

**Tłumaczenie programu studiów na język angielski**

**Programme of study  
Global Environment and Development**

Name of the field of study	Global Environment and Development
Name of the field of study in English / in the language of instruction	Global Environment and Development
Language of instruction	English
Level of education	second cycle
Level in the PQF	7
Studies profile	general academic
Number of semesters	4
Number of ECTS credits to graduate	120
Form of studies	full time
Professional title awarded to the graduates (name of the qualification in its original wording, PQF level)	magister
Number of ECTS credits that the student needs to obtain for the classes conducted with direct participation of academic teachers and/or other tutors	60

The following codes are used in the proposal: UCPH – University of Copenhagen, UW – University of Warsaw, UMIL – Università degli Studi di Milano; SD – sustainable development).

**Assignment of the field of study to a given area of study and academic disciplines<sup>2</sup>**

Area of study	Academic discipline	Percentage share of the academic disciplines	Leading academic discipline (more than a half of the learning outcomes)
Social sciences	management and quality sciences	25	
	socio-economic geography and spatial management	8	
	law	8	
	economics and finance	8	
Natural sciences	Earth and related environmental sciences	51	Earth and related environmental sciences
<b>Total:</b>	-	100%	-

<sup>2</sup> The table presents data according to the specialisation Sustainable Environmental Development at the University of Warsaw

Learning outcomes defined for the field of study by reference to the descriptors of 2nd degree in the Polish Qualification Framework for qualifications at level 6–7 obtained within the framework of the Higher Education and Science System after obtaining full qualification at level 4 of the PQF

Learning outcomes symbol  for the field of study	Learning outcomes	Reference to PQF 2 <sup>nd</sup> degree descriptors
Knowledge: the graduate knows and understands		
K_W01	in a thorough key theories and current debates related to environment and development;	P7S_WG
K_W02	in a thorough key field data collection methods (in both natural and social science fields);	P7S_WK
K_W03	In-depth critical aspects of working at the junction of environment and development;	
K_W04	fundamentals of the philosophy of science for interdisciplinary and intercultural research and work across the social and natural sciences;	P7S_WG
K_W05	in a thorough concepts of: inquiry, reflection, integrity, open-mindedness, evidence-based thinking, collegiality in conducting research on environment and development;	P7S_WK
K_W06	the concepts and principles of industrial property and copyright protection and the need to manage intellectual property resources;	
K_W07	in-depth the principles of creation and development of various forms of entrepreneurship nationally and globally.	
Skills: the graduate is able to		
K_U01	apply and assess own knowledge, skills, and competencies in relation to complex, interdisciplinary problems emerging at the junction of environment preservation and development requirements;	P7S_UW
K_U02	work on the questions relating to environment and development in interdisciplinary and intercultural groups;	P7S_UO
K_U03	apply research methods adequate for environment and development research;	P7S_UW
K_U04	analyse the validity and reliability of multidisciplinary natural and social science data;	
K_U05	distinguish the specificities of various research disciplines related to environment and development studies and define their boundaries;	

K_U06	identify, analyse, and communicate environment and development research questions to both professionals and non-professionals, in various communication situations, using modern and appropriate information and communication tools;	P7S_UK
K_U07	use intellectual, practical, numeracy, communication, interpersonal, team work, as well as information and communication technology in environment and development research activities;	P7S_UW
K_U08	analyse and interpret different forms of environment and development data to generate consistent conclusions;	
K_U09	use English at an advanced level and use specialist terminology in English in papers and oral presentations.	P7S_UK
<b>Social competences: the graduate is ready to</b>		
K_K01	critically analyse on and discuss environment and development questions;	P7S_KK
K_K02	reflect on the benefits and challenges related to practising interdisciplinarity in the field of environment and development research;	
K_K03	discuss and exchange arguments on a particular case generalise these for a broader research perspective;	
K_K04	display the competence, behaviour, and attitudes required in professional working life, including the ability to work on environment and development questions in interdisciplinary and intercultural teams in both the private and public sectors, based on reflection, integrity, open-mindedness, evidence-based thinking, and collegiality;	P7S_KR
K_K05	communicate environment and development questions in a clear, concise manner both orally and in writing so that they are understandable for persons from in and outside their field;	P7S_KO
K_K06	live the lifelong learning approach.	

**Methods of verification and assessment of the attainment of the intended learning outcomes during the entire cycle of teaching and learning.**

<b>Learning outcomes in the category of knowledge are verified by means of:</b>	Written exams, oral exams, assessment of participation in discussion field work, thesis
<b>Learning outcomes in the category of skills are verified by means of:</b>	Written exams, oral exams, assessment of participation in discussion, field work, project works, thesis

<b>Learning outcomes in the category of social competences are verified by means of:</b>	Written exams, oral exams, assessment of participation in discussion, field work, simulation, thesis
--	--

**Learning outcomes defined for the specialisation with a reference to the learning outcomes defined for the field of study**

<b>Specialisation name: Sustainable Environmental Development</b>		
<b>Symbol of the learning outcomes defined for the specialisation</b>	<b>Learning outcomes defined for the specialisation</b>	<b>Symbol of learning outcomes defined for the field of study</b>
<b>Knowledge: the graduate knows and understands</b>		
S_W01	in a thorough earth and environmental sciences theories and concepts, as well as social science theories and concepts (management and quality sciences), socio-economic geography and spatial economy, legal sciences, economics and finances related to analysing and understanding questions at the juncture of environment and development at micro and macro levels;	K_W01
S_W02	in a thorough theoretical basis of qualitative and quantitative data collection methodology, including interviews, questionnaires, surveys, and rapid appraisal techniques;	K_W02
S_W03	in a thorough concepts for the elaboration of a system of SD indicators, the process of making forecasts of social, economic and environmental phenomena;	K_W01
S_W04	in a thorough legal regulations to guarantee sustainable development while preserving the environment;	K_W01, K_W03
S_W05	in a thorough contemporary global and local issues at the juncture of environment and development from different perspectives: environmental, political, cultural, socio-economic.	K_W01, K_W03, K_W05
<b>Skills: the graduate is able to</b>		
S_U01	undertake high quality quantitative and qualitative data collection on the environment and sustainable development and analyse it critically;	K_U01

S_U02	apply principles, theories, and frameworks to case studies and engage in research and debates related to environmental resource governance and sustainable development;	K_U02
S_U03	recognize the problems and challenges of sustainable development and formulate proposed responses to them in an organization;	K_U01, K_U02, K_U03
S_U04	select appropriate methods, tools and procedures leading to the achievement of sustainable development goals, as well as critically reflect on those goals.	K_U01, K_U03, K_U04
<b>Social competences: the graduate is ready to</b>		
S_K01	analyse, thoroughly and in an interdisciplinary manner, processes of change in relation to environmental resources and sustainable development, both individually, as well as in various working groups;	K_K01
S_K02	identify, formulate, and carry out actions that are relevant to preserving environmental resources and sustainable development in particular locations, acting with respect for local specificities and understanding of the local community.	K_K02

<b>Specialisation name: Agricultural Development</b>		
<b>Symbol of the learning outcomes defined for the specialisation</b>	<b>Learning outcomes defined for the specialisation</b>	<b>Symbol of learning outcomes defined for the field of study</b>
<b>Knowledge: the graduate knows and understands</b>		
N_W01	in-depth current research and theories relating to agriculture and development;	K_W01
N_W02	in a thorough natural science methods of describing and characterising agricultural- and ecological systems and analysing questions of productivity, resilience, and sustainable development;	K_W02
N_W03	in a thorough concepts of sustainable water use in the context of the effects of climate change and the impact of human activities;	K_W01, K_W03
N_W04	in-depth aspects of rearing techniques for different animal species;	K_W03
N_W05	in a thorough problems related to the correct selection and sustainable management of agricultural machinery, under different operating conditions.	K_W03
<b>Skills: the graduate is able to</b>		

N_U01	plan research, collect data, and use field methods and data analysis techniques;	K_U01
N_U02	link and harmonise agricultural activities with environmental conditions;	K_U04
N_U03	critically identify sustainability issues in relation to agricultural development;	K_U05
N_U04	apply irrigation methods and practices;	K_U01, K_U03
N_U05	Select, on the basis of criteria, agricultural machinery for use from the perspective of respecting the environmental impact during its use.	K_U01, K_U03
<b>Social competences: the graduate is ready to</b>		
N_K01	plan and implement agricultural innovations in a professional capacity in private sector companies, government bodies, non-governmental organisations, research institutions, or development agencies;	K_K04
N_K02	Display independence and integrity, as well as awareness of ethical and moral questions related to agriculture and ecology and take these into account when working in different cultural settings;	K_K05
N_K03	Continuously acquire new skills and knowledge when working in complex field settings, as well as in interdisciplinary teams in intercultural environments.	K_K06

**Classes and/or groups of classes assigned to a given term of studies**

**Københavns Universitet (UCPH)**

**Year of study: first**

Course title or group of classes title	Form of classes	Total: number of class hours	Total: ECTS points	Programme of study learning outcomes
<b>Courses common for all the specialisations</b>				
<b>Global Challenges in Environment and Development</b> [Globalne wyzwania w zakresie środowiska i rozwoju]	lecture, exercises, fieldwork	80	7,5	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U04; K_U05; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Treści programowe</b>	The purpose of this course is to teach, on the basis of selected case studies and problems, how knowledge is generated and used in both social and natural sciences. The course (i) gives students an in-depth understanding of key theoretical, conceptual, and practical issues and discussions, and (ii) allows them to learn interdisciplinary approaches to research and problem solving through active participation in discussions, group work, and individual essay preparation. The basis of the course is the analysis of selected global challenges and introducing students to tools and frameworks which can be used to reflect and generate knowledge across disciplines. This course places particular focus on countries in the Global South.			
<b>Quantitative and Qualitative Methods in Environment and Development</b>	lecture, exercises	63	7,5	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U05; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06



[Metody ilościowe i jakościowe w ochronie środowiska i rozwoju]				
<b>Treści programowe</b>	<p>The course focuses on learning data collection instruments and analytical approaches for understanding of the human-environment relation. In particular, this pertains to methods used to address current environmental and development challenges, such as how to feed the world while preserving natural resources. The course explains and applies both quantitative and qualitative methods for collecting and analysing data. Specifically, the course delves into three complementary approaches: quantitative methods to address socio-economic dimensions, quantitative methods to address environmental dimensions, and qualitative methods to address both socio-economic and environmental dimensions. The course includes exercises on developing and reviewing data collection instruments, selecting relevant data, performing simple data statistical analyses of socio-economic and environmental quantitative data, coding and analysing qualitative data, and creating meaningful data visualisations. Data analysis exercises are based on primary and secondary data, including data obtained from ongoing research projects.</p> <p>Students apply the acquired methodological skills in group projects, planning data collection and analysing environmental and development data from an interdisciplinary perspective. This includes developing a research project based on diversified research methods, including socio-economic methods, quantitative environmental methods, and qualitative methods.</p>			
<b>Practicing Interdisciplinary Field Research on the Environment</b>  [Praktyka interdyscyplinarnych badań terenowych nad środowiskiem naturalnym]	exercises, fieldwork	180	15	K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Treści programowe</b>	<p>This course teaches skills in designing, implementing and reporting on field research on natural resources/environment/agriculture in interdisciplinary groups. The course emphasizes the application of both qualitative and quantitative methods commonly used in natural and social sciences. Students will face difficulties, limitations, the need to make choices, and will discover possible benefits of applying diversified research methods in real-world situations while working on their research project, which is related to natural resources / the environment / agricultural problems/issues at their junction.</p> <p>The main objective of this course is for students to gain experience in conducting the research process in its entirety: from identifying and formulating a research question; preparing a research project; planning and implementing data</p>			

	<p>collection; analysing data; to writing a report, and presenting/defending the report. The course gives students the possibility to learn how particular research methods affect the findings, as well as include analysis of specific material gathered with the use of the specific method applied, as well as reflection on not getting research data. The course creates students' awareness of research ethics.</p> <p>The course includes undertaking a (small) research project and conducting field research (data collection), generally in the Global South countries. On return from the field research, the student groups prepare a report on their research findings, which constitutes the basis for an oral exam for the team members. During the fieldwork/data collection, the student groups work closely with student groups from partner universities. Student groups from this course and those from partner universities share the collected data, but prepare separate reports that are graded separately.</p>			
<b>Elective modules</b>  [Przedmioty specjalizacyjne do wyboru]	lecture, exercises, fieldwork	Depending on the specialisation selected (minimum 160)	30	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Treści programowe</b>	The first year specialisation modules fall into two categories: (i) specialisation modules on the "Sustainable Environmental Development" speciality track – emphasizing the significance of social sciences in relation to sustainable development; and (ii) specialisation modules on the "Agricultural Development" speciality track – emphasizing the significance of natural sciences in relation to agricultural development. Courses are offered by three departments: Food and Resource Economics; Plant and Environmental Sciences; and Geosciences and Natural Resource Management. The first year set of restricted elective subject elements vary with second year line of specialisation.			

Number of ECTS credits: 60

Students on the second year of study / or / Second-year students choose one of two specialisations: / University of Warsaw (UW) - Sustainable Environmental Development  
Università degli Studi di Milano (UMIL) - Agricultural Development

Year of study: second

Course title or group of classes title	Form of classes	Total: number of class hours	Total: ECTS points	Programme of study learning outcomes
<b>Courses pertinent for a given specialisation Sustainable Environmental Development (Uniwersytet Warszawski)</b>				
<b>Global Problems in the Contemporary World</b>  [Globalne problemy we współczesnym świecie]	lecture, conversation classes	15 – lecture 30 – conversation classes	5	S_W01; S_W02; S_U01; S_U02; S_U03; S_U04; S_K01; S_K02; K_U09
<b>Course Content</b>	<p>This course examines the multidimensional nature of contemporary, interconnected global challenges that reinforce one another through environmental, economic, political, and cultural perspectives. Key issues include climate change, social inequalities, democratic backsliding, the crisis of the welfare state, resource depletion, and geopolitical instability. The course explores how these crises interact, exacerbating global insecurity, social fragmentation, and undermining the belief in progress.</p> <p>A central focus is the framework of sustainable development and its role in addressing these challenges. Students will critically assess policies such as the UN Sustainable Development Goals (SDGs), and green economic transitions, alongside critiques from degrowth, post-capitalist, and political ecology perspectives. The course encourages engagement with alternative, radical approaches to systemic change, in search for the solutions that might prove effective in confronting the root causes of the global crisis.</p> <p>As part of the conversation classes, students prepare and discuss a project on global problems of the contemporary world, taking into account social, economic, environmental, and political perspectives.</p>			

<b>Emerging Sustainable Development Law</b>  [Tworzące się prawo zrównoważonego rozwoju]	conversation classes, lecture	30 – conversation classes 15 – lecture	5	S_W01; S_W02; S_U01; S_U02; S_U03; S_U04; S_K01; S_K02; KW_06; K_U09
<b>Course Content</b>	During the course students explore the development of legal regulations aimed at assuring sustainable development, including European Union's regulations regarding sustainable investment and sustainability reporting. The classes focus on selected issues related to the genesis of the concept of legal regulation of sustainable development, as well as the constitutionalisation of sustainable development. Legal solutions in international, including EU, terms are analyzed, taking into account the specifics of Asian, American and EU approaches, as well as selected examples of concretization in domestic law. In the lecture, students learn about the impact of sustainability regulations on different areas of law and economy. In the course of the conversation classes, students prepare and discuss a paper on a legal issue on sustainable development, taking into account the practical dimension, including the competitiveness of companies operating in different regulated markets.			
<b>Sustainable Development Economics</b>  [Ekonomia zrównoważonego rozwoju]	lecture, exercises	30 – lecture  30 – exercises	4	S_W01; S_W02; S_U01; S_U02; S_U03; S_K01; S_K02; K_U09
<b>Course Content</b>	The course clarifies and specifies the idea of sustainable development from the economic point of view. The course covers basic neoclassical economics and basic ecological economics, the theories of man-made and natural capital, the management of renewable and non-renewable resources, and an introduction to economic valuation. The main part of the lecture is formed by two sections: economic instruments with special focus on instruments recommended for sustainable development, and economic policy strategies supporting sustainable development.			
<b>Measuring, Evaluating and Reporting Sustainability and Innovation</b>  [Pomiar, ocena i raportowanie zagadnień dotyczących zrównoważonego rozwoju i innowacji]	lecture, conversation classes	15 – lecture 30 – conversation classes	5	S_W01; S_W02; S_U01; S_U02; S_U03; S_U04; S_K01; S_K02; K_U09

<b>Course Content</b>	<p>The course teaches how to assess progress towards the sustainable development goals of a selected organisation, or territorial unit.</p> <p>During the course, elements common to most indicator systems (Sustainable Development and innovation) are introduced: strategies, objectives, methods for preparing a set of indicators, criteria for selecting indicators. The course provides knowledge on the structure of indicator systems, the main types of architecture, hierarchy in indicator systems, issues related to the use of these systems and characteristics of the indicator system, bodies responsible for the implementation of SD objectives. Students will become familiar with the databases of the institutions monitoring the SD (GSO, OECD, Eurostat, MONET). Data from these databases are used to analyse the dynamics of time series, i.e. environmental, social or economic data. Students gain knowledge of forecasting and backcasting by unstructured methods, for time series with specific components and selection of forecasting methods with the lowest forecasting error.</p> <p>Data presentation methods and good practices for SD reporting are presented. The classes provide the practical skills needed to produce SD reports. The practice of developing these skills is carried out in exercises. Students prepare a SD report for a selected institution in which they assess the achievement of SD objectives.</p> <p>During the course the European Innovation Scoreboard of EU countries is used, which provides a comparative analysis of innovation performance in EU countries.</p>			
<b>MERGED Intra-semester Workshop</b>  [Warsztaty międzysemestralne MERGED]	seminar	18 - seminar	3	K_W01; K_W02; K_W03; K_W04; K_W05; K_W06; K_W07; K_07; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Course Content</b>	This workshop focuses on contributing to the development of each MERGED student's draft thesis synopsis, including by providing external feedback. The workshops include the preparation and development of a presentation containing a research synthesis, and then its presentation to the group and critical discussion, emphasizing methodological issues. During the workshops, the student formulates, defines and operationalizes scientific issues within the natural or social sciences in the context of broadly understood global development.			
<b>Elective modules</b>  [Przedmioty specjalizacyjne do wyboru]	lecture, exercises, fieldwork	Depending on the modules selected (minimum 60)	11	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01;

				K_K02; K_K03; K_K04; K_K05; K_K06
<b>Course Content</b>	<p>The student completes specialisation elective courses of at least 11 ECTS, selected from the published list of elective courses for the specialisation Sustainable Environmental Development.</p> <p>The course:</p> <ul style="list-style-type: none"> <li>– develops understanding of the principles and processes that underpin sustainable development and enables application of these principles to assure sustainable development;</li> <li>– develops abilities in the use of information technology, communication skills, and time management in an environment and development context;</li> <li>– develops abilities to use methods, assess data, and design feasible environment or development interventions;</li> <li>– prepares for professional development in the area of sustainable development and other professions requiring the ability to synthesise concepts and ideas and a holistic view on the issues analysed.</li> </ul>			
<b>Diploma Seminar</b> [Seminarium dyplomowe]	seminar	30 – seminar	27	K_W01; K_W02; K_W03; K_W04; K_W05; K_W06; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Course Content</b>	<p>As part of the seminar, students prepare a diploma thesis under the individual supervision of a supervisor. The seminar is preceded by a lecture on the methodological aspects of correct thesis preparation. The diploma thesis must be carried out within the thematic area of the study programme. The thesis is prepared on the basis of the student's own original research, including fieldwork, on a selected issue of environmentally sustainable development, based on an outline approved by the supervisor. The thesis is subject to verification and final assessment during the diploma examination.</p>			

Number of ECTS credits: 60

Course title or group of classes title	Form of classes	Total: number of class hours	Total: ECTS points	Programme of study learning outcomes
<b>Courses pertinent for a given specialisation Agricultural Development (Università degli Studi di Milano (UMIL))</b>				
<b>Laboratory of sustainability in livestock systems</b>  [Laboratorium – zrównoważony rozwój w systemach utrzymania zwierząt gospodarskich]	laboratory	24	7	N_W01; N_W02; N_U01; N_U02; N_U03; N_U05; N_K01; N_K02; N_K03; K_U09
<b>Course Content</b>	<p>The course aims to provide students with knowledge of the main aspects of the rearing techniques in the specific animal species (i.e., dairy and beef cattle, poultry, pigs, small ruminants, insects and fish), emphasizing the effects of particular farming systems on livestock production, on the environment, and on the animal welfare.</p> <p>Topics covered in the course include:</p> <ul style="list-style-type: none"> <li>– Overview of market commodities for animal feeding in the world.</li> <li>– Use of agri-food industry by-products and alternative feeds (insects, algae, etc.) in view of sustainable development and circular economy.</li> <li>– Basic strategies of feed formulation for a sustainable livestock system of different species: large and small ruminants, pigs, poultry and fish.</li> <li>– Analysis of the case of developing countries: weak points and needs to guarantee the food security and sovereignty.</li> <li>– The role of NGOs in development projects and related case studies.</li> </ul>			

	<ul style="list-style-type: none"> <li>– Sustainable development in cattle milk production: factors affecting milk yield and composition; dairy herd management, reproduction and fertility; calf and heifer rearing.</li> <li>– Sustainable development in beef cattle production: growth, development and management of meat animals.</li> <li>– Sustainable development in swine production: sow reproduction; sow management and feeding; rearing and finishing techniques of light and heavy pigs.</li> <li>– Sustainable development in poultry production.</li> <li>– Sustainable development in sheep and goat production: herd management, reproduction and feeding.</li> <li>– Introduction to animal welfare: history, main concepts, new insights. Main welfare issues in farm animals: dairy and beef cattle, calves, pigs, poultry, sheep, goats, insects and fish. Animal welfare and its connection to sustainable development of livestock production: One Welfare, United Nations' Sustainable Development Goals. Solutions to reconcile animal farming, animal welfare and sustainable development.</li> <li>– Role of animal genetic resources in livestock sustainable development.</li> <li>– Genetic and genomic tools to explore and manage domestic animal biodiversity.</li> <li>– Issues of identifying, managing and conserving genetic variability, as a key tool for Sustainable development.</li> </ul>			
<b>Laboratory of sustainability in agricultural mechanization</b>  [Laboratorium – zrównoważony rozwój w mechanizacji rolnictwa]	laboratory	60	6	N_W01; N_U01; N_U02; N_U05; N_K01; N_K02; N_K03; K_U09
<b>Course Content</b>	<p>The aim of the course is to bring students to the understanding of the problems related to the correct choice and sustainable management of agricultural machinery, in different operating conditions. In particular, the course will cover: (i) knowledge of the main agricultural machines and their functionality; (ii) criteria for their operational choice, (iii) parameters related to environmental impact during their use.</p> <p>The course covers: main agricultural operations and technical description of the related machines; rational choice of agricultural machinery from a technical-functional point of view; economic sustainability (working costs); parameters related to environmental impact (fuel and lubricant consumption; exhausted gas emission; material consumption; chemical distribution and other elements.).</p>			



<b>Laboratory of sustainability in water management</b>  [Laboratorium – zrównoważony rozwój w gospodarce wodnej]	laboratory	60	6	N_W01; N_U01; N_U02; N_U04; N_K01; N_K02; N_K03; K_U09
<b>Course Content</b>	<p>The objective of the course is to bring students to the understanding of the problems related to water planning and management in the field of agricultural and rural environments, at different spatial scales. In particular the course deals with: fundamentals of hydrology; water sources for agriculture; water requirements of crops and soil-plant-atmosphere relationships; irrigation methods and practices; irrigation water management at the farm and district scale.</p> <p>The course covers: basic processes of the hydrologic cycle; sources of water for agriculture (rivers, reservoirs, groundwater, treated wastewater); soil-plant-atmosphere relationships and the water balance calculations at different scales through mathematical models as a base for water resources planning and management; irrigation methods and practices; planning and management of water resources, with particular reference to sustainable irrigation water use; legal aspects, with reference to the EU Water Framework Directive.</p>			
<b>MERGED Intra-semester Workshop</b>  [Warsztaty śródsesemestralne MERGED]	workshops	18	3	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06
<b>Course Content</b>	<p>In the workshop, the student formulates, defines and operationalises scientific issues within the fields of natural sciences or social sciences, in the context of global development in the broadest sense.</p> <p>The workshop also includes the preparation and development of a presentation containing a synthesis of the research, followed by its presentation in front of the group and a critical discussion, emphasising methodological issues.</p>			
<b>Elective modules</b>  [Przedmioty specjalizacyjne do wyboru]	lecture, exercises, fieldwork	Depending on the modules selected (minimum 160)	11	K_W01; K_W02; K_W03; K_W04; K_W05; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06

<b>Course Content</b>	The students may complete the offered subjects within the specialisation Agricultural Development II.  The course: <ul style="list-style-type: none"><li>– develops understanding of the principles and processes that underpin sustainable agricultural development;</li><li>– develops abilities in the use of information technology, teamwork, communication skills and time management in an agriculture and development context;</li><li>– provides knowledge and skills needed by commercial companies, NGOs, and governments responding to current challenges to agricultural systems;</li><li>– equips students for a career in sustainable agricultural development and allied professions requiring the ability to synthesise concepts and ideas and to take a holistic view.</li></ul>				
<b>Diploma Seminar</b>  [Seminarium dyplomowe]	seminar	30	27	K_W01; K_W02; K_W03; K_W04; K_W05; K_W06; K_U01; K_U02; K_U03; K_U04; K_U05; K_U06; K_U07; K_U08; K_U09; K_K01; K_K02; K_K03; K_K04; K_K05; K_K06	
<b>Course Content</b>	As part of the course, students prepare a diploma thesis. The aim of the diploma thesis is to formulate, define, and operationalize a scientific issue related to global development. The diploma thesis must be carried out within the thematic area of the study programme. The thesis is prepared on the basis of the student's own original research, including fieldwork, on a selected issue of environmentally sustainable development, based on an outline approved by the supervisor. Research findings must be creative.				

Number of ECTS credits: 60".