Faculty of Social Sciences

MESS57, Energy Transitions and Sustainability, 7.5 credits

Energiomställningar och hållbarhet, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Board of the Lund University Centre for Sustainability Studies on 2025-02-07 (STYR 2025/368). The syllabus comes into effect 2025-02-07 and is valid from the autumn semester 2025.

General information

The course constitutes a 3rd term elective (non-compulsory) course at LUMES, Lund University Master's Programme in Environmental Studies and Sustainability Science, 120 credits.

Language of instruction: English

Main field of study	*Specialisation*
Environmental Studies and Sustainability Science	A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

On completion of the course, the student shall be able to:

Knowledge and understanding

- Understand and apply different perspectives on material, technological and societal factors and sustainability issues related to energy systems and energy transitions from global to local levels
- Understand and explain how sustainability issues linked to various energy system aspects vary across different parts of the world
- Demonstrate an in-depth understanding of how different aspects of justice interact with ongoing energy transitions

Competence and skills

- Demonstrate the ability to formulate and analyse challenges and measures for different types of energy transitions from an interdisciplinary perspective
- Be able to demonstrate and contextualise the importance of energy transitions in achieving a broader global sustainability transition
- Develop skills in communicating energy sustainability challenges to a wider audience

Judgement and approach

- Evaluate different approaches to implementing energy transitions and assess their relative merits and limitations
- Demonstrate the ability to propose different options for a more sustainable energy system by applying approaches and measures presented in the course

Course content

The course covers basic energy concepts in terms of material, scientific and technical properties as well as societal priorities of energy systems in an energy transition context. It highlights, for example, spatial and temporal aspects of ongoing transitions to a greater share of renewable energy, including increased land requirements and possible synergies between different land uses. Geopolitical aspects of ongoing energy transitions are another spatial dimension addressed in the course, while temporal dimensions are analysed using, for example, socio-technical transition theory. Justice dimensions of energy transition are another focus of the course.

The course covers supply and demand options for energy production, focusing on different technologies and resources, as well as alternative strategies (e.g. energy efficiency) to reduce the environmental and social impacts of energy production systems in both developed countries and the Global South.

Course design

Teaching is in the form of lectures, seminars, study visits and group discussions. Individual projects are combined with group assignments and literature seminars to develop students' understanding of different aspects of ongoing energy transitions. During the course, a study visit is normally organised to illustrate and increase the understanding of important technical and societal aspects of energy systems and energy transitions in the Swedish context.

Compulsory components

Participation in the preparation and presentation of posters in groups is compulsory. Non-participation will be compensated for by replacement components.

Assessment

Course assessment is based on:

- Written group take-home exam (3 credits)
- Written individual take-home exam (4,5 credits)

To receive a passing grade on the course the student must also have particiapted in the compulsory component (preparation and presentation of posters in groups).

The course includes opportunities for assessment at a first examination, a re-sit close to the first examination and a second re-sit for courses that have ended during that school year. Two further re-examinations on the same course content are offered within a year of the end of the course. After this, further re-examination opportunities are offered but in accordance with the current course syllabus

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Three, Four, Five
The compulsory course component is excluded from the grading scale above. The grade for this component is Participated. For the grade Participated, the student has shown a sufficient result.

At the start of the course, students are informed about the learning outcomes stated in the syllabus and the grading scale and how it is applied on the course.

Overall course grade

The grade for the entire course consists of the average grade of the two exams that are assessed according to the Fail-3-4-5 grading scale. The written take-home in group is worth 40% of the final grade. The written individual take-home exam is worth 60% of the final grade. For a grade of 3 on the entire course the student must have been awarded at least 3 on all graded exams and have participated in the compulsory component.

Exam	Credits	Grade	Part of final grade for the course
Written take-home exam in group	3	Fail-3-4- 5	40%
Written individual take-home exam	4,5	Fail-3-4- 5	60%
Preparation and presentation of poster in group (compulsory component)	0	Participated	0%
			100%

Example: The student got the grade 3 on the written take-home exam in group and the grade of 5 on the written individual take-home exam (and participated in the compulsory component). The final grade is 4 ((3*40)+(5*60))/100=4.2 < 4.5 is rounded down and 4.5, 4.5 > is rounded up.

Entry requirements

To be admitted to the course, students must be admitted to Lund University International Master's Programme in Environmental Studies and Sustainability Science 120 credits, and have fulfilled course requirements of at least forty higher education credits in the programme.

Further information

This course cannot be included in a degree togheter with MESS41, Energy and Sustainability, 7,5 credits.