

The Biogas Process

Single subject and programme course

7.5 credits

The Biogas Process

744A07

Valid from:

Determined by

Date determined
2008-04-16

Main field of study

No main field of study

Course level

Second cycle

Advancement level

A1X

Entry requirements

To be eligible to the course the student must, except the general entrance requirements, have fulfilled 120 ECTS where of at least 90 ECTS in chemistry/biology or equivalent. Documented knowledge of English equivalent to "Engelska B" is required, or an international proficiency test, e.g. TOEFL, minimum score 550/214.

Intended learning outcomes

After completed the course the student should be able to

- account for the basic microbial processes responsible for biogas production and describe the delicate balances of the anaerobic degradation chain.
- identify and discuss the cause of a process disturbance and give suggestions on how to cure and control the process.
- be able to define key terms and perform relevant calculations in relation to different aspects of the process

Course content

The course contains a theoretical and a practical part. The microbiology of the biogas process as ruled by the used substrate is first treated on a theoretical level. Planning and construction of biogas plants for different applications including control systems and logistics regarding substrate supply and treatment of the fermented residue are critical ingredients. Furthermore hygienic, system energetic, economical and environmentally related aspects are important parts of the theoretical course-part. The practical part of the course involves operation of lab-scale reactors. The experiments will be used to exemplify the biogas potential, kinetics and hydraulic retention times related to different substrates.

Teaching and working methods

The course is based on lectures, seminars and practical exercises using lab-scale bioreactors. In addition visits to a number of biogas plants will normally be performed. In addition to those, the students are expected to study on their own. Language of instruction: English.

Examination

The course is examined through written tasks and oral presentations together with active participation in seminars. The lab-course and seminars are obligatory.

Grades

Three-grade scale, U, G, VG

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 carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

Department

Institutionen för Tema