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EUROPEAN UNIVERSITY FOR CUSTOMISED EDUCATION

STUDY GUIDE

SUSTAINABLE ENERGY TECHNOLOGIES: INTRODUCTION

Organised by

University of Vaasa

1. IDENTIFYING DATA.		
· Course Name.	Sustainable Energy Technologies: Introduction	
· Coordinating University.	University of Vaasa	
· Partner Universities Involved.	-	
· Course Field(s).	Energy Technology	
· Related Study Programme.	Information Systems, Bachelor of Science Industrial Management, Bachelor of Science Automation and Computer Science, Bachelor of Science Data Architecture, Bachelor of Science Electrical Engineering and Energy Technology, Bachelor of Science	
· ISCED Code.	0713	
· SDG.	SDG 4: Quality education SDG 7: Affordable and Clean Energy SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 13: Climate Action	
· Study Level.	Bachelor	
· EUNICE Key Competencies	Problem solving	Moderately
	Teamworking	-
	Communication	Moderately
	Self-management	Moderately
	Cognitive flexibility	Partially
	Digital competence	-
	Technical competence	Strongly

	Global intercultural competence	Partially

· Number of ECTS credits allocated.	2
· Mode of Delivery.	Online asynchronous
· Language of Instruction.	English
· Course Dates.	22 September 2025 – 31 July 2026
· Precise Schedule of the Lectures.	This is a self-study, self-paced course. It will be open for enrollments during the above period. **There is an eight-week completion time after the date of entering the course in the EUNICE Moodle.** *See the section "Course inscription procedure(s)" below.
· Key Words.	Sustainable Energy, Sustainability, Energy Sources, Climate Change, Renewable Energy, Grid Management, Energy Storage, Societal Impacts, Environmental Impacts, Energy Production, Electricity Transmission, Smart Grids
· Catchy Phrase.	Empower Tomorrow: Master Sustainable Energy Today!

· Prerequisites and co-requisites.	- Be enrolled as a student at any EUNICE member university. - English B2 The course is **recommended to be completed no later than eight weeks after entering it in the EUNICE Moodle**. For this course starting on 22 September 2025, the eight-week recommendation period is reached on 17 November 2025. If you enter the course on 15 October, for example, count 8 calendar weeks from that date, and so on.
· Number of EUNICE students that can attend the Course.	No limit
· Course inscription procedure(s).	Find the course on the EUNICE website and fill out the form provided. Follow the instructions in the form. UVA, the host university, will contact you and share the enrollment key for the course. The last day to enroll is 30 June 2026. The last day to complete the course is 31 July 2026.

	*For matters related to credit recognition, see the "Observations" section below.

2. CONTACT DETAILS.	
· Department.	School of Technology and Innovations
· Name of Lecturer.	Teemu Ovaska
· Other Lecturers.	Hamidreza Maleki Almani
	eunice@uwasa.fi

3. COURSE CONTENT.

Do you want to be a responsible contributor of the future? A modern society does not work without energy. In this course, you will learn how to produce and use energy so that our society will benefit now and in the future. Thus, the course focuses on basic understanding, conceptual knowledge, and general awareness of sustainable production, distribution and utilization of energy.

4. LEARNING OUTCOMES.

After completing the course, the student can

* Understand the basic concepts of sustainable energy technologies and their role in achieving sustainability goals.
* Identify and describe different energy sources, including renewable and non-renewable sources, and their environmental impacts from life-cycle perspective
* Comprehend key global and EU energy policies, climate change frameworks, and sustainable energy strategies.
* Compare the efficiency and benefits of different renewable energy systems (e.g., solar, wind, bioenergy).
* Describe how energy is distributed from production to consumption and understand basic challenges related to energy distribution (e.g., grid management).
* Explain the importance of energy storage (e.g., batteries, pumped hydro storage).
* Reflect on the societal and environmental impacts of different energy technologies and contribute to discussions on sustainable energy transitions.
* Apply basic sustainability principles when evaluating the pros and cons of various energy systems.

In addition, the course develops

* Problem-solving and decision-making skills (e.g. comparison of energy sources, responsibility),
* Analytical and critical thinking skills (e.g. interpretation of energy production and consumption statistics), and
* General skills related to ethics, responsibility and sustainability (production, distribution and utilization of energy)

5. OBJECTIVES.

The course significantly advances students' understanding of sustainable production, distribution and utilization of energy, and promotes life-long learning.

6. COURSE ORGANISATION.

UNITS

1.	Sustainable Energy and Strategies
2.	Renewable Energy Sources
3.	Renewable Energy Production and Energy Storage
4.	Energy Distribution

LEARNING RESOURCES AND TOOLS.

All learning materials for the course are provided on the course page on the Moodle platform.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

This is a self-study course consisting of four themes, starting with an introductory video lecture followed by thematic material. The lectures and independent study take approximately 54 hours in total.
The course will be assessed based on active participation in each of the four thematic sessions. Each session will have questions to be assessed.

7. ASSESSMENT METHODS AND CRITERIA.

The course is recommended to be completed no later than eight weeks after registering for the course.

The course will be assessed based on active participation in each of the four thematic sessions. Each session will have questions to be assessed.

Course completion marks are given once a month.

Grading scale: Pass / Fail

OBSERVATIONS.

Upon successful completion of the course, students will be awarded with a EUNICE certificate issued by the University of Vaasa.

Recognition-related issues:
Recognition of this course's ECTS into the student's records is subject to approval by the International Relations Office, EUNICE Office or other relevant departments at the student's home university. Please contact such department(s) if you encounter any issues related to the recognition of the ECTS at the end of the course. Neither lecturers nor the University of Vaasa are in charge of the recognition process at the student's home university.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

All learning materials for the course are provided on the course page on the Moodle platform.