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

Educational Division (faculty/institute/academy):
Institute of Ecology

COURSE SYLLABUS

GREEN ECONOMY AND SUSTAINABILITY ASSESSMENT TOOLS

Recommended by the Didactic Council for the Education Field for the specialization:

44.04.02 Psychological and pedagogical education

The mastering of the course is carried out as part of the implementation of the main professional syllabus (Higher Education programme, specialization)

Environmental Pedagogy *(master's programme)*

AGREED:

Head of the Higher Education Programme	Chairperson of the Didactic Council	Head of the Department
A. I. Kurbatova		
(подпись)	(подпись)	(подпись)
«___»_____202__ г.	«___»_____202__ г.	«___»_____202__ г.

Moscow, 2022

1. Course Goals and Objectives:

The goal of the curse is to enable learners to familiarize themselves with the rationale and core concepts guiding an inclusive green economy. Discuss both opportunities and challenges at global and national level to achieve sustainability, resource efficient and socially inclusive development.

Objectives:

- Describe the rationale and core concepts for realizing an inclusive green economy against business-as-usual practices
- Identify enabling conditions for greening national economies
- Outline principal opportunities and challenges in key sectors
- Provide examples of national strategies and planning to advance an inclusive green economy
- Distinguish international frameworks and initiatives in support of an inclusive green economy

2. Course in Higher Education Programme Structure:

The course «**Green economy and sustainability assessment tools»** refers to an optional part of block 1 of the curriculum.

Table No. 1 shows the previous and subsequent disciplines aimed at the formation of the competencies of the corresponding course in accordance with the competence matrix of EP HE.

Table 1. Previous and subsequent courses aimed at building competencies

Nr.	Competence code and title	Previous courses	Subsequent courses
General competencies			-
1	GC -2.1 The ability to critically analyze and evaluate modern scientific achievements, generate new ideas in solving research and practical problems, including in interdisciplinary areas.	-	
Specialized professional competencies (type of professional activity – research, control and expert, organizational and management)			
3	SPC-2.1. The ability to develop options for management decisions and justify their choice based on sustainable development criteria.	-	Research work

3. Requirements to Learning Outcomes:

The process of studying the course is aimed at the formation of the following competencies according to the educational standard:

General competence – 2.1. The ability to critically analyze and evaluate modern scientific achievements, generate new ideas in solving research and practical problems, including in interdisciplinary areas.

Specialized professional competence – 8. The ability to develop options for management decisions and justify their choice based on sustainable development criteria.

As a result of studying the course, the student must:

Know: economic tools for greening the economy, as well as methods for evaluating the effectiveness of proposed activities, projects, activities, taking into account the socio-economic and environmental consequences of their implementation.

Be able to: apply knowledge in the field of "green" economy in practice, develop options for management decisions and justify their choice based on sustainable development criteria.

Possess: ability to applied methods for evaluating the effectiveness of proposed activities, projects, activities, including taking into account the socio-economic and environmental consequences of their implementation.

4. Course Workload and Academic Activities

The course workload of «Green economy and sustainability assessment tools» is 4 credits.

Table 4.1. Types of academic activities during the period of the programme mastering

Full-time

Types of academic activities		Total hours	Semesters							
			1	2	3	4	5	6	7	8
Contact academic hours		34			34					
Including:										
Lectures		17			17					
Seminars (workshops/tutorials)		17			17					
Lab works										
Self-study		74			74					
Evaluation and assessment (exam; pass/fail grading)		36			36					
Total course workload	hours	144			144					
	credits	4			4					

Part-time

Types of academic activities		Total hours	Semesters							
			1	2	3	4	5	6	7	8
Contact academic hours		12								
Including:										
Lectures										
Seminars (workshops/tutorials)		12		12						
Lab works		-								
Self-study		126								
Evaluation and assessment (exam; pass/fail grading)		6								
Total course workload	hours	144								
	credits	4								

5. Course content

Table 5.1 Course modules and contents

Name of discipline	**Green Economy and Sustainability**

	Assessment Tools
Discipline volume	4 3E (144 hours)
Discipline outline	
Name of discipline units	Brief summary of discipline units
1. Sustainability and circular economy	Basic principles of the circular economy. Circular economy model. Infrastructure of the circular economy. Theoretical foundations of the circular economy. Formation of the subject area, concept and features. The concept of "cradle to cradle". The model of the circular economy and the stages of its formation. Indicators of sustainable development in the field of waste management. Basic principles of the circular economy in the field of waste management.
2. Climate-neutral resource management	Contribution of the waste management sector to the Earth's climate. Water resources and climate change. Adaptation and mitigation strategies.
3. Cleaner production	Drinking Water treatment. Water properties, water treatment stages.
4. Green technologies in wastewater treatment	Basic characteristics of wastewater. Oil and grease. Other important wastewater characteristics. Aerobic, anoxic, anaerobic biological treatment. Aerobic biological treatment. Anoxic biological treatment. Anaerobic biological treatment. Microorganisms in wastewater. Biological cells. Ecology of biological wastewater treatment. Reaction kinetics.

6. Classroom equipment and technology support requirements

Table 6.1 Classroom equipment and technology support requirements

Classroom for Academic Activity Type	**Classroom equipment**	**Specialized educational/laboratory equipment and materials for mastering the module**
Lecture hall (room)		
Laboratory		
Seminar room	Audience equipped with multimedia	

	equipment, personal computers for laboratory work. Microsoft Office software: Microsoft Windows, MS Office / Office 365, MS Teams; Chrome, Skype.	
Computer lab		
For students'self-study		

7. Recommended sources for course studies

Main reading

1. Kanianska R. Green Growth and Green Economy. Textbook to the course Green growth and green economy. Belianum: Banská Bystrica. 2017.

2. Barbier E. B., Markandya A. A new blueprint for a green economy. Routledge. 2013. URL: https://doi.org/10.4324/9780203097298

Additional reading

1. Worldwatch Institute: State of the World 2015: Confronting Hidden Threats to Sustainability, Washington, DC (Island Press). – 2015-
2. Mazmanian D.A. and Kraft M.E. eds. Toward sustainable communities: Transition and transformations in environmental policy. MIT Press. – 2009.
3. Bina O. The green economy and sustainable development: an uneasy balance? // Environment and Planning C: Government and Policy. 2013. T. 31, no 6. URL: https://doi.org/10.1068/c1310j
4. Kasztelan A. Green growth, green economy and sustainable development: terminological and relational discourse // Prague Economic Papers. 2017. – T. 26. URL: https://www.ceeol.com/search/article-detail?id=686936
5. Mikhno I., Koval V., Shvets G., Garmatiuk O., Tamošiūnienė R. Green economy in sustainable development and improvement of resource efficiency // Central European Business Review (CEBR). 2021. – T. 10. URL: https://www.ceeol.com/search/article-detail?id=941002

Internet-based sources

www.greengrowthknowledge.org – Green Growth Knowledge Partnership
www.oecd.org – Organisation for Economic Co-operation and Development
www.greeneconomycoalition.org – Green Economy Coalition
www.gggi.org – Global Green Growth Institute
www.eea.europa.eu – European environment agency
www.mnr.gov.ru – site of the Ministry of Natural Resources of the Russian Federation;
www.unep.org – site of the United Nations Environment Programme;

Learning toolkits for self- study in the RUDN LMS TUIS

The Moodle-based TUIS platform at RUDN University provides a platform with a wide range of tools for creating and conducting distance learning courses. Generally, Moodle-based courses include the following tools and resources:

• by resources we mean those materials that can be used as information to study. The teacher can post various pieces of theoretical information in various course modules. These resources can be either in the form of files, or in the form of external links. Moodle distance learning system enables using various formats of electronic documents;

• active elements are generally not included in the framework of the training course. By active elements we mean organized communication between students and teachers when using this distance course (forum, chat, exchange messaging, etc.);
• tasks are an element created for testing knowledge. Answers to tasks must be executed as files;
• a database is used to create and store various information, for example, articles, books, hyperlinks; to show various photographs, posters created by students;
• a seminar is a type of extracurricular activities. Students are able to evaluate each other's performance in the course, and they can also interact with the teacher;
• a lesson is a type of activity where educational material is issued in parts. Students can ask the teacher questions after this type of classes, and the teacher decides which parts of the lesson should be emphasized in intramural classes;

8. Mid-Term Assessment and Evaluation Toolkit*

The main stages in the formation of competencies in the study by students of the discipline "Green economy and sustainability assessment tools" are the consistent formation of learning outcomes in the discipline. The result of the certification of students at various stages of the formation of competencies shows the level of mastery of competencies by students.
Evaluation materials for students' intermediate certification in the course of «Green economy and sustainability assessment tools» are presented in Appendix 1 to this work programme.

DEPARTMENT OF ENVIRONMENTAL SAFETY AND PRODUCT QUALITY MANAGEMENT

Assessment and Evaluation Fund

ON THE COURSE

GREEN ECONOMY AND SUSTAINABILITY ASSESSMENT TOOLS

Direction 44.04.02 Psychological and pedagogical education

Programme:

Environmental Pedagogy

Qualification of the graduate –

Master in Environmental Pedagogy

Assessment and evaluation fund passport

Direction 44.04.02 «Psychological and pedagogical education»:

Course: GREEN ECONOMY AND SUSTAINABILITY ASSESSMENT TOOLS

12.1. Assessment and grading system and characteristics of the assessment scale

Controlled competence code or part	Controlled course module	Forms of control					Module points
		Classroom work			Self-study	Exam	
		Test	Control work	Class work	Seminar report		
GC-1 SPC-8	Sustainability and circular economy	X		12			4
GC-1 SPC-8	Climate-neutral resource management	X		12			4
GC-1 SPC-8	Cleaner production	X		12			6
GC-1 SPC-8	Green technologies in wastewater treatment	X		12			8
	Exam		20	48	20	12	

12.2 The maximum number of credits in the course is 3. At the same time, the following ratio is established between the number of points and the number of credits:

Points to credits ratio

Total points	Final assessment	Amount of credits
91	5+	3
91-100	5	3
86 – 91	4+	3
71-85	4	2
61-70	3	1
51 – 60	3-	1
21 – 51	(FX)	0
<21	2 (F)	0

Deciphering of grades is also accepted according to the specified document:

- A: "Excellent" - Mastery of course content at the highest level of attainment that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such outstanding promise in the aspect of the discipline under study that he/she may be strongly encouraged to continue.

- B: "Very good" - Strong performance demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.

- C: "Good" - A totally acceptable performance demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.

- D: "Satisfactory" - A marginal performance in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective growth in the discipline.

- E: "Mediocre" - the theoretical content of the course is partially mastered, some practical skills have not been formed, many of the educational tasks provided for by the training programme have not been completed, or the quality of some of them is assessed by the number of points close to the minimum.

- FX: "Conditionally unsatisfactory" - the theoretical content of the course has been partially mastered, the necessary practical skills have not been formed, most of the educational tasks provided for by the training programme have not been completed, or the quality of their implementation was assessed by the number of points close to the minimum; it is possible to improve the quality of completing educational tasks with additional independent work on the course material.

- F: "Certainly unsatisfactory" - the student's performance in the required exercises has revealed almost no understanding of the course content.

12.3 List of competencies and their formation stages

Nr.	Competence code and title	Previous courses	Subsequent courses
General competencies			-
1	GC -2.1 The ability to critically analyze and evaluate modern scientific achievements, generate new ideas in solving research and practical problems, including in interdisciplinary areas.	-	-
Specialized Professional competencies (type of professional activity - research, control and expert, organizational and management)			
3	SPC-2.1. The ability to develop options for management decisions and justify their choice based on sustainable development criteria.	-	Research work

12.4. Typical control tasks or other materials necessary to assess knowledge, skills and (or) experience of activities, characterizing the formation stages of competencies in the process of mastering the educational course

Questions to prepare for certification

1. What is the difference between the concept of a Green Economy and Sustainable Development?
2. What are the implications of a Green Economy for poverty reduction?
3. What does the Green Economy imply for biodiversity conservation?
4. What implication does a Green Economy have on the notion of economic growth?
5. What work must be done during the transition to a green economy?
6. What goals have been identified for sustainable economic recovery after the pandemic?
7. What support has been shown for the *We Are Still In Declaration*, in agreement with the Paris Climate Agreement and its green economic goals?
8. Climate Change and Carbon Management
9. Biodiversity and Ecosystem Services
10. Green Technology and Renewable Energy
11. Environmental Law and Social Justice
12. Linkage between energy use, pollution and economic growth
13. Economic Indicators for Material Recovery Estimation
14. Assessment of mechanisms and instruments of climate finance
15. Challenges and opportunities at the crossroads of Environmental Sustainability and Economy research
16. Practices on Cleaner Production and Sustainability
17. Drivers and Barriers to Cleaner Production
18. Integrated process technology for recycling and re-use of industrial and municipal wastewater
19. Physicochemical–biotechnological approaches for removal of contaminants from wastewater

12.5. Didactic materials defining the procedures for assessing and evaluating knowledge, skills, and activity skills, characterizing the formation stages of competencies.

As part of practical classes, problematic seminars, conversations, discussions, workshops and other forms of interactive classes are delivered. The current control of the development of the discipline is carried out in the form of oral surveys, problematic classes, assessment of the activity of students during discussions, consultations, workshops, and the execution of a clause. Criteria for achieving learning outcomes for current control: confident solution of tasks by students, with the appearance of logical and predictable questions and difficulties; application of acquired knowledge in new, non-standard situations. Intermediate certification based on the results of mastering the discipline - a test with an assessment based on the results of presenting a report and / or publication in a student collection. The criteria for achieving learning outcomes in the discipline for intermediate control is the confident presentation of the results of independent research in the form of a report and / or publication in a student collection.

The programme is compiled in accordance with the requirements of the ES HE RUDN / FGOS HE.

Developer:

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