

**01S1-NASIE**

**SEED SCIENCE AND TECHNOLOGY**

**ECTS: 3.5**

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

#### **COURSE CONTENTS**

**LECTURES:** Subject matter of seed science and technology and seed production. Relationships with plant breeding and agricultural practice. Variety evaluation and registration. The Polish National Lists of Varieties. The Common Catalogues of Varieties. Variety protection. Plant variety property rights in Europe. Post-registration variety testing system and variety recommendation. Categories of certified seed. Degeneration of crop varieties and seed lot. Introduction to seed production principles for the basic agronomic crops. History, organization, and current state of plant breeding and seed production in Poland. The global seed industry.

**CLASSES:** Some aspects of seed biology. Stages of seed certification. Organoleptic methods for preliminary seed evaluation. Seed sampling. International rules for seed testing. Seed quality testing: moisture content, physical purity, seeds weight, seed germination, viability and vigour. Quality standards for seed. The seed potato testing. Documentation in seed certification process. Seed processing and enhancement.

**EDUCATIONAL PURPOSE:** To provide knowledge on the importance of the variety selection and certified seed usage in plant production. Acquainting with the basics of evaluation of varieties and certification of seeds. Presentation of the specifics of seed production of agricultur

#### **LEARNING OUTCOMES**

**Knowledge.** The student knows the general principles of the organization and operation of the breeding and seed sector. He has a general knowledge of the specifics of the seed production technology of main agricultural crops and seed processing, enhancement and certification. Has a general knowledge of variety evaluation and registration as well as plant variety protection.

**Skills.** The student has the ability to carry out a standard seed quality test and its certification on the basis of applicable regulations. He has the ability to use the results of the evaluation of varieties and seed quality in agricultural practice.

**Social competences.** Student understands the necessity of following varietal progress and its application into agricultural practice. Student is aware of the importance of the selection of varieties and the quality of seeds in crop production.

#### **TEACHING FORMS AND METHODS**

**Lectures.** Information lecture with multimedia presentation.

**Classes.** Laboratory exercises.

#### **FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES**

**Lectures.** Written exam with open questions.

**Classes.** Written test - written verification of the ability to conduct a standard seed quality testing and the practical use of the results..

#### **BASIC LITERATURE**

1) Copeland L.O., McDonald M.B. 2001. Principles of Seed Science and Technology 4th edn. Norwell, Massachusetts: Kluwer Academic Publishers, 2) Kwiatkowski J., Szczukowski S., Tworkowski J., 2017. Wybrane zagadnienia z nasiennictwa, wyd. UWM Olsztyn.

#### **ADDITIONAL LITERATURE**

1) COUNCIL DIRECTIVES on the marketing of agricultural crops seed - Journal of the European Union or EUR-Lex

#### **THE TEACHER/S CONDUCTING THE CLASSES:**

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