

## GROUP A7

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# Problems of adaptation and sustainable development of agriculture in the context of global climate change

01.

## Learning Outcomes

1. Ability to conduct comprehensive research in the field of agro-industrial production.
2. Ability to have information on the current state and trends in world and domestic technologies for growing crops in climate change.
3. Ability to critically analyze and evaluate modern scientific advances in solving research and practical problems.
4. Ability to present research results in scientific and non-scientific contexts, orally and in writing, in the form of scientific meetings and seminars.
5. Use modern information and communication technologies in communication, information exchange, collection, analysis, processing, interpretation of sources.
6. To develop a system of experimental research for practical confirmation of theoretical assumptions and to implement it in the agro-technological process.
7. Ability to develop new sectoral approaches to agricultural adaptation to climate change.
8. Be responsible for the novelty of research and expert decision-making in the context of sustainable development in agriculture.

# 02.

## Content Scope

### Course content:

1. Sustainable development of the agricultural sector in the context of socio - economic problems of the XXI century
2. Sustainable development and international agricultural policy
3. Rational use of natural resources in the context of global climate change
4. Strategic guidelines for sustainable development in agriculture
5. Priority areas of state policy in Ukraine in the field of adaptation to climate change
6. Strategic planning in agriculture in the context of sustainable development
7. Adaptation of agricultural production to climate change and mitigation of its impact
8. System of measures for balanced land use in the conditions of climate change

# 03.

## Teaching and Learning method

### Lectures

1. reproductive method;
2. explanatory-illustrative method (lecture-presentation, lecture-discussion, polvlogue);

### Seminars

1. research method (classes-workshop, panel discussion, round table, conference) using strategies of critical thinking;  
brain storm;  
interactive group work;  
case study

# 04.

## Learning Assessment

### *Forms of current and final control:*

Current control includes thematic assessment and modular control.

Thematic assessment of classroom and independent work of graduate students is carried out on the basis of their current assessments for oral and written answers on the subject, practical and control work.

Modular control is performed in the form of computer testing.

The final control of students' learning activities is carried out in the form of an exam based on test results. The results of the exam are published in the journal of the academic group and in the distance learning system Moodle.

# Legal, organizational, managerial and economic methods protection environment

01.

## Learning Outcomes

1. Be able to apply the norms of environmental national and international law in professional work.
2. Be able to formulate a personal opinion and present a point of view.
3. Know the basic principles and principles of state environmental policy.
4. Be able to properly process the information obtained, as well as know the necessary methods for environmental protection.
5. Use the management principles on which the environmental safety system is based.
6. Know the types of losses and methods of their assessment, be able to apply them.
7. Be able to explain the social, economic and political

## Course content:

# 02.

## Content Scope

1. National and international legislation on environmental management and environmental protection.
2. Environmental impact assessment and problems of its organization.
3. Environmental safety and environmental development policy. Environmental safety management.
4. Environmental audit.
5. Ecological certification of objects.
6. Environmental monitoring. Environmental information system.
7. Planning of rational nature management and environmental protection.
8. Economic mechanism of nature management and efficiency of environmental protection measures implementation.
9. Scientific and technological progress and its impact on the environment.

# 03.

## Teaching and Learning method

### Lectures

problem lectures, visualization lectures, binary lectures (lecture-discussions)

#### **Practical training:**

With the use of active teaching methods: non-simulation (discussions, excursions, field trips), simulation non-game (analysis of specific situations, solving production problems, analysis of documentation, actions according to instructions), game design.

#### **Forms of current and final control:**

**Current control** is carried out by teachers in all types of classes in order checking the level of preparation of students on a particular topic.

**The final control** of students' educational activity is carried out in the form of an exam.

#### **Means of assessing learning outcomes**

- computer testing;
- oral examination;
- presentation of the results of completed tasks and research;
- evaluation of the results of a practical individual task;

# 04.

## Learning Assessment

# Economic sector transformation: change, challenges and governance

01.

## Learning Outcomes

1. To be able to use information about systems of economic management of nature management and ecological management in the conditions of a modern ecological situation.
2. Be able to analyze the state of the atmosphere and its impact on the environmental situation, the spread of air pollution through their transfer by air currents, global air pollution, the impact of global warming on climate change in relation to the current state and trends in the world economy
3. Ability to assess current scientific advances in solving research and practical problems in the economic sector.
4. Assess the degree of risk of environmental situations in the economic sector.
5. Use modern information and communication technologies in communication, information exchange, collection, analysis, processing, interpretation of sources.
6. To offer methods of experimental researches for forecasting of influence of climatic changes on economic branch. To apply methods of hydrometeorological forecasts for calculation of economic losses.
7. Be able to assess the ecological - economic sustainability of the industrial enterprise.
8. Use knowledge of key elements of the environmental management system at the enterprise or public institution in accordance with the standards, taking into account in particular the definition of environmental policy, environmental analysis, the proposal of a plan of economic real action;



## Course content:

02.

### Content Scope

1. Economic management and environmental audit in terms of adaptation to climate change.
2. The basis of sustainable development: economy-society-ecology.
3. Rational use of natural resources in terms of adaptation to climate change.
4. The economy of shared consumption.
5. The general trend of technological change and their impact on the structure of the economy.
6. Financial implementation of the mechanism of environmental management in the economic sector.
7. Adaptation of industrial production to climate change and assessment of economic damage to the environment
8. Management in the economic sector taking into account: procurement operations, suppliers, contractors, choice of new technologies, transport, natural resources (energy, water), storage areas for raw materials and products, emissions (air, water), noise and vibration control .  
Getting a quality product! Stimulating the demand for innovative products.
9. System of measures for balanced economic development in the conditions of climate change.  
International and national standards for economic development in the context of climate change.
- 10 .Environmental insurance system. Ecological and economic stimulation of demand for innovative products in the conditions of adaptation to climate change.

# 03.

## Teaching and Learning method

### Lectures

1. Lectures-presentations
2. Lectures-discussions
3. Video review of the process of implementation of the management system and environmental technologies at the enterprise.

of the lecture.

### Seminars

1. research method (workshop, panel discussion, round table, conference)
2. interactive group work;
3. case study

# 04.

## Learning Assessment

Ongoing control includes thematic evaluation and ongoing control.

- Thematic assessment of classroom and independent work of students is carried out on the basis of their current assessments for oral and written answers in the discipline, independent, individual practical work.
- After studying the lecture material, students are tested and receive points.
- The final control of students' learning activities is carried out in the form of an exam based on test results.
- During the final control, standardized computer tests are the means of assessing learning outcomes in the discipline.