Linnæus University

Jnr: 2015/1594-3.1.2

Course syllabus

Faculty of Technology
Department of Built Environment and Energy Technology

2KT313 Glaskemi och glasteknologi, 15 högskolepoäng
Glass Chemistry and Technology, 15 credits

Main field of study
Chemical Engineering

Subject Group
Chemical Engineering

Level of classification
First Level

Progression
G2F

Date of Ratification
Approved by Faculty of Technology 2015-05-19
The course syllabus is valid from spring semester 2016

Prerequisites
60 credits studies in chemistry, chemical engineering or material science/engineering. A basic command of English is required.

Objectives
After completing the course the student will have knowledge about:
The material glass from the perspective of chemical composition, production and properties.

Skills:
The student is expected to be able to use the knowledge to solve issues within related material science or process technology.

Content
The course contains the following elements:

- Material and properties definitions,
- Chemical compositions of the material glass,
- Critical process parameters: raw materials, relation to glass chemistry, process reactions and properties for manufacturing,
- Glass furnaces: principles, energy consumption and environmental impact,
- Forming technologies,
- Annealing and other thermal processes,
- Properties of solid glass and their relation to the chemical composition,
- Various types of glasses and their applications.

Type of Instruction
Theory from lectures alternatively own studies of literature. Exercises and laboratory work either as specific tasks or as part of ongoing research project.
Mandatory elements announced at the beginning of the course.

Examination
The course is assessed with the grades A, B, C, D, E, Fx or F.
Assessment of the student's performance usually takes place during the special examination periods and can be done through project work, laboratory work, assignments and written exams. Examination may be done both orally and in writing.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student’s performance is assessed as fail (i.e. received the grade F).

Course Evaluation
During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

Credit Overlap
This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 2KE913

Other
Some elements of the course may entail costs defrayed by the course participant.

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material
Required reading
J.E. Shelby, Introduction to Glass Science and Technology, 2nd edition, Royal Society of Chemistry 2005; ISBN 0-85404-639-9 308