Introduction to Economics, Management & Engineering

Educational subject description sheet

Basic information

Field of study Joint Bachelor in Sustainability **Speciality** - **Organizational unit** Faculty of Law and Administration **Study level** first cycle (joint degree programme) **Study form** full-time degree programme **Education profile** General academic **Mandatory** obligatory	**Education cycle** 2025/26 **Subject code** UJ.WPAJBSS.820.16350.25 **Lecture languages** english **Subject related to scientific research** Yes **Disciplines** Management science and quality, Economics and finance **ISCED classification** 0488 Interdisciplinary programmes involving broad field 04 **USOS code**

Subject coordinator	Piotr Szwedo, Gregorio Martin-de Castro
Lecturer	Gregorio Martin-de Castro, Javier Amores-Salvadó, Tiene Nobels

Period Semester 2	**Examination** exam **Activities and hours** Lecture with elements of a discussion class: 49	**Number of ECTS points** 4.0

Goals

C1	The aim is to interactively familiarise students with the KU Leuven track. Students will learn about how to deal with sustainability issues in a business environment by developing both the technical aspects and insight into strategic management. The course will use examples from a case (e.g. the construction of a wind farm) as a common thread, as well as many others to illustrate the complexities of strategic decisions.

Subject's learning outcomes

Code	Outcomes in terms of	Effects	Examination methods
Knowledge – Student knows and understands:			
W1	the structure, composition and components of electrical power grid.	JBS_K1_W07	written exam
W2	voltage, current and power and their relation in electric circuits.	JBS_K1_W07	written exam
W3	three phase systems and its advantages for power transfer.	JBS_K1_W06, JBS_K1_W07	written exam
W4	the main sustainability challenges for strategic management	JBS_K1_W03	written exam
Skills – Student can:			
U1	analyse basic electric circuits and interpret the result.	JBS_K1_U01, JBS_K1_U03	written exam
U2	perform power calculations for single and three-phase alternating current systems and interpret the result	JBS_K1_U01, JBS_K1_U03	written exam
U3	apply strategic management to business real world	JBS_K1_U04	written exam
Social competences – Student is ready for:			
K1	to perform scientific problem analysis and solving	JBS_K1_K02	written exam
K2	to critically approach their knowledge and its sources	JBS_K1_K04	written exam

Calculation of ECTS points

Activity form	Activity hours*	
Lecture with elements of a discussion class	49	
preparation for classes	27	
preparation for the exam	44	
Student workload	**Hours** 120	**ECTS** 4.0

* hour means 45 minutes

Study content

No.	Course content	Subject's learning outcomes
1.	Electric charge and field (3h)	W2
2.	Electric potential and voltage (3h)	W2
3.	Current and power (3h)	W1, W2
4.	Circuits: components and basic circuits (part 1 – 3h)	W1, W2, U1, K1
5.	Circuits: components and basic circuits (part 2 – 3h)	W1, W2, U1, K1

No.	Course content	Subject's learning outcomes
6.	AC power (4h)	W1, W2, U2
7.	Three-phase systems and power (3h)	W1, W3, U1, U2, K1, K2
8.	Introduction to Strategic Management	W4
9.	Firms’ Performance and Stakeholders	W4, U1, U2, U3, K2
10.	Firms’ Future Orientation, Values and Sustainability	W4, U1, U2, U3, K2
11.	Environmental Analysis	W4, U1, U2, U3, K2
12.	Internal Analysis	W4, U1, U2, U3, K2
13.	Competitive Advantages and Strategies	W4, U1, U2, U3, K2
14.	Directions for Strategic Development	W4, U1, U2, U3, K2
15.	Methods of Development	W4, U1, U2, U3, K2
16.	Internationalisation Strategy	W4, U1, U2, U3, K2
17.	Strategy Implementation	W4, U1, U2, U3, K2

Course advanced

Teaching methods :

conversation lecture

Activities	Examination methods	Credit conditions
Lecture with elements of a discussion class	written exam	Written closed-book exam with multiple choice and open questions. Mark at least 50%

Entry requirements

None

Literature

Obligatory

1. Giancoli, “Physics: Principles and Applications”, Pearson, 2015 (ISBN: 9781292057125) Toledo: powerpoints and additional study materials

Effects

Code	Content
JBS_K1_K02	The graduate can demonstrate considerable entrepreneurial initiative, autonomy, and readiness to act in complex and changing environments, especially in the context of supporting, undertaking, and co-organising activities beneficial for a sustainable society.
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_U01	The graduate can critically analyse academic literature, formulate research questions and conduct research under supervision.
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_W03	The graduate can give examples of sustainability-related dilemmas and hypothesize on the optimal course of action.
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.