems related to health (ICD). |
| PC-3        | Able to prescribe treatment and monitor its efficacy and safety | PC-3.1. Able to develop a treatment plan for a disease or condition taking into account the diagnosis, age and clinical picture in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the  |

|  |  |   |
|--|--|---|
|  |  | <p>provision of medical care, taking into account the standards of medical care.</p> <p>PC-3.2. Able to prescribe medications, medical devices and therapeutic nutrition taking into account the diagnosis, age and clinical picture of the disease and in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care, taking into account the standards of medical care.</p> |
|--|--|---|

### 3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course "Topical issues of Neonatology" belongs to the part of the educational relations – block B1 of the Higher Education Programme – formed by students.

Within the framework of the educational programme, students also study other courses and/or practicals that contribute to achieving the expected learning outcomes of "Topical issues of Neonatology " course.

*Table 3.1. List of Higher Education Programme disciplines that contribute to expected learning outcomes*

| Code | Title of competence   | Previous disciplines  | Subsequent disciplines/modules, practicals*   |
|------|---|---|---|
| PC-2 | Able to examine a patient in order to determine a diagnosis | Surgery practical: surgeon's assistant; Obstetrics and gynecology practical: gynecologist's assistant;<br>General surgery;<br>Dermatovenerology;<br>Neurology, medical genetics, neurosurgery;<br>Ophthalmology;<br>Faculty surgery;<br>Obstetrics and gynecology;<br>Otorhinolaryngology;<br>Faculty therapy;<br>Propaedeutics of internal diseases;<br>Urology; | Obstetrics and gynecology practical: obstetrician's assistant;<br>Practical in General practice: pediatrician's assistant;<br>Hospital therapy;<br>Endocrinology;<br>Outpatient therapy;<br>Hospital surgery, pediatric surgery;<br>Pediatrics;<br>Obstetrics and gynecology;<br>Anesthesiology, resuscitation, intensive care;<br>Oncology, radiation therapy;<br>Reproductive health;<br>Traumatology, orthopedics;<br>Maxillofacial Surgery; |

|      |   |  |   |
|------|---|--|---|
|      |   | <i>Medical enzymology**</i> ;<br>Molecular genetic methods;<br>Microbiology, virology;<br>Immunology;<br>Evidence-based medicine;<br><i>Molecular genetics in practical biology and medicine**</i> ;<br>Radiation diagnostics;<br>Pathophysiology, clinical pathophysiology;<br>Pathological anatomy, clinical pathological anatomy;<br>Medical elementology;  | General medical skills;<br>Emergency conditions;<br>Infectious diseases;<br>Psychiatry, medical psychology;<br>Allergology;<br>Phthisiology;<br>Endoscopic urology;<br>Telemedicine;<br>Cardiology in quests;<br>Sectional course;  |
| PC-3 | Able to prescribe treatment and monitor its efficacy and safety | Dermatovenerology;<br>Neurology, medical genetics, neurosurgery;<br>Faculty surgery;<br>Obstetrics and gynecology;<br>Otorhinolaryngology;<br><i>Clinical research**</i> ;<br><i>Clinical Trials**</i> ;<br>Faculty Therapy;<br>Ophthalmology;<br>Urology;<br><i>Fundamentals of Integrative Medicine**</i> ;<br>Basics of therapeutic nutrition;<br><i>Introduction to Nutrition**</i> ;<br>Pharmacology;<br>Surgery practical: surgeon's assistant; Obstetrics and gynecology practical: gynecologist's assistant; | Hospital therapy;<br>Endocrinology;<br>Outpatient therapy;<br>Hospital surgery, pediatric surgery;<br>Pediatrics;<br>Obstetrics and gynecology;<br><i>Outpatient cardiology**</i> ;<br>Oncology, radiation therapy;<br>Traumatology, orthopedics;<br>Maxillofacial Surgery;<br>Clinical pharmacology;<br>Cardiology in quests;<br>Infectious diseases;<br>Psychiatry, medical psychology;<br>Allergology;<br>Phthisiology;<br>Endoscopic urology;<br>Telemedicine;<br>Geriatrics and palliative medicine;<br>Reproductive health;<br>Obstetrics and gynecology practical: obstetrician's assistant;<br>Practical in General practice: pediatrician's assistant; |

\* - created in accordance with the competence matrix and Higher Education programme

\*\* - elective disciplines/practicals

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

Total course workload of “Topical issues of Neonatology” is equal to 2 credits.

*Table 4.1. Types of academic activities during the period of the HE programme mastering for FULL-TIME studies*

| Type of academic activity                 | Total academic hours. | Semester(s) |
|---|-----------------------|-------------|
|   |                       | 9           |
| <i>Classroom learning, academic hours</i> | 34                    | 34          |
| Lectures (L)                              | 0                     | 0           |

| Type of academic activity  |                       | Total academic hours. | Semester(s) |
|--|-----------------------|-----------------------|-------------|
|  |                       |                       | 9           |
| Lab work (LW)  |                       | 34                    | 34          |
| Seminars (workshops/tutorials) (S)   |                       | 0                     | 0           |
| <i>Self-study, academic hours</i>  |                       | 35                    | 35          |
| <i>Evaluation and assessment (exam or pass/fail grading), academic hours</i> |                       | 3                     | 3           |
| <b>Total course workload</b>   | <i>academic hours</i> | <b>72</b>             | 72          |
|  | <i>credits</i>        | <b>2</b>              | 2           |

## 5. COURSE CONTENTS

*Table 5.1. Course content (modules) according to type of academic activity*

| Module          | Course module names  | Module content (topics) |  | Type of academic activity* |
|-----------------|--|-------------------------|--|----------------------------|
| <b>Module 1</b> | Introduction to neonatology                                | <b>1.1.</b>             | Basic concepts of neonatology. Perinatal history. Neonatal risk groups. Anatomical and physiological features and methods of medical examination of the newborn. | LW                         |
|                 |  | <b>1.2.</b>             | Adaptation of the newborn (borderline, transient states).  | LW                         |
|                 |  | <b>1.3.</b>             | Neonatal screening.  | LW                         |
|                 |  | <b>1.4.</b>             | The premature newborn.   | LW                         |
| <b>Module 2</b> | Perinatal pathology of the nervous system and birth trauma | <b>2.1.</b>             | Perinatal asphyxia, hypoxic-ischemic encephalopathy and its consequences.  | LW                         |
|                 |  | <b>2.2</b>              | Birth trauma.  | LW                         |
| <b>Module 3</b> | Diseases associated with metabolic disorders               | <b>3.1.</b>             | Neonatal jaundice (hyperbilirubinemia).  | LW                         |
|                 |  | <b>3.2.</b>             | Hemorrhagic disease of the newborn.  | LW                         |

| Module   | Course module names   | Module content (topics) |   | Type of academic activity* |
|----------|-----------------------|-------------------------|---|----------------------------|
| Module 4 | Neonatal pulmonology  | 4.1.                    | Neonatal respiratory distress syndrome.   | LW                         |
|          |                       | 4.2.                    | Bronchopulmonary dysplasia (BPD).   | LW                         |
|          |                       | 4.3.                    | Congenital pneumonia.   | LW                         |
| Module 5 | Perinatal infections. | 5.1.                    | Neonatal infections of the skin and subcutaneous fat, omphalitis, conjunctivitis. | LW                         |
|          |                       | 5.2.                    | Neonatal sepsis.  | LW                         |
|          |                       | 5.3.                    | Congenital (intrauterine) infections.   | LW                         |

\* - created for **FULL-TIME** study only: L – lectures; LW – lab work; S – seminars/workshops

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

*Table 6.1 Classroom Infrastructure and Technology Support Requirements*

| Classroom for academic activity type | Classroom equipment  | Specialized educational/laboratory equipment, software and materials for the study of the discipline (if necessary)  |
|--------------------------------------|--|--|
| Laboratory                           | A classroom for conducting seminar-type classes, group and individual consultations, continuous assessments and mid-term assessment, equipped with a set of specialized furniture and multimedia presentation equipment. | Set of specialized furniture; technical equipment: NEC VT59 multimedia projector, ASUS X50M and Dell Latitude D631 laptops, there is Internet access. Software: Microsoft products (OS, office application package, including MS Office / Office 365, Teams, Skype). |
| For self-studies                     | Classroom for students' independent work (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to EIES.   |  |

\* - classroom for students' independent study **MUST** be indicated

## 7. RECOMMENDED SOURCES FOR COURSE STUDY

### *Main reading*

1. Robert M. Kliegman, Brett J. Bordini, Heather Toth et al. Nelson Pediatric Symptom-Based Diagnosis: Common Diseases and their Mimics. Elsevier, 2022. ISBN 978-0-323-76174-1. DOI: <https://doi.org/10.1016/C2019-0-01335-0>
2. Sarah S. Long. Principles and Practice of Pediatric Infectious Diseases. Elsevier, 2022. ISBN 978-0-323-75608-2. DOI <https://doi.org/10.1016/C2019-0-00075-1>
3. Akhil Maheshwari. Principles of Neonatology. Elsevier, 2023. ISBN- 978-0-323-69415-5 DOI <https://doi.org/10.1016/C2018-0-02694-8> URL:<https://www.sciencedirect.com/book/9780323694155/principles-of-neonatology#book-description>
4. Henry C. Lee. Neonatal Health Care. Children, 2021. ISBN 978-3-0365-0731-6. URL: <https://www.mdpi.com/books/reprint/3841-neonatal-health-care>

### *Additional reading*

1. Tonia Vassilakou. Childhood Malnutrition. Children, 2021. ISBN978-3-0365-2268-5 URL: <https://www.mdpi.com/books/reprint/4560-childhood-malnutrition>
2. Neonatal and Pediatric Cerebro-Cardiopulmonary Resuscitation / Michael Shoykhet [et al.]. 2018. 1 c. ISBN 9782889456598 URL: <https://www.frontiersin.org/research-topics/4942/neonatal-and-pediatric-cerebro-cardio-pulmonary-resuscitation-ccpr>
3. Wynn J.L., Bliss J.M.. The Neonatal Immune System: A Unique Host-Microbial Interface, 2018. 1 c. ISBN 9782889454037 URL: <https://www.frontiersin.org/research-topics/5017/the-neonatal-immune-system-a-unique-host-microbial-interface>
4. Lissauer Tom. Illustrated Textbook of Paediatrics / T. Lissauer, W. Carrol. - Fifth Edition - China : Elsevier, 2017. - 583 p.: il. - ISBN 978-0-7234-3871-7: 6113.30

### *Internet-(based) sources*

1. RUDN ELS and third-part ELS with contract-based access for RUDN students:
  - RUDN Electronic library system – RUDN ELS  
<http://lib.rudn.ru/MegaPro/Web>
  - “University library online” ELS  
<http://www.biblioclub.ru>
  - Urait ELS  
<http://www.biblio-online.ru>
  - «Консультант студента» ELS  
[www.studentlibrary.ru](http://www.studentlibrary.ru)
  - «Лань» ELS  
<http://e.lanbook.com/>
  - «Троицкий мост» ELS

2. Databases and search engines:

- electronic database of legal, regulatory and technical documentation

<http://docs.cntd.ru/>

- Yandex search engine

<https://www.yandex.ru/>

- Google search engine

<https://www.google.ru/>

- SCOPUS reference database

<http://www.elsevierscience.ru/products/scopus/>

*Learning toolkits for students' self - studies in the mastery of the course/module:*

1. Presentations on the discipline “Topical issues of Neonatology”.

2. Methodological guidelines for the implementation and registration of testing and independent work on the discipline “Topical issues of Neonatology”.

\* - all learning toolkits for self- studies of students are on the course page in **RUDN LMS TUIS** in accordance with current procedures!

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

Assessment materials and grading system\* for the evaluation of achieved competency levels (parts of competences) for the learning outcomes of the “Topical issues of Neonatology” course are presented in the appendix to this Course syllabus.

\* - assessment and grading systems are based on the corresponding local regulatory act of RUDN University

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