

SYLLABUS

Name of the course (as specified in the approved curriculum) Seed biology		Number of ECTS Credits 7
Name of the course in Polish Biologia nasion		
Unit providing the course (Department/Institute) Department of Phytopathology, Seed Science and Technology		
Course leader Dr hab. Hanna Dorna		
Field of study Horticulture: Seed Science and Technology	Level II	Semester 2
TYPE OF CLASSES (course load)		
- Lectures		25
- Laboratory classes		20
- Performing of projects		20
- Classes and project consultations		35
- Self-study		75
Total number of hours		175
OBJECTIVE OF THE COURSE		
To acquaint a student with biological bases of technologies applied in modern seed science and seed production. To develop skills to use gained knowledge in order to solve problems related to production of high quality seeds.		
TEACHING METHODS		
Lectures, laboratory classes, realization of a project, oral presentation of the project, written report		
Course learning outcomes		The reference to field of study outcomes
Knowledge	O1. Student knows and understands biological bases of technologies used in modern seed science and technology.	H2_K01 H2_K02 H2_K03 H2_K06
Skills	O2. Student properly identifies problems related to production of high quality seeds and is able to take actions using relevant techniques and technologies. O3. Student is able to define properly priorities leading to accomplishment of a task. Student is able to cooperate and work in a team.	H2_S01 H2_S02 H2_S07 H2_S011 H2_S012
Social skills	O4. Student recognizes a necessity of thinking in economic and social categories to make a decision. O5. Student is aware of importance of social, professional and ethical responsibilities for the quality of produced seeds. O6. Student realizes a necessity of increasing specialized knowledge and skills and understands a need for developing his/her qualifications in relation to his/her field.	H2_C04 H2_C06 H2_C07
Methods of evaluation of outcomes achievement		Symbols of course learning outcomes
- test, exam - evaluation of the plan, realization, presentation and execution of the projects and experiment - evaluation of discussion and the reports		O1 O2, O3 O4, O5, O6
TEACHING CONTENT		
Lectures: Seed formation and development. Chemical seed composition. Seed germination. Seed dormancy. Seed vigour. Seed longevity. Biological bases of modern seed enhancement technologies. Practicals: Seed germination. Projects: Evaluation of the effect of initial seed quality and conditions of seed storage on seed longevity and quality (Seedlife software) . Evaluation of the efficacy of seed priming in optimal and suboptimal conditions (laboratory work).		
The course completion criteria and methods exam practicals		Percent of a final grade 70 30

RECOMMENDED LITERATURE

Basra A.S., 1995. Seed Quality. Basic Mechanisms and Agricultural Implications. Food Products Press. An Imprint of the Haworth Press, Inc. New York, London, Norwood.

Basra A.S. (ed.), 2007. Handbook of Seed Science and Technology. Food Products Press, New York, London, Norwood.

Bewley J.D., Black M., 1994. Seeds. Physiology of Development and Germination. Plenum Press, New York.

Black M., Bewley J.D. (ed.), 2000. Seed Technology and its Biological Basis. Sheffield Academic Press, CRC Press, Boca Roton.

Black M., Bewley J.D., Halmer P., 2006. The Encyclopedia of seeds: Science, technology and uses. CABI Publishing, Wallingford, Cambridge

Kigel J., Galili G. (ed.), 1995. Seed development and germination. Marcel Decker Inc., New York, Basel, Hong- Kong.

McDonald M.B., Kwong F.Y., 2005. Flower Seeds. Biology and technology. CABI Publishing, Wallingford, Cambridge