DES M1
Design of Energy Systems

Lecture 1
Course intro

- Content
- Studynet
- Study activities
- Course work and assignments
- Evaluation
Purpose

”The student will obtain knowledge and calculation practice of refrigeration and heat pump systems so he/she will be able to design an efficient, environmentally friendly energy plant.”

competences to:

– communicate about designs of different types of energy plants
– design simple energy plants in a methodical way and more complex systems in co-operation with energy engineers”
Your expectations to the course

- Make a group of 3 students

- Start with a short introduction to each other.
  - Who are you and where are you from?
  - What are you studying and how many semester have you fullfilled?

- Discuss your expectations to this course and write down 3.

- Do a short presentation of the group and your expectation to the class.

Align expectations
Topics we will go through

Log Ph diagram

SVA

RECEIVER

EVAPORATIVE

CONDENSER

DISCHARGE

LINE

RECIPROCATING COMPRESSOR

SUCTION LINE

OIL DRAIN

LIQUID LINE

NRVA

SAFETY VALVE

PMFL

LP Float Valve type SV 4-6

Oil drain

PM 3

Filling valve

EVRA 40

FIA 65

FS

PT-100

UNISAB II

UNISAB II

R 0

I

CVP+CVH

EVM+CVH

CVT A+B

SVA

Pilot line

SVA

SVA

SVA
How you will learn

Before class:
- Read presentations from last class, finalize exercises
- Read textbook and compendium, solve exercises and assignments. Solve quizzes on Studynet

At class:
- Questions from students
- Short lectures on basic concepts. Exercises in groups or individually
- Workshops on assignment problems

Exercises/assignments/mini project:
- Solving refrigeration problems from real life

Company visit:
- Visit to a compressor manufacturing company or similar
Study activity model – DES M1

- **Lessons**: 30 hours (27%)
- **Excursions**: 30 hours (27%)
- **Assignments**: 40 hours (36%)
- **Mini project**: 30 hours (27%)

- **Initiated by Lecturers**:
  - Lessons, scheduled
  - Excursions
  - Project guidance
  - Laboratory work
  - Exams and tests
- **Initiated by Students**:
  - Homework and preparation for exams
  - Evaluation of the teaching
  - Bachelor project, assignment practical placement

- **Participation of Lecturers**:
- **Participation of Students**:
Studynet

Course info:
- Course description
- Lecture plan

Session plan:
- Home work
- Information for next lesson

Session materials:
- Compendium and other litterature and material (continually)
- Assignments (continually)

Assignments:
- All mandatory assignments to be handed in on Studynet!
Literature

**Textbook:**
- Book: Via Book Shop
- PDF: [Elsevier Store](#)
- First chapters on Studynet

**Compendium: Refrigeration, Theory and practice**
- Studynet

**Collection of exercises 1**
- Studynet or Via Book Shop
Teaching evaluation – your opinion matters

Evaluation is considered an important and integral part of the education process at VIA Engineering

**Midterm evaluation** (studynet – every semester)

- Purpose: possible adjustment and improvement of education in relation to the actual teaching

**Final evaluation** (Survey Exact – every third time the course is held)

- Purpose:
  - Evaluate whether the study programme has lived up to the learning objectives
  - Examine the extent to which the individual study activities has benefited the students' learning outcomes
How you will be evaluated
Examination instructions for DES M1

From Course Description:
- Oral examination.
- External censor.
- Approximately 20 minutes based on one or several written task(s) solved during the course and questions in the subject matter.
- There will be given a mark from the ECTS scale (for fulltime students from the corresponding 7 step scale).
Code of conduct

- Regular and punctual class attendance is expected
  - Door is closed when the lesson starts
  - If you are late you can enter the class in a break
- Laptops are for notetaking and other professional matters. Private communication during lessons is of course not allowed
- Active class participation is an important element in the learning process
- Keep yourself updated on Studynet and VIA mail
You are always welcome to look us up at our office - if we aren't there, please send us an email 😊