

Course code:

Plan position:

A. INFORMATION ABOUT THE COURSE

B. Basic information

Name of course	Production and quality of plant raw materials
Field of studies	
Level of studies	
Profile of studies	General academic
Form of studies	Stationary
Specialty	
Unit responsible for the field of studies	
Name and academic degree of teacher(s)	Dr hab. Inż. Wojciech Kozera, prof. PBŚ Dr hab. Inż. Tomasz Knapowski, prof. PBŚ
Introductory courses	no requirements
Introductory requirements	no requirements

C. Semester/week schedule of classes

Semester	Lectures (W)	Auditorium classes (Ć)	Laboratory classes (L)	Project classes (P)	Seminar (S)	Field classes (T)	Number of ECTS points
5?			35				7

2. LEARNING OUTCOME

No.	Learning outcomes description	The reference to the learning outcomes of specific field of study	The reference to the learning outcomes for the area
KNOWLEDGE			
W1	The student knows the role of minerals in shaping soil fertility, their role for the proper growth and development of plants		
W2	Knows the factors determining soil fertility and the state of its supply with nutrients.		
SKILLS			
U1	Prepares laboratory reports on a given topic using basic information technologies. He is able to integrate knowledge in the field of production and quality of plant raw materials and instrumental analysis when formulating and solving tasks.		
U2	Student can choose and apply the appropriate method for the study of the general analysis of the chemical		

	composition of the soil and the technological features of plant materials		
SOCIAL COMPETENCES			
K1	The student is aware of the importance of his profession and the requirements that are placed before him.		
K2	The student is aware of the potential threats to the environment and consumers resulting from their activities.		

3. TEACHING METHODS

A. Traditional methods used ***

Laboratory

B. Distance learning methods used ***

<p>Synchronous method (classes conducted in a way that ensures direct interaction between the student and the teacher in real time, enabling immediate flow of information, the method can be used only if it is provided for in the study plan for a given cycle of education): e.g. remote lecture in the form of videoconference, remote discussion, etc.</p>
<p>Asynchronous method used as an auxiliary (a method that does not ensure direct interaction between the student and the teacher in real time, used only as an auxiliary / complementary method): e.g. online educational videos, online multimedia presentations, etc.</p>

4. METHODS OF EXAMINATION

Practical performance of exercises provided for in the program and reports containing the theoretical part, results, elaboration of results and conclusions. Preparation of a multimedia presentation

5. SCOPE

Lectures	-
Laboratories	<p>Determination in green mass and yield of plants: - total protein content, - starch content, - macrolelements (N, P, K, Mg, Ca, Na), - falling number – wet gluten, - sedimentation value according to Zeleny test, - water absorption of the flour, - bread volume, - physical parameters of grain.</p> <p>Determination in soil: - macrolelements (N, P, K, Mg, Ca, Na), - pH value, - hydrolytic acidity, - microelement (Cu), - concentration of organic carbon.</p> <p>Introduction students with analytical techniques and apparatus (grain analyzer Infratec 1241, amino acid analyzer AAA 400, atomic absorption spectrometer Varian AA 240 FS, Skalar San++ flow analyzer, apparatus for color determination of raw materials and products Konica Minolta CR-410) used in the chemical laboratory.</p>

6. METHODS OF VERIFICATION OF LEARNING OUTCOMES

LEARNING OUTCOME	Form of assessment					
	Oral examination	Written exam	Colloquium	Project	Presentation	Laboratory
W1					x	x
W1					x	x
U1					x	x
U 1					x	x
K1					x	x

7. LITERATURE

Basic literature	Literature on Agricultural Chemistry, Food Technology and Instrumental Analysis
Supplementary literature	Literature on Agricultural Chemistry, Food Technology and Instrumental Analysis

8. TOTAL STUDENT WORKLOAD REQUIRED TO ACHIEVE EXPECTED LEARNING OUTCOMES EXPRESSED IN TIME AND ECTS CREDITS

Student's activity		Student workload– number of hours
Classes conducted under a direct supervision of an academic teacher or other persons responsible for classes	Participation in classes indicated in point 1B	24
	Supervision hours	2
Student's own work	Preparation for classes	4
	Reading assignments	3
	Other (preparation for exams, tests, carrying out a project etc)	2
Total student workload		35
Number of ECTS points		7