

## **Advancing Sustainable Futures: Integrating Biogas Production into Society for a Greener Transition**

Samhällsintegrering av biogasproduktion för att främja den gröna  
omställningen  
5 credits

Single subject course

746G75

Valid from: 2024 Autumn semester

<b>Determined by</b>	<b>Main field of study</b>	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Environmental Science	
<b>Date determined</b>	<b>Course level</b>	<b>Progressive specialisation</b>
2024-06-11	First cycle	G1N
<b>Revised by</b>	<b>Disciplinary domain</b>	
	Natural sciences	
<b>Revision date</b>	<b>Subject group</b>	
	Environmental Science	
<b>Offered first time</b>	<b>Offered for the last time</b>	
Autumn semester 2024		
<b>Department</b>	<b>Replaced by</b>	
Institutionen för Tema		

## Entry requirements

- General entry requirements for undergraduate studies.
- English corresponding to the level of English in Swedish upper secondary education (Engelska 6).  
Exemption from Swedish

## Intended learning outcomes

Upon completion of the course, students should be able to:

- identify and account for defined problems within predefined, broad and reality-based challenges for sustainable development
- use interdisciplinary perspectives on production and system integration of biogas and biofertilizer to develop realistic solutions to problems within sustainable development
- both orally and in writing, communicate solutions to actors with different backgrounds and knowledge

## Course content

The course examines how anaerobic digestion of organic waste can be used to produce biogas and biofertilizer in order to deal with problems related to energy, climate, agriculture and health. The course covers principles for and applications of anaerobic digestion of organic waste, as well as opportunities and obstacles for the implementation of biogas technology in various contexts. The course includes handling challenges involving anaerobic digestion linked societal actors, for example a company, a research project or an authority.

The course introduces natural science perspectives on biological processes, chemical reactions and physical relationships in relation to anaerobic digestion. In addition, engineering perspectives on integration into technical systems are introduced, and social science perspectives on how digestion can contribute to meeting political goals for sustainable development. The course also includes learning processes and group dynamics, as well as project management, communication and critical thinking.

## Teaching and working methods

The course is conducted remotely with the exception of one week of mandatory participation in campus-based teaching. When the campus-based teaching week is carried out is governed by the collaboration with external actors and is announced in good advance before the course starts.

The course is comprised of lectures, seminars, workshops and group work. Moreover, students shall conduct self-guided studies.

Language of instruction and examination: English.

## Examination

The course is examined by:

- active participation in seminars, grading scale: EC (P/F)
- active participation in workshops, grading scale: EC (P/F)
- in groups written presentation of group work, grading scale: EC
- individual contribution to oral presentation of group work, grading scale: EC

For a final grade of Pass (E), at least an E is required at the written presentation of the group work, E at the individual contribution to the oral presentation of the group work, and Pass at the remaining elements.

For a final grade of D, at least D is required at the written presentation of the group work, at least D at the individual contribution to the oral presentation of the group work, and Pass at the remaining elements.

For a final grade of C, at least C is required at the written presentation of the group work, at least C at the individual contribution to the oral presentation of the group work, and Pass at the remaining elements.

For a final grade of B, at least C is required at the written presentation of the group work, at least B at the individual contribution to the oral presentation of the group work, and Pass at the remaining elements.

For a final grade of A, at least a B is required at the written presentation of the group work, at least A at the individual contribution to the oral presentation of the group work, and Pass at the remaining elements.

Detailed information can be found in the study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve

their grades.

## Grades

ECTS, EC

## Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

### About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.