



Course syllabus

Faculty Board of Science and Engineering
School of Engineering

2SE502 Tillståndsövervakning m.h.a. Oljeanalysteknologi, 7,5
högskolepoäng

Asset Health Diagnose Using Oil Analysis Technologies, 7.5 credits

Main field of study

Total Quality Maintenance

Subject Group

Industrial Engineering and Management

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Organisational Committee 2009-07-24

The course syllabus is valid from spring semester 2010

Prerequisites

Condition Monitoring System 7,5 hp, or Machine Design 1 7,5 hp or Power Electronic Circuits 7,5 hp.

Expected learning outcomes

After completing the course the student is expected to be able to:

- interpret the results of oil analysis for electrical and mechanical systems.
- evaluate and use different diagnostic methods.
- select the maintenance action required to extend the asset lifetime.
- evaluate quality of different types of oils.
- evaluate condition of electrical and mechanical systems.
- identify the effect of oil degradation factors on the system's condition.
- estimate the economic consequences.

Content

The course comprises the following elements:

Oil role in electrical and mechanical system

Composition of oil and recommended specifications

Economic impacts and consequences

Electrical System:

- Fundamental mechanical design of power transformer
- Oxidation and degradation of insulation system
- Measurement of power transformers aging
- Laboratory analysis of insulating oil
- Diagnostic methods of electrical system
- Maintenance action methods

Mechanical System:

- Lubrication of hydraulic machine, turbine and gearbox
- Laboratory analysis of lubricating oils
- Diagnostic methods of mechanical system
- Safety handling and purification of lubricants

Type of Instruction

The teaching consists of lectures, group work, seminars, laboratory work, assignments, and case study.

Examination

The course is assessed with the grades U, 3, 4 or 5.

The examination is based on submitted reports and oral or written presentation of compulsory assignments. Information on compulsory elements is given at the course start.

Course Evaluation

When the course has finished, an evaluation is compiled. The results are reported to the students and then archived according to the rules of the school.

Other

Some elements of the course may entail costs defrayed by the course participant. The course language is English if international students attend the course.

Required Reading and Additional Study Material

Required reading

Ramsey Jadim. The course material consists also of scientific articles and lecture materials. This material is recommended and/or supplied by the course coordinator. ca 250 p.

Reference Literature

D.M.Pirro &A.A.Wessol. Lubrication Fundamentals, second edition, revised and expanded (CRC Press) 2001

Paul Gill. Electrical Power Equipment Maintenance and Testing, second Edition. (CRC Press) 2009