

Документ подписан простой электронной подписью
Информация о владельце:
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Должность: Ректор
Дата подписания: 20.05.2024 16:21:12
Уникальный программный ключ:
ca953a0120d891083f939673078ef1a989dae18a

**Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
NAMED AFTER PATRICE LUMUMBA
(RUDN University)**

Academy of Engineering

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

COURSE SYLLABUS

Regional Geology. Geology of Central and Southern Africa

course title

Recommended by the Didactic Council for the Education Field of:

05.04.01 Geology

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Mining Geology

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The goal of the course “Regional Geology. Geology of Central and Southern Africa” is acquiring knowledge, skills and experience in the field of the geological structure of the main regions of the world, composed of different-age blocks of the Earth's crust, which have passed through different in duration and tectonic transformations formation history, characterizing the stages of competence formation and ensuring the achievement of the planned results of the educational programme.

The main objectives of the course are:

- An introduction to the location and formation stages of platform and folded areas of the world, particularly Africa, and to the location of the largest and most superordinate structures of these areas;
- Students will learn how to analyze overview and small-scale geological and tectonic maps, including those of Africa;
- Get an overview of the stages of geodynamic change in the formation of the structures and superstructures of Africa's major regions.

2. REQUIREMENTS TO LEARNING OUTCOMES

The course implementation is aimed at the development of the following competences (competences in part):

Table 2.1. List of competences that students acquire during the course

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-5.	Able to analyze and take into account the diversity of cultures in the process of intercultural interaction.	GC-5.1 Finds and uses in social and professional communication information about the cultural characteristics and traditions of different social groups;
		GC-5.2. gathers information on a given topic, taking into account ethnicities and religions most widely represented in the places of research;
		GC-5.3 Adheres to the principles of non-discriminatory interaction in personal and mass communication in order to fulfill professional tasks and enhance social integration.
GPC-2.	Able of independently formulating the research objectives and establishing a sequence for resolving professional problems.	GPC-2.1. Knows the basics and methods of organizing research activities, methods of setting goals and methods of achieving them;
		GPC-2.2. is able to develop research methods;
GPC-4.	Suitable of representing, protecting, and disseminating the outcomes of their professional activities.	GPC-4.1 Knows the main results of his/her scientific activity, methods of their presentation, protection and dissemination;
		GPC-4.2. is able to understand and analyze the results of professional activities, use own scientific achievements. discuss and disseminate the results of their professional activities.

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

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

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 study results

Competence code	Competence descriptor	Previous courses/modules	Subsequent courses/modules
GC-5.	Able to analyze and take into account the diversity of cultures in the process of intercultural interaction.		Professional Russian (as a foreign language); Final state attestation
GPC-2.	Able of independently formulating the research objectives and establishing a sequence for resolving professional problems.		Research Work (Geological and Geophysical Survey). Part 1; Research Work (Mining Geology). Part 1; Research Work (Geological and Geophysical Survey). Part 2; Research Work (Mining Geology). Part 2; Introduction Practical Training; Mining Hydrogeology; Modelling of Mineral Deposits; Geological and Geophysical Basics of Mineral Prospecting and Exploration; Pre-graduation Practical Training; Final state attestation
GPC-4.	Suitable of representing, protecting, and disseminating the outcomes of their professional activities.		Pre-graduation Practical Training; Research Work (Geological and Geophysical Survey). Part 1; Research Work (Mining Geology). Part 1; Research Work (Geological and Geophysical Survey). Part 2; Research Work (Mining Geology). Part 2; Introduction Practical Training;

Competence code	Competence descriptor	Previous courses/modules	Subsequent courses/modules
			Mining Hydrogeology; Modelling of Mineral Deposits; Geological and Geophysical Basics of Mineral Prospecting and Exploration; Final state attestation

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course “Regional Geology. Geology of Central and Southern Africa” is 4 credit units.

Table 4.1. Types of academic activities during the periods of higher education programme mastering

Type of academic activities	TOTAL, ac. hrs.	Semesters/ training modules
		1
<i>Contact academic hours</i>	36	36
Lectures (LC)	18	18
Lab work (LW)	-	-
Seminars (workshops/tutorials) (S)	18	18
<i>Self-studies</i>	90	90
<i>Evaluation and assessment (exam/passing/failing grade)</i>	18	18 <i>Exam</i>
Course workload	academic hours	144
	credits	4

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Module 1. Introduction	1.1. The subject and methods of regional geology, its relationship with other geological disciplines 1.2. The internal structure of the Earth, geotectonic hypotheses (Plate tectonics and plume tectonics) and stages of development of the Earth's crust 1.3. Principles of tectonic zoning. Zoning of continents. Zoning of the oceans. Types of tectonic maps	LC, S
Module 2. General features of the structure of continental massifs	2.1. The largest structural elements of the continental massifs 2.2. Eurasian, North American, African massifs	LC, S

Course module title	Course module contents (topics)	Academic activities types
	2.3. South American, Australian and Antarctic massifs	
Module 3. Geology and tectonic structure Africa	3.1. The foundation of the ancient platform 3.2. Sedimentary cover of an ancient platform 3.3. The main stages of the development of the African Platform	LC, S

* LC - lectures; LW - lab work; S - seminars.

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)
Lecture	A lecture hall for lecture-type classes, equipped with a set of specialised furniture; board (screen) and technical means of multimedia presentations.	
Seminar	A classroom for conducting seminars, group and individual consultations, current and mid-term assessment; equipped with a set of specialised furniture and technical means for multimedia presentations.	
Self-studies	A classroom for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment.	

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main reading:

1. Roberts D.G., Bally A.W. (Eds.) Regional Geology and Tectonics: Principles of Geologic Analysis. Elsevier, 2012. — 865 p. — ISBN: 978-0-444-53042-4. URL: <https://sciarium.com/file/165949/>

2. Roberts D.G., Bally A.W. (eds.). Regional Geology and Tectonics: Phanerozoic Rift Systems and Sedimentary Basins. Volume 1B. Elsevier, 2012. — 549 p. — ISBN: 978-0-444-56356-9. URL: <https://sciarium.com/file/460705/>

3. Schluter T. Geological Atlas of Africa (with notes on stratigraphy, tectonics, economic geology, geohazards and geosites each country). New York, 2006 г., 255 стр., ISBN: 3-540-29144-x. URL: <https://www.geokniga.org/books/2719>

Additional reading:

1. Varet J. Geology of Afar (East Africa). Springer, 2018. — 345 p. — (Regional Geology Reviews). — ISBN: 978-3-319-60863-1. URL: <https://sciarium.com/file/304532/>
2. Detay M., Detay A.-M. Geological Wonders of Namibia. Struik Nature, 2017. — 140 p. — ISBN: 9781775842941. URL: <https://sciarium.com/file/295481/>
3. Sharkov E.V. (ed.) New Frontiers in Tectonic Research - General Problems, Sedimentary Basins and Island Arcs. InTech, 2011. — 350 p. — ISBN 978-953-307-595-2 (Hard cover). URL: <https://sciarium.com/file/51432/>
4. Petters S.W. 1991. Regional Geology of Africa. Lecture Notes in Earth Sciences Series Vol. 40. xxi + 722 pp. Berlin, Heidelberg, New York, London, Paris, Tokyo, Hong Kong: Springer-Verlag. ISBN 3 540 54528 X.

Internet sources:

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements:
 - RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
 - EL "University Library Online" <http://www.biblioclub.ru>
 - EL "Yurayt" <http://www.biblio-online.ru>
 - EL "Student Consultant" www.studentlibrary.ru
 - EL "Lan" <http://e.lanbook.com/>
 - EL "Trinity Bridge" <http://www.trmost.ru>
2. Databases and search engines:
 - electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>
 - Yandex search engine <https://www.yandex.ru/>
 - Google search engine <https://www.google.ru/>
 - Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

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

1. The set of lectures on the course “Regional Geology. Geology of Central and Southern Africa”.
2. Guidelines for students on the development of the course “Regional Geology. Geology of Central and Southern Africa”.

* 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 (competences in part) 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:

**Associate Professor,
Department of Subsoil Use and
Oil&Gas Engineering**

position, educational department

M. Romero

name and surname

**Associate Professor,
Department of Subsoil Use and
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