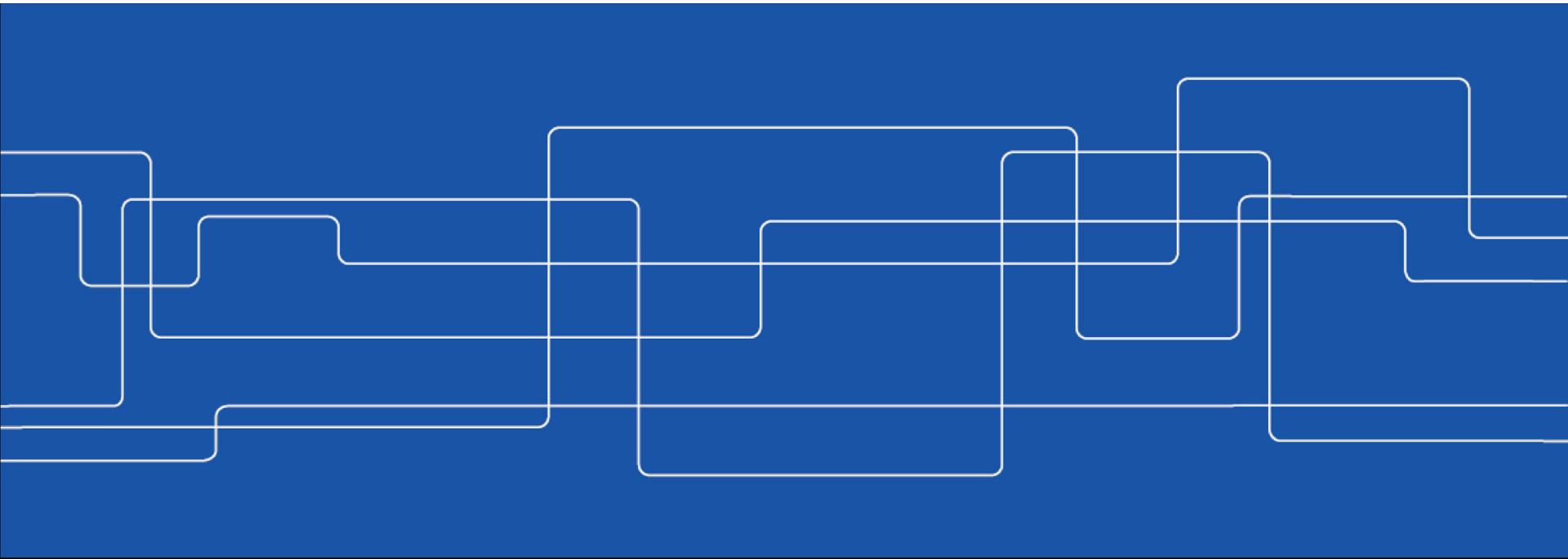




# **EG2320 Power Systems and Environment**

**Introduction**

Spring 2015





# Course objectives

- Analyse and discuss how a part of the power system affects the environment, which alternatives there are, as well as the costs for reducing the environmental impact,
- Critically review other environmental analyses,
- Reflect upon the role of the power system in a sustainable society as well as what the student in his or her future professional career can accomplish concerning environment.



# Learning activities

- This course does not have any traditional lectures.
- Students should learn from each other and from self-study.
- Project work.
- Individual essay.



# Project work

- Project groups will be decided by the course coordinator (the objective is to have groups of students with mixed background).
- Objective of project work: Analyse a given part of a power system.
  - **Environmental impact.** How does this part of the power system affect the environment?
  - **Alternatives.** What alternatives are there to using this part of the power system? What are the most important environmental aspects of these alternatives?
  - **Discussion and conclusions.** How can this part of the power system be improved and would it be cost efficient compared to the alternatives? Besides costs, what other advantages and disadvantages can be identified?



# Project work

## Examination

- Technical report (one report for all group members).
- Critical review (each student should write reviews of two other projects).
- Presentation (each student should present the results of his or her project group).

Each of these tasks will be given a score on the scale

- Very good (2 points)
- Good (1 point)
- Insufficient (0 points)



# Essay

- Individual task.
- The essay should discuss the student's personal view on environmental problems where electric power engineers can be part of developing solutions including some reflection on what the student could do in his or her future career.

Each essay will be given a score on the scale

- Very good (2 points)
- Good (1 point)
- Insufficient (0 points)



# Grading

- To pass the course, students must have received at least one point for each of the four marked tasks.
- The final grade will depend on the total score as in the table below:

| Total score | Grade |
|-------------|-------|
| 8           | A     |
| 7           | B     |
| 6           | C     |
| 5           | D     |
| 4           | E     |



# Schedule

- Introduction and group work exercise (today)
- Guest lecture (to be scheduled)
- Submission of project reports (23 February)
- Submission of critical reviews (2 March)
- Seminars (2–6 March)
- Submission of individual essays (12 March)





# Reports and essays

- Reports and essays must be written in a word processor and submitted as a pdf document on Bilda.
- Text and tables may not be inserted as graphical objects in the document!
- All submissions will automatically be checked against plagiarism.



# Plagiarism

- KTH defines plagiarism as “submitting someone else’s work as your own”.
- Will be considered as a “learning error” (failed assignment) if there is no reason to suspect an attempt to deceive.
- Otherwise, the case will be reported to the President of KTH and might be examined in the Disciplinary Board.



# Plagiarism

**What are you allowed to do?**

Can you use a sentence or part of a sentence that somebody else has written?



# Plagiarism

## What are you allowed to do?

Can you use a sentence or part of a sentence that somebody else has written?

Yes, if you put the text within quotation marks and indicate the source.

### Example:

Environmental externalities can be defined as “environmental costs associated with the provision of a good or service that may or may not be incorporated in the internal cost measurements of the provider.” [1]

[1] T. Ackermann, *Distributed Resources in a Re-Regulated Market Environment*, doctoral dissertation, KTH 2004.

- Use ... to show if you have left out some words in a quotation.



# Plagiarism

**What are you allowed to do?**

Can you use a longer text that somebody else has written?



# Plagiarism

## What are you allowed to do?

Can you use a longer text that somebody else has written?

Yes, if you put the text within quotation marks and indicate the source. It is also recommended to indent the text.

### Example:

The principles of hydro power generation are described in [2]:

“A hydro power plant generates electric power by utilising the difference in potential energy between an upper and a lower water level. The potential energy is converted to kinetic energy when the water is discharged from the upper to the lower water level via a turbine. The turbine in its turn is driving a generator, where the kinetic energy is transformed to electric energy.”

[2] L. Söder & M. Amelin, *Efficient Operation and Planning of Power Systems*, course compendium, KTH 2011.



# Plagiarism

## What are you allowed to do?

Can you use a longer text that somebody else has written?

Yes, if you put the text within quotation marks and indicate the source. It is also recommended to indent the text.

- Use – – – to show that you have left out some sentences in a quotation.
- Use brackets [] to indicate if you need to change or add a few words to make a sentence readable.



# Plagiarism

**What are you allowed to do?**

Can you rephrase a longer text that somebody else has written in your own words?





# Plagiarism

## What are you allowed to do?

Can you rephrase a longer text that somebody else has written in your own words?

Yes, but you still have to indicate the source of the text.

### Example:

In this section, it will be explained how the Newton-Raphson method can be applied to load flow calculations. Further details are found in [3].

...

[3] I. J. Nagrath & D. P. Kothari, *Modern Power System Analysis*, 2nd edition, Tata-McGraw Hill, New Delhi 1989.



# Plagiarism

## What are you allowed to do?

Can a report consist of a combination of texts which you have not written, provided that all texts are correctly cited?



# Plagiarism

## What are you allowed to do?

Can a report consist of a combination of text which you have not written, provided that all texts are correctly cited?

Depends on the circumstances. In general, this would not be accepted, as there is no contribution from the author(s).