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Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
(RUDN University)
Institute of Medicine
(Educational Division)

SCIENTIFIC RESEARCH PROGRAMME

1.5.7. Genetics

(Specialisation)

Scientific research is carried out within the implementation of the PhD Programme:

1.5.7. Genetics: Molecular Basis of Human Hereditary Diseases

1. SCIENTIFIC RESEARCH AIMS

The aim of scientific research is preparation of the PhD thesis.

Tasks of scientific research are:

- acquisition of scientific research methodology and methods;
- to acquire practical skills in carrying out molecular genetic studies
- the use of modern information technologies;
- to acquire skills in collection, processing, storage, and distribution of scientific information;
- formation of skills and ability to participate in scientific discussion, present results of the research in various forms (presentation, abstract, analytical review, critical review, report, scientific article, etc.);
- collection and analysis of data.

2. REQUIREMENTS TO SCIENTIFIC RESEARCH OUTCOMES

In consequence of the scientific research, a postgraduate is due to:

Know scientific research methodology; modern technologies of information search and processing; requirements to the sources of scientific information and the presentation of the scientific research results.

Be able to organize independent research work; set goals, determine the subject and objectives of the study; collect, systematize and study scientific literature; conduct genetic research; analyze medical documentation on the research topic (if necessary); present the scientific research results; make conclusions based on the results of the research.

Have the skills in independent research; genetic techniques; the use of modern software for statistical data processing; public speaking; writing scientific articles.

The scientific research plan is approved in the individual plan of a postgraduate student, the requirements for which are established by the local regulations of the RUDN University.

3. SCIENTIFIC RESEARCH WORKLOAD

The total scientific research workload is equal to 210 credits (7560 ac. hours).

4. SCIENTIFIC RESEARCH STAGES*

Table 4.1. Scientific research stages

Stages	Contents (Topics)	Workload, ac.hours
1st year		
Module 1. Scientific activity of a postgraduate student aimed at preparing a PhD thesis	The study of methodological recommendations for the scientific research. Tutorials with the supervisor	1548
	Selection of optimal research methods, equipment, and reagents	
	Studying of Laboratory Operations Manuals	
	Library-research. Preparation of a literature review on the research topic	
Module 2. Preparing and publishing of	Preparing of scientific article or conference paper	216

Stages	Contents (Topics)	Workload, ac.hours
scientific articles in peer-reviewed journals and conference papers		
Midterm assessment		72
	Totally:	1836
2nd year		
Module 1. Scientific activity aimed at the thesis preparation	Collection of samples; laboratory studies	1332
	Statistical processing of data	
	Analysis of data	
	Participation in scientific conferences	
Module 2. Preparing and publishing of scientific articles in peer-reviewed journals and conference papers	Preparing and publishing of scientific articles in peer-reviewed journals	216
Midterm assessment		72
	Totally:	1620
3rd year		
Module 1. Scientific activity aimed at the thesis preparation	Collection of samples; laboratory studies	1872
	Statistical processing of data	
	Analysis of data	
	Participation in scientific conferences	
Module 2. Preparing and publishing of scientific articles in peer-reviewed journals and conference papers	Preparing and publishing of scientific articles in peer-reviewed journals	216
Midterm assessment		72
	Totally:	2160
4th year		
Module 1. Scientific activity aimed at the thesis preparation	Summing up the research results	1656
	Writing a thesis	
	Preparation of a scientific report and presentation on the results of the study	
	Discussion of the results of the study at a Department meeting	
	Writing an author's abstract	
Module 2. Preparing and publishing of scientific articles in peer-reviewed journals and conference papers	Preparing and publishing of scientific articles in peer-reviewed journals	216
Midterm assessment		72
	Totally:	1944
	Total:	7560

5. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 5.1. Classroom Equipment and Technology Support Requirements

Classroom for Academic Activity Type	Classroom Equipment	Specialized Equipment
Specialized classroom	Lecture/Seminars/ Lab Classroom, equipped with a set of specialized furniture (328)	A set of specialized furniture; whiteboard; a set of devices includes multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Microscopes
Laboratory	Laboratory of Biomolecular research (332, 332A)	PCR laboratory equipment
Self-studies classroom	Self-studies classroom, equipped with a set of specialized furniture (аудитория 342)	A set of specialized furniture; whiteboard; a set of devices includes multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release)

6. WAYS OF SCIENTIFIC RESEARCH

Scientific research is carried out in the Laboratory of Biomolecular research at RUDN university, other institutions (in case of need), and libraries.

The research is performed during all years of study in accordance with the academic schedule.

7. RECOMMENDED SOURCES FOR COURSE STUDIES

1. RUDN online library <http://lib.rudn.ru/MegaPro/Web>
2. National Center for Biotechnology Information (NCBI) - www.ncbi.nlm.nih.gov
3. ScienceDirect - <http://www.sciencedirect.com>
4. Scientific electronic library: - <http://elibrary.ru>
5. Google Academy - <http://scholar.google.ru/>
6. Research literature according to the topic of research

Learning toolkits for self- studies in the RUDN LMS TUIS:

Methodological recommendations on the internship.

8. ASSESSMENT AND EVALUATION TOOLKIT

Assessment and evaluation toolkit as well as the grading system are presented in the Supplement to the Course Syllabus.

Control of acquired knowledge and skills is carried out in the form of oral colloquiums and evaluation of the research reports. The report is approved at the meeting of the department. The report should contain information on the implementation of the individual plan, published scientific articles, participation of the postgraduate student in Russian and international conferences.

Criteria for evaluation:

- depth of scientific research planning;
- consistency of presentation;
- correspondence of the aim and tasks of the research to the topic;
- the adequacy of the research methods;
- the relevance, reliability and completeness of the collected information;
- correlations between tasks and conclusions of the study;
- the content of articles;
- the accuracy of the report and its completeness.

DEVELOPERS:

Associate professor,
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