

Polish name of the course:		Ogólna uprawa			ECTS	4
English name of the course:		Cropping system				
Name of study		Organic Agriculture and Food Production				
Language:		English			Study level:	I
Study status:	<input checked="" type="checkbox"/> full-time <input type="checkbox"/> part-time	Status of the course:	<input type="checkbox"/> basic <input checked="" type="checkbox"/> professional	<input checked="" type="checkbox"/> obligatory <input type="checkbox"/> elective	Semester: 3	<input checked="" type="checkbox"/> winter semester <input type="checkbox"/> spring semester
		description applies from the academic year (year):	2019/2020	Catalog number :	ROL-ER-1S-03Z-01	
Coordinator of the course ⁵		Dr hab. Irena Suwara prof. SGGW				
Teachers :		Dr hab. Irena Suwara prof. SGGW, dr Aneta Perzanowska, mgr inż. Martyna Prończuk				
Conducting unit:		Department of Agronomy				
Unit ordering classes :		Faculty of Agriculture and Biology				
Goals and description of the course:		<p>Goal: The aim of the course is to show students current aims of agriculture and farming systems, agricultural land use in the world, factors of plant production and consequences of decisions, especially those influencing natural environment. Possibilities to improve the fertility and quality of soils, increasing the content of humus. The rules for arranging crop rotation - a key element of organic management. Participation in laboratory classes (soil analysis) enables students to understand the impact of different crop cultivation and tillage methods on the basic properties of soils, particularly affect physical soil quality.</p> <p>Description: Lectures: Agriculture and its current aims. Agricultural land use in Poland, Europe and in the world. Utilized agricultural resources and sowing structure. Origin and economic importance, cultivation area and yields of the main species of field crops in Poland and in the world. Specific characters and factors of plant production. Definitions connected with agronomy. Climatic conditions for field plants (light conditions, temperature and precipitations). Soil – the main factor of plant production. Water and soil organic matter and their role for field plants. Systems of plant management and catch crops- a key element of organic management. Systems of soil tillage. Farming systems.</p> <p>Laboratory and auditorium exercises: Factors affecting soil physical properties: soil compacting, soil tillage, organic fertilization and crop rotation. Assessment of aggregation and soil structure under different tillage, crop rotation and fertilization conditions using laboratory methods (dry and wet sieving). Interpretation of the structural analysis results - percent water stable aggregation (% WSA) and mean weight diameter (MWD). Soil moisture and porosity characteristics: water content at field capacity, water content at permanent wilting point and available water content depending of soil compaction (water holding analysis on 15 Bar Pressure Plate Extractor). Arranging crop rotations for ecological farms. Cropping systems under different type of soil – climatic region - farming production conditions (crop choice, crop organisation and rotation, catch and cover crops, residue management).</p>				
Didactic forms, number of hours :		W - lecture, hours 15 C - auditorium exercises, hours 15 LC - laboratory exercises, hours 15				
Teaching methods :		lecture, discussion, analysis and interpretation of observations and measurement results, laboratory analysis, consultations				
Formal requirements and initial assumptions :		Soil Science, Plant Physiology, Plant Breeding and Seed Production, Plant Nutrition Principles				
Learning outcomes :		Knowledge: W1 - knows and describes current aims of agriculture and specific characters of plant production, natural environment and climatic and soil conditions for agriculture W2 – knows and describes systems of plant and tillage management and farming systems W3 – knows and describes the role of soil organic matter and physical soil condition in soil quality and plant growth	Skills: U1 – understands impact of different crops and tillage operations on soil organic matter and physical properties U2 - understands how to optimize the organization of plant production at farm level in accordance with maintaining or improving environment and soil quality	Ccompetence : K1 – knows how to listen and explain in the language that is understandable and appropriate for the situation		
The verification way of learning outcomes :		written tests and works from laboratory and auditorium exercises written exam				

Form of documentation achieved learning outcomes:	Written work on lectures. Two written tests and works from laboratory and auditorium exercises
Elements and weights with the impact on the final grade:	Written exam 50%; Written tests and works of laboratory and auditorium exercises 50%;
Place for course:	Lecture / exercise room / laboratory room; Collection of Cultivated Plants of the Department of Agronomy; Faculty Research Station in Skierniewice
Basic and complementary literature: Basic: Firman E. Bear „Soils and fertilizers”, New York 1953 Rattan Lal, Manoj K. Shukla „Principles of soil physics” New York 2004 Supplementary: 1. F.E. Allison “Soil organic matter and its role in crop production. Amsterdam London New York 1973. 2. Fred Magdoff, Harold Van Es „Building soils for better crops” USDA and SARE 2009 3. Encyclopedia of Soil Science, Second Edition, New York 2005 4. Oxford Dictionary of Science – Oxford University Press 2005.	
Comments	

Quantitative indicators characterizing the module / course:

Estimated total number of student work hours (contact and own work) necessary to achieve the expected learning outcomes – based on this, complete the ECTS field:	102 h/4 ECTS
The total number of ECTS points that a student obtains in classes requiring direct participation of academic teachers or other persons conducting classes (consultations, cooperation with a supervisor):	2,5 ECTS

Table of compliance of the directional learning outcomes with the effects of the course:

effect category	Learning outcomes for the course:	Reference to effects for the study program for the field of study	The impact of the course on the field effect ^{*)}
Knowledge –W1	knows and describes current aims of agriculture and specific characters of plant production, natural environment and climatic and soil conditions for agriculture	K_W06, K_W11	2
Knowledge –W2	knows and describes systems of plant and tillage management and farming systems	K_W12, K_U05	1
Knowledge –W3	knows and describes the role of soil organic matter and physical soil condition in soil quality and plant growth	K_W06, K_U12, K_U14	2
Skills –U1	understands impact of different crops and tillage operations on soil organic matter and physical properties	K_U05, K_U06, K_U14, K_K01	2
Skills – U2	understands how to optimize the organization of plant production at farm level in accordance with maintaining or improving environment and soil quality	K_W08, K_U08, K_U12, K_U13, K_U15, K_K03	2
Competence –K1	knows how to listen and explain in the language that is understandable and appropriate for the situation	K_K02	1

*)

3 - advanced and detailed,

2 - significant,

1 - basic,