A COURSE SYLLABUS – DOCTORAL SCHOOL

REGARDING THE QUALIFICATION CYCLE FROM 2020 TO 2024 AND FROM 2021 TO 2025

GENERAL INFORMATION ABOUT COURSE	
Course title	Technology of the production of nursery material
Name of the unit running the course	**Doctoral school in University of Rzeszów**
Type of course *(obligatory, optional)*	obligatory
Year and semester of studies	2022/2023; semester III i V
Discipline	agriculture and horticulture
Language of Course	olish language
Name of Course coordinator	dr hab. inż. Natalia Matłok, prof.. UR.
Name of Course lecturer	dr hab. inż. Natalia Matłok, prof.. UR.
Prerequisites	Basic knowledge of plant physiology

BRIEF DESCRIPTION OF COURSE
(100-200 words)

The aim of the education for the subject "Technology of the production of nursery material" is to familiarize the student with the methods of reproduction of fruit plants, mainly one-year-old fruit trees. The course will present the latest knowledge about the rootstock, its types, methods of reproduction, as well as the selection for individual species of fruit trees. The impact of the rootstock on the characteristics of the variety as well as the growth and yielding of fruit trees will also be determined. In addition, as part of the course, the student will gain knowledge and practical skills regarding the methods of budding and grafting as techniques for the production of one-year and two-year-old fruit trees.

COURSE LEARNING OUTCOMES AND METHODS OF EVALUATING LEARNING OUTCOMES

Learning outcome	The description of the learning outcome defined for the course	Relation to the degree programme outcomes (symbol)	Learning Format (Lectures, classes,...)	Method of assessment of learning outcomes (e.g. test, oral exam, written exam, project,...)
Knowledge (no.)	**(Knows and understands)**			
1	Theoretical basis and general issues and selected specific issues concerning the technology of production of nursery material	P8S_WG/1	lectures	test
2	Current trends in the development of horticulture in the field of nursery production	P8S_WG/2	lectures	test
3	The methodology of scientific research in the field of the production of nursery material	P8S_WG/3	classes	test
Skills (no.)	**(Able to)**			
1	Define the purpose and subject of scientific research in the field of nursery, formulate a research hypothesis, develop methods, techniques, research tools and make conclusions on the basis of scientific research	P8S_UW/1	classes	test, oral statement
2	Make a critical analysis and evaluation of the results of scientific research in the field of	P8S_UW/2	classes	test, oral statement

	nursery			
3	Communicate on specialist topics related to the production of rootstocks and annual fruit trees to a degree enabling active participation in the international scientific community	P8S_UK/1	classes	oral statement
4	Disseminate the results of scientific activity, also in popular forms	P8S_UK/2 P8S_KO/2	classes	test, oral statement
5	Initiate a debate on issues related to the production of nursery material	P8S_UK/3	classes	oral statement
6	Participate in the scientific discourse on topics related to the production of nursery material	P8S_UK/4 P8S_UK/5	classes	oral statement
Social competence (no.)	**(Ready to)**			
	Critical evaluation of scientific achievements within the discipline of agriculture and horticulture in the production of nursery material	P8S_KK/1	classes	oral statement
	Recognize the importance of specialized knowledge of horticulture to solve cognitive and practical problems in the production of nursery material	P8S_KK/3	classes	test, oral statement

LEARNING FORMAT – NUMBER OF HOURS

Semester (no.)	Lectures	Seminars	Lab classes	Internships	others	ECTS
III i V	5	10	—	—	—	0

METHODS OF INSTRUCTION

Lecture with multimedia presentation.
Practical activities.

COURSE CONTENT

Lectures**:**

1. Terminology used in nursery. Methods of reproduction of fruit plants. The state and directions of development of fruit nursery in Poland.
2. Natural and economic factors conditioning the nursery production
3. Types of rootstocks, methods of reproduction and their selection and impact on the characteristics of the variety as well as the growth and yielding of fruit trees.
4. Production of an annual fruit tree.
7. Quality requirements of nursery material and its qualification. Storage of nursery material.

Classes**:**

1. Propagation of the generative rootstock.
2. Propagation of vegetative rootstock.
3. Processing: purpose, dates, rules and methods of grafting and budding.
4. Vaccination and budding practically.

COURSE ASSESSMENT CRITERIA

Lectures – written test with open and closed questions. A condition of passing is to give a minimum of 50% correct answers.

Classes **–** Passed with a grade being the average of the grades obtained during the course. The following will be assessed:
- short tasks performed during the exercises regarding the application skills of the discussed methods of vaccination and budding.
- written test. The pass mark is to give at least 50% correct answers.

Punctation: 51-60% (3,0); 61-70% (3,5); 71-80% (4,0); 81-90% (4,5); 91-100% (5,0).

TOTAL PhD STUDENT WORKLOAD REQUIRED TO ACHIEVE THE INTENDED LEARNING OUTCOMES
– NUMBER OF HOURS AND ECTS CREDITS

Activity	Number of hours
Scheduled course contact hours	15
Other contact hours involving the teacher (consultation hours, examinations)	
Non-contact hours – student`s own work (preparation for classes or examinations, project, etc.)	2
Total number of hours	17
Total number of ECTS credits	0

INSTRUCTIONAL MATERIALS

Compulsory literature:	Czynczyk A., 2012: Szkółkarstwo sadownicze, PWRiL, Warszawa; Rejman A., Makosz E., 1994: Szkółkarstwo roślin sadowniczych, Plantpress, Kraków;
Complementary literature:	CZASOPISMO - SZKÓŁKARSTWO HRYNKIEWICZ-SUDNIK J., SĘKOWSKI B., WILCZKIEWICZ M. 2001. ROZMNAŻANIE DRZEW I KRZEWÓW LIŚCIASTYCH. PWN, WARSZAWA ŚLASKI J., SĘKOWSKI B., 1988: SZKÓŁKARSTWO SZCZEGÓŁOWE DRZEW I KRZEWÓW OZDOBNYCH ORAZ UŻYTKOWYCH, PWRIL, POZNAŃ