

56S1-ROLNZANSR

**ENVIRONMENTAL CONTAMINATION FROM
AGRICULTURAL ACTIVITY**

ECTS: 3.5

HOURS PER SEMESTER/WEEK: LECTURES: 15/1; CLASSES: 30/2

FIELD OF THE STUDY: Environmental protection

Level of study: First-cycle (Engineer's degree) program

Course status: obligatory

Year of the study: II

COURSE CONTENTS

LECTURES: Sources and classification of agricultural pollution. Aspects of environmental protection in legal regulations concerning fertilizer management and plant protection. Ecological effects of production, use and storage of fertilizers and plant protection products. Contamination of ground, surface and underground waters with components from agricultural sources. Nutrient management in drinking water abstraction areas. Ways of limiting the dispersion of pollutants from a farm. The policy of the European Union in the field of environmental protection against pollution from agriculture. Possibilities of counteracting contamination of agricultural products. Air pollution from agricultural sources. Changes in the environment due to the use of plant protection products. Ways of plant protection products transfer to the environment. Principles of good agricultural practice and methods of preventing the negative effects of agricultural pollution on the environment.

CLASSES: Ingredients and chemical compounds from agricultural sources that pollute the soil, water, plants, and atmospheric air. Share of agricultural pollution in environmental contamination. Principles of balancing nutrients in a farm (preparation of a project). Humus content as an indicator of soil environment degradation. Acidification and disturbance of ionic balance in the soil caused by fertilization and its ecological and production effects. Evaluation of concentrations of selected chemical components in-ground, surface, and well waters in rural areas. Determination of the degree of leaching of nutrients from the soil. Criteria for assessing the quality of agricultural produce.

EDUCATIONAL PURPOSE: Understanding the cause and effect relationships between agricultural activity and changes in the natural environment; obtaining knowledge in the field of appropriate protection of the environment (in accordance with the principles of sustainable development) against the effects of agricultural pollution.

LEARNING OUTCOMES

Knowledge. The student describes and interprets the types, causes, and effects of pollutant emissions from agricultural sources. Knows the consequences of non-compliance with the law and Good Agricultural Practice. Knows the legal provisions concerning the problems of environmental protection against pollution of agricultural origin.

Skills. Can identify the types and sources of agricultural pollution, and determine the routes of migration of substances and chemical compounds in the environment. Has the ability to monitor and take action to prevent the release of pollutants into the environment. Can predict the effects of the presence of harmful substances in the environment. Verifies hypotheses and draws conclusions.

Social competences. Is aware of the importance of environmental protection issues in the field of agricultural production. Is responsible for making decisions regarding the implementation and compliance with the law, and he can inspire others to work and work in a team.

TEACHING FORMS AND METHODS

Lectures. Informative lecture, multimedia presentation.

Classes. Laboratory exercises.

FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES

Lectures. Part of the lecture material is passed during colloquiums, which take place during classes.

Classes. Three written tests include theoretical, practical, and lecture material.

BASIC LITERATURE

1) Duer I., Fotyma M., Madej A., Kodeks Dobrej Praktyki Rolniczej, Wyd. MRiRW, MŚ, R. 2004 2) Rynkiewicz A., Polskie regulacje prawne w zakresie ochrony środowiska przed zanieczyszczeniem pochodzenia rolniczego w świetle integracji z UE, Tom 6/12, Wyd. IMUZ, R. 2005 3) Ilnicki P., Polskie rolnictwo a ochrona środowiska, Wyd. AR w Poznaniu, R. 2004 4) Sapek A., Sapek B., Pietrzak S., Strategia ograniczania zanieczyszczeń wody, atmosfery i gleby w świetle międzynarodowych projektów rolno-środowiskowych realizowanych w IMUZ, Wyd. Woda-Środowisko-Obszary Wiejskie, R. 2004 5) Sapek A., Sapek B., Zmiany jakości wody i gleby w zagrodzie i jej otoczeniu w zależności od sposobu składowania nawozów naturalnych, Wyd. Zesz. Nauk. IMUZ, R. 2007.

ADDITIONAL LITERATURE

1) Filipek T. (red., praca zbiorowa), Chemia rolna, Wyd. AR w Lublinie, R. 2006.

THE TEACHER/S CONDUCTING THE CLASSES:

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