



JAGIELLONIAN  
UNIVERSITY  
IN KRAKÓW

## Econometrics and Impact Evaluation

### Educational subject description sheet

#### Basic information

<b>Field of study</b> Joint Bachelor in Sustainability	<b>Education cycle</b> 2025/26	
<b>Speciality</b> Geography & Economics	<b>Subject code</b> UJ.WPAJBSGECs.8100.16527.25	
<b>Organizational unit</b> Faculty of Law and Administration	<b>Lecture languages</b> english	
<b>Study level</b> first cycle (joint degree programme)	<b>Subject related to scientific research</b> Yes	
<b>Study form</b> full-time degree programme	<b>Disciplines</b> Economics and finance, Management science and quality	
<b>Education profile</b> General academic	<b>ISCED classification</b> 0311 Economics	
<b>Mandatory</b> obligatory	<b>USOS code</b>	
<b>Subject coordinator</b>	Piotr Szwedo	
<b>Lecturer</b>	Clément Bosquet, Nick Deschacht, Romain Courault	
<b>Period</b> Semester 5	<b>Examination</b> exam	<b>Number of ECTS points</b> 5.0
	<b>Activities and hours</b> Discussion class: 45	

#### Goals

C1	Master the use of methodology in economic appreciation of sustainability-related issues
C2	Get acquainted with the various tools of geospatial data and their use

## Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
<b>Knowledge - Student knows and understands:</b>			
W1	interconnections between various aspects of sustainability and identify their significance in the context of natural and social sciences, with a special focus on economics and geography	JBS_K1_W06	written exam
W2	how to apply the theory and methodology of disciplines included in the selected specialisation track to sustainability-related problems, taking into consideration practical limitations such as protection of intellectual property.	JBS_K1_W07	written exam
W3	how to collect, analyze and present geographical data	JBS_K1_W04	written exam
<b>Skills - Student can:</b>			
U1	apply adequate methods and tools, including selected IT tools, to solve problems related to data collection, analysis, and management in the context of sustainability; use adequate tools to create and process geographical data	JBS_K1_U03	written exam
U2	plan and effectuate simple sustainability-related projects under supervision and in the context of personal lifelong learning, both individually and in a team, using appropriate transversal skills and taking shared responsibility for the outcome.	JBS_K1_U04	written exam
<b>Social competences - Student is ready for:</b>			
K1	to critically assess and verbalize their own competencies and skills related to different aspects of sustainability as well as their need for development.	JBS_K1_K04	written exam
K2	to defend the importance of scientific data and methods as a basis for decision-making; to assess monitoring efficiency in sustainability issues	JBS_K1_K05	written exam

## Calculation of ECTS points

Activity form	Activity hours*
Discussion class	45
problem analysis	45
preparation for the exam	30
preparation for classes	15
<b>Student workload</b>	<b>Hours</b> 135
	<b>ECTS</b> 5.0

\* hour means 45 minutes

## Study content

No.	Course content	Subject's learning outcomes
1.	Section 1: Econometrics. 5.2.34  <ul style="list-style-type: none"> <li>• Why do we need econometrics?</li> <li>• Linear regression models</li> <li>• Ordinary least squares</li> <li>• Inference, statistical tests</li> <li>• Heteroskedasticity</li> </ul>	W1, W2, W3, U1, U2, K1
2.	Section 2: Impact Evaluation in Economics 5.2.35  <ul style="list-style-type: none"> <li>• The impact evaluation problem</li> <li>• Counterfactual causality</li> <li>• Randomized experiments</li> <li>• Reweighting and matching</li> <li>• Regression discontinuity</li> <li>• Difference-in-differences, Synthetic controls and Fixed Effects</li> <li>• Instrumental variables</li> </ul>	W1, W2, U1, U2, K1
3.	Section 3: Contribution of GIS and remote sensing in sustainable development II (code 5.2.36)  <ul style="list-style-type: none"> <li>• Intro to GIS and remote sensing for sustainable development</li> <li>• Spatial data acquisition and processing</li> <li>• Spatial analysis techniques</li> <li>• Land use and land cover change detection</li> <li>• Natural resource management</li> <li>• Environmental monitoring and assessment</li> <li>• Disaster risk and resilience</li> <li>• Geospatial decision support systems for sustainable development</li> </ul>	W1, W2, W3, U1, K1, K2

## Course advanced

### Teaching methods :

text analysis, brainstorming, conversation lecture

<b>Activities</b>	<b>Examination methods</b>	<b>Credit conditions</b>
Discussion class	written exam	Active participation (non-graded), written exam based on open questions (graded).

## **Entry requirements**

None

## **Literature**

### **Obligatory**

1. Core Econ Team (2024), The Economy 2.0 : Microeconomics, url : <https://www.core-econ.org/project/the-economy-2-0-microeconomics/>
2. Core Econ Team (2024), The Economy 2.0 : Macroeconomics, url : <https://www.core-econ.org/new-edition-of-the-economy/>
3. Core Econ Team (2024), Experiencing Economics, url : <https://www.core-econ.org/project/experiencing-economics/>
4. Core Econ Team (2024), Doing Economics, url : <https://www.core-econ.org/project/doing-economics/>
5. Core Econ Team (2024), The Economy 1.0, url : <https://www.core-econ.org/project/core-the-economy/>
6. Core Econ Team (2024), Economy, Society, and Public Policy, url : <https://www.core-econ.org/project/core-espp/>

## Effects

Code	Content
JBS_K1_K04	The graduate can critically assess and verbalize own competencies and skills related to different aspects of sustainability as well as their need for development.
JBS_K1_K05	The graduate can defend the importance of scientific data and methods as a basis for decision-making.
JBS_K1_U03	The graduate can apply adequate methods and tools, including selected IT tools, to solve problems related to data collection, analysis, and management in the context of sustainability.
JBS_K1_U04	The graduate can plan and effectuate simple sustainability-related projects under supervision and in the context of personal lifelong learning, both individually and in a team, using appropriate transversal skills and taking shared responsibility for the outcome.
JBS_K1_W04	The graduate can identify sustainability-related problems specific to selected cultural, geographical, and political contexts.
JBS_K1_W06	The graduate can describe interconnections between various aspects of sustainability and identify their significance in the context of natural and social sciences, with a special focus on disciplines included in the selected specialisation track (law and politics; chemistry and physics; chemistry and biology; economics and geography; economics, management and engineering; humanities).
JBS_K1_W07	The graduate can apply the theory and methodology of disciplines included in the selected specialisation track to sustainability-related problems, taking into consideration practical limitations such as protection of intellectual property.