COURSE SYLLABUS

Automation 1

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7.5 credits (7,5 högskolepoäng)

Course code: ET1545
Main field of study: Electrical Engineering
Disciplinary domain: Technology
Education level: First cycle
Specialization: G1N - First cycle, has only upper-secondary level entry requirements

Subject area: Electrical Engineering
Language of instruction: Swedish
Applies from: 2019-09-02
Approved: 2019-03-01

1. **Decision**
   This course is established by Dean 2019-01-16. The course syllabus is approved by Head of Department of Applied Signal Processing 2019-03-01 and applies from 2019-09-02.

2. **Entry requirements**
   General entry requirements and Mathematics 2 or equivalent.

3. **Objective and content**

   3.1 **Objective**
   The course aims for students to acquire basic knowledge of electrical concepts and digital technology to program the control equipment. Furthermore, the student should be able to select and size control devices such as sensors and motors used in the production of technical context.

   3.2 **Content**
   Key elements in the course are:
   • control technology: rationale functions and circuits, combinational and sequential networks, PLC architecture and programming
   • bases in electrical engineering
   • sensor technology / metrology
   • electric motors

4. **Learning outcomes**
   The following learning outcomes are examined in the course:

5. **Learning activities**
   In the course different meetings such as lectures, discussions and Q&A sessions are held using a video conferencing system. Individual assignments that are handed in regualry give the student the opportunity to practice the ability to solve various problems withing the course by themselves.
   Assignments aim to improve the student's practical ability to apply and interpret results whereas the final exam focuses on the course as a whole and to apply relevant solutions methods on problems.

   Course is held in Swedish, but the literature can be in English.

6. **Assessment and grading**
   Modes of examinations of the course

Code	Module	Credits	Grade
1910	Written examination[1]	3 credits	AF
1920	Assignment	4.5 credits	GU

[1] Determines the final grade for the course, which will only be issued when all components have been approved.

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

If grade Fx are given, the student may after consultation with the course coordinator / examiner get an opportunity to within 6 weeks complement to grade E for the specific course element.

The course information for each course revision should include the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

7. Course evaluation
The course evaluation should be carried out in line with BTH:s course evaluation template and process.

8. Restrictions regarding degree
The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

9. Course literature and other materials of instruction
Haag, B. (2010). Industriell systemteknik -Ellära, elektronik och automation. Studentlitteratur. ISBN 978-91-44-00819-6.

10. Additional information
This course replaces the course ET1459
To attend this course on distance you need to have access to a computer with an internet connection.