

**MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION
OF THE REPUBLIC OF UZBEKISTAN
TASHKENT STATE UNIVERSITY OF ORIENTAL STUDIES**

“APPROVED BY”

G.Sh.Rikhsieva

“ ____ ” _____, 2024

Registered: № BD-60410800 – 1.18

“ ____ ”

_____, 2024

**SYLLABUS
FOR THE COURSE
“ENVIRONMENTAL ECONOMICS AND CLIMATE CHANGE”**

Field of knowledge: 400 000 – Business management and law

Field of education: 410 000 – Business and management

Major: 60410100 – Economics

Tashkent – 2024

Director of the Institute “Foreign Policy
and International Economic Relations”

Salaev D.S.

Head of the Department of “Economics
and Management”

Sattikulova G.A.

Head of the Information Resource
Center

Yuldasheva M.

Course/Module Code IQMT1505		Academic Year 2025-2026	1 Semester 5	ECTS 5	
Course/Module Type Mandatory		Education Language Uzbek/russian		Weekly Lesson Hours 5	
1.	Course Name		Classroom Sessions (hours)	Self-study (hours)	Total Workload (hours)
	Environmental economics and climate change		60	90	150
2.	<p style="text-align: center;">Course Objective</p> <p>Objective of the Course: The aim of teaching this course is to provide students with knowledge, skills, and competencies in line with their field of study regarding the scientific and theoretical foundations of environmental economics for sustainable ecological and economic development, as well as the rational use of natural resources to improve human living conditions.</p> <p>Course Tasks:</p> <ul style="list-style-type: none"> Studying the problems of environmental protection and sustainable use of natural resources, along with the key approaches and methods for solving these issues. Familiarizing students with positive examples of successful solutions to local environmental challenges. Developing students’ independent problem-solving skills in tackling real-world environmental issues. <p style="text-align: center;">Compliance with International Experience</p> <p>This course has been developed in accordance with the March 29, 2024 Decree No. 87 of the Ministry of Higher Education and Innovations of the Republic of Uzbekistan, titled “On Improving the Development Process of Higher Education Normative-Methodological Documents”.</p> <p>Additionally, it has been enhanced by incorporating international best</p>				

practices from the University of Edinburgh (ranked 22nd in the QS World University Rankings), which is listed among the top 300 universities in globally recognized rankings.

<http://www.drps.ed.ac.uk/24-25/dpt/cxecnm10114.htm>

I. Main Theoretical Part (Lecture Sessions)

I.I. The course includes the following topics:

Theme 1. Introduction to environmental economics and climate change

Course Topics and Objectives, Its Methodology, Position Within the Social Sciences System, and Scientific-Practical Significance in Studying Modern Environmental Management Issues.

Theme 2. Future Environmental Problems

The challenges of environmental protection, environment, autecology, population ecology, synecology, ecological systems, macroecology, general ecology, biological ecology, geocology, paleoecology, evolutionary ecology, applied ecology, human ecology, social ecology, marine and freshwater ecology, plant ecology, animal ecology, space ecology, and specialized ecology.

Theme 3. Appreciation of the Environment

Biosphere, autotrophs, heterotrophs, mixotrophs, ecological environment, abiotic factors, biotic factors, anthropogenic factors, air mass movement, Earth's surface temperature, and atmospheric pressure.

Theme 4. Resource Allocation: Time Duration and Extraction Cost

Useful components, mineral raw material base, rare and radioactive metals, colored stone raw materials, raw materials, primary raw materials, industrial raw materials, agricultural raw materials, ore-based mineral raw materials, non-ore mineral raw materials, and synthetic materials.

Theme 5. Biological Resources and Protected Areas

Biodiversity, flora, fauna, biota, plants, flora of Uzbekistan, protected areas, forests, birds, reptiles, amphibians, mollusks, and their species.

Theme 6. Human Ecology

Nature and humans, demographic explosion, ecological threats, environmental protection issues, environment and human health, social dangers in the field of ecology, and ecological violations.

Theme 7. Economics of Pollution Control: A General Perspective

Air temperature, atmosphere, troposphere, stratosphere, ionosphere, mesosphere, exosphere, greenhouse effect, anthropogenic pollutants, acid rain, and photochemical smog.

Theme 8. Water: Renewable and Reserve Resources

Hydrosphere, water sources, river waters, water cycle, water flows, water resources, water's value for humans, surface and groundwater, transboundary water resources, and groundwater.

Theme 9. Land: Location and Multi-Purpose Use

Earth's lithosphere, fertile lands, soil salinization, agricultural lands, reclamation state of land resources, soil degradation, irrigated lands, State Land Cadastre, and Land Code.

Theme 10. Ecosystem Goods and Services: Threats to Nature

Organism, environment, ecosystem, biogeocenosis, producer, consumer, reducer, autotroph, heterotroph, biological productivity, agroecosystem, and material exchange.

Theme 11. Energy: Transition to Renewable Sources

Energy, fuel-energy resources, oil, gas, coal, atmospheric pollution, renewable energy sources, green economy, solar, wind, water resources, geothermal sources, and biogas.

Theme 12. Food Security and Agricultural Development

Food and agriculture, food security, food products, Food and Agriculture Organization, food industry, and their types.

Theme 13. Climate Change

Global climate change, causes and consequences of climate change, economic analysis of climate change, system of measures to prevent global climate change, and national climate strategies.

Theme 14. Environmental Protection and the Rational Use of Resources

Environmental protection, rational use of natural resources, environmental conservation, environmental objects, the Committee on Ecology and Environmental Protection, state governance in the field of ecology and environmental protection, environmental strategy, "polluter pays" principle, "nature user pays" principle, state environmental control, and environmental monitoring.

Theme 15. International Experience and Cooperation for Sustainable Development

Concept of sustainable development, challenges of transitioning to sustainable development, ideology of sustainable development, national sustainable development strategy, United Nations Conference in Rio de Janeiro, "Living Planet Index" and "Ecological Footprint" indicator.

III. Guidelines and recommendations for practical sessions

The following topics are recommended for practical exercises in the subject “**Environmental Economics and Climate Change**”:

1. Introduction to Environmental Economics and Climate Change
2. Future Environmental Issues
3. Appreciation of the Environment
4. Resource Allocation: Time Horizon and Extraction Costs
5. Biological Resources and Protected Areas
6. Human Ecology
7. Economics of Pollution Control: A General Perspective
8. Water: Renewable and Reserve Resources
9. Land: Location and Multi-Purpose Use
10. Ecosystem Goods and Services: Threats to Nature
11. Energy: Transition to Renewable Sources
12. Food Security and Agricultural Development
13. Climate Change
14. Environmental Protection and Rational Use of Resources
15. International Experience and Cooperation for Sustainable Development

IV. SELF-STUDY

Recommended topics for self-study:

1. The Essence of Ecological Economics
2. Laws and Principles of Environmental Management
3. V.I. Vernadsky’s Theory of the Biosphere
4. The Dialectics of Human-Nature Interaction
5. The Intensification of Anthropogenic Impact on Nature and Its Consequences
6. Concepts of “Natural Conditions” and “Natural Resources”:
Classification of Natural Resources
7. Impact of Natural Resources on Production Efficiency, Regional Organization, and Specialization
8. The Ecological Aspects of Scientific and Technological Progress
9. Future Environmental Issues
10. Valuing the Environment
11. Resource Allocation: Time Horizon and Extraction Costs
12. Concept of Ecological Entrepreneurship
13. Spheres of Activity in Ecological Entrepreneurship
14. The Need for and Importance of Economic Valuation of Natural Resources
15. Methods of Evaluating Natural Resources
16. Biological Resources and Protected Areas
17. Human Ecology
18. Economics of Pollution Control: General Overview
19. Water: Renewable and Reserve Resources
20. Land: Location and Multi-Purpose Use

	<ol style="list-style-type: none"> 21. Ecosystem Goods and Services: Threats to Nature 22. Energy: Transition to Renewable Sources 23. Food Security and Agricultural Development 24. Climate Change 25. Environmental Protection and Rational Use of Resources 26. Modern Concepts of Sustainable Development 27. Economic Incentives for Pollution Fees 28. Environmental Taxation as an Economic Incentive for Conservation 29. The System of Environmental Funds 30. Environmental Insurance 31. Environmental Leasing 32. Specific Features of the Environmental Impact of Road Transport 33. Planning and Financing Environmental Activities 34. Specific Features of the Environmental Impact of Water Transport 35. Specific Features of the Environmental Impact of Air Transport 36. Principles and Forms of International Cooperation in Environmental Protection 37. International and National Programs for Solving Environmental Issues 38. Green Economy <p>Self-study topics should be explored through essays, presentations, and formal submissions in accordance with the established academic requirements.</p>
3.	<p>V. Learning Outcomes / Professional Competencies</p> <p>Upon completing the course, students should:</p> <p>Possess Knowledge of:</p> <ul style="list-style-type: none"> • Fundamental concepts and terminology in environmental economics, its interconnections with other disciplines, and the theoretical foundations of environmental economics. • The scientific and theoretical basis of environmental economics and climate change, methods for economic assessment and forecasting of natural resources, as well as the ability to analyze government programs and plans. • The natural resource potential of Uzbekistan and rational utilization strategies for economic development. <p>Develop Skills in:</p> <ul style="list-style-type: none"> • Understanding and applying different types of payments for the use of natural resources and their practical implementation. • Applying ecological knowledge in various economic sectors. • Promoting low-waste and waste-free production technologies. • Utilizing economic mechanisms and incentives for environmental protection. • Implementing scientific innovations in sustainable resource management.

4.	VI. Educational Technologies and Methods: <ul style="list-style-type: none"> • Lectures • Interactive Case Studies • Seminars (Logical Thinking, Rapid Q&A Sessions) • Group Work • Presentations • Individual Projects • Team-Based Projects for Defense and Presentation.
5.	VII. Requirements for Earning Credits: To successfully earn credits, students must: <ul style="list-style-type: none"> • Fully grasp the theoretical and methodological concepts of the subject. • Accurately reflect analysis results. • Independently analyze and critically assess studied processes. • Complete assigned tasks and exercises in ongoing and interim assessments. • Submit a written final assessment.
6.	<p style="text-align: center;">Main Literature</p> <ol style="list-style-type: none"> 1. I.Xotamov, M.Sultanov, A.Yadgarov. Atrof - muhit va tabiiy resurslar iqtisodiyoti. «Innovatsion rivojlanish nashriyotmatbaa uyi», 2021. 312 bet. 2. Экономика природопользования: учебное пособие / Петрова Е.Е., Курочкина А.А., Волотовская О.С. – Санкт Петербург: РГГМУ, 2021. – 236 с. 3. Экономика устойчивого развития : учебник / С.Н. Бобылев. — Москва: КНОРУС, 2021. — 672 с. 4. Глобальные проблемы современного общества: учебно-методическое пособие / Авт.-сост. С.В. Смирнов. – Казань: Издательство Казанского университета, 2022. – 74 с. 5. Harris, J. M., & Roach, B. (2018). Environmental and natural resource economics: A contemporary approach. Fourth edition. Routledge <p style="text-align: center;">Additional Literature</p> <ol style="list-style-type: none"> 1. O‘zbekiston Respublikasi Prezidentining Farmoni “O‘zbekiston — 2030” strategiyasini “Atrof-muhitni asrash va “yashil iqtisodiyot” yilida amalga oshirishga oid davlat dasturi to‘g‘risida, 30.01.2025 yildagi PF-16-son 2. Sh.M. Mirziyoyev. Hozirgi zamon va Yangi O‘zbekiston. - Toshkent: O‘zbekiston, 2024. 3. Mirziyoyev Sh.M. Yangi O‘zbekistonda taraqqiyot strategiyasi asosida demokratik islohotlar yo‘lini qat’iy davom ettiramiz. 6-jild. - Toshkent: O‘zbekiston, 2023 4. Sh.M. Mirziyoyev. Yangi O‘zbekistonda erkin va faravon yashaylik. 5-jild. - Toshkent: O‘zbekiston, 2023. 5. Mirziyoyev Sh.M. Inson qadri, uning huquq va erkinliklari, qonuniy manfaatlari uchun. –Toshkent: O‘zbekiston, 2022.

	<p>6. Министерство экологии, охраны окружающей среды и изменения климата Республики Узбекистан. (2023). Национальный доклад о состоянии окружающей среды: Узбекистан. Международный институт устойчивого развития.</p> <p>7. «Зеленая экономика» Учебник. – Т.: Издательство «Инновационное развитие», 2023, 208 с.</p> <p>8. Основы устойчивого развития и природопользования [Текст]: учебник для высших учебных заведений всех направлений / А. Эргашев [и др.]. - Ташкент: Baktria press, 2016. — 296 с.</p> <p>9. Atrof-muhit iqtisodiyoti / L.Ryden, F.B.Ahrorov, I.M.G'aniev, A.I.Abruev; O'zbekiston Respublikasi oliy va o'rta maxsus ta'lim vazirligi, «Samarqand qishloq xo'jalik instituti», Toshkent: 2016. 173 bet.</p> <p>10. Goudie, A.S. 2013 The Human Impact on the Natural Environment (7th edn) (Wiley).</p> <p style="text-align: center;">Articles from SCOPUS</p> <p>1. Attributing climate-change-related disaster displacement responsibilities along global production chains. Guadalupe Arce, Ángela García-Alaminos, Mateo Ortiz, Jorge Zafrilla, iScience, Vol. 27, Issue 11, 15 November 2024, https://doi.org/10.1016/j.isci.2024.111124</p> <p>2. A simultaneous impact of digital economy, environment technology, business activity on environment and economic growth in G7: Moderating role of institutions, Rizwana Yasmeen, Tian Tian, Hong Yan, Wasi Ul Hassan Shah, Heliyon, Vol. 10, Issue 12, 30 June 2024, https://doi.org/10.1016/j.heliyon.2024.e32932</p> <p style="text-align: center;">Information Sources</p> <p>1. www.gov.uz – O‘zbekiston Respublikasi hukumat portali</p> <p>2. www.lex.uz – O‘zbekiston Respublikasi Qonun hujjatlari ma’lumotlari milliy bazasi</p> <p>3. https://unctadstat.unctad.org – Savdo va rivojlanish bo‘yicha BMT konferensiyasi sayti</p> <p>5. http://uzgeo.uz – O‘zbekiston geograflari jamiyati sayti</p> <p>6. https://sustainabledevelopment.un.org</p> <p>7. http://worldbank.org</p> <p>8. https://yearbook.enerdata.net</p> <p>9. http://worldgreeneconomy.org</p>
7.	<p>The syllabus of the course was developed by the "Economics and Management" department and approved by protocol No. ____ dated __, 20__.</p> <p>The syllabus was approved by the Council of Tashkent State University of Oriental Studies by protocol No. ____ dated __, 20__.</p>
8.	<p>People Responsible for the Course/Module:</p> <p>Azizova F.V. – TSUOS, Senior Lecturer of the “Economics and Management” Department</p>

	Salikhova A.M. - TSUOS, Senior Lecturer of the “Economics and Management” Department
9.	Reviewers: Ermamatov Sh.J. – TSUOS, Associate Professor of the “Economics and Management” Department, Candidate of Economic Sciences Zokirov S.S. – NUU, Doctor of Economic Sciences, Professor of the “State and Corporate Strategies” Department (related higher education institution).