

Semester Project

EPFL Lecture Railway systems and their transition, September 2025

Context

Scenario

Your group has been given the mandate to study a **subject related to rail transport systems** and to produce a **final report**.

Goals

The aims of conducting this exercise are to:

- **Develop your own ideas and critical thinking** by connecting various lecture subjects with freely available information.
- Develop a **comprehensive understanding and potential solutions**.
- Transfer subjects and own creative work into a **written report**.
- **Work collaboratively within a group**.

Organisation

Documents

This document contains information on the **framework of the project**.

The document '**Semester project – List of themes**' contains a list of themes. Each of these **themes** contains a goal to follow for the report (**goal**), a suggestion of subjects for the report (**suggestion of subjects**), some information to help you to find ideas (**some guidance**) and a suggestion of literature (**suggested readings**).

Groups

You will work in a **group of 3 to 4**. You are free to choose your group members.

You will choose a **theme from the list** and then, within that theme, **define the subject that you will focus on for the report**. You are encouraged to formulate your own subject. A **maximum of two groups** may select the **same theme** (first registered on Moodle, first served). A **subject can only be studied by one group**.

The group, the chosen theme (with its corresponding number) and the subject must be **registered on Moodle**.

Supervision

You can receive support during the designated hour for exercises and projects, which takes place on **Tuesdays from 3 PM to 4 PM**. A **table of content** shall be **discussed** and validated with the professor during these hours. At the request of students, an **additional hour per week of supervision may be arranged**.

Report

You will have to submit a **final group report** on the chosen subject. There is a **maximum limit of 15 pages of text (not including graphics)**. You will write it as if it were intended for a wide audience... A **pleasant reading** experience is essential; thus, visual aids (graphics, illustrations ...) are encouraged. Technical terms should be clearly introduced to ensure clarity for all readers. The report must have the following basic **structure** which you can adapt appropriately:

1. Management Summary

- Summary of the report including the findings and recommendations

2. Introduction

- Background information
- Justification of the subject
- Objectives of the work

3. Main Body

- Subject
 - Detailed elaboration of the addressed subject
- Methodology
 - Description of the methods and approaches used
- Results
 - Presentation of the key findings
 - Use of visual aids (graphics, illustrations ...) to support the results
- Discussion
 - Interpretation of the findings
 - Placement within the context of existing literature

4. Conclusion

- Summary of the main insights
- Outlook on future developments
- Recommendations for further reading

5. Appendix

- Bibliography
- Additional information, data, or materials supporting the work

Evaluation

For this project, you will receive a **group grade** based on the submitted report. It will account for **40% of your final course grade**. This grade will be assigned **according to the following four numbered points**. The bullet points provide examples to meet the requirements.

1. Completeness, relevance, depth and accuracy of the content

- Completeness of information: the report covers the key aspects of the subject.
- Relevance: the content directly supports the purpose of the report.
- Depth: the content goes beyond surface-level description.
- Accuracy of facts, definitions, and explanations.

2. Self-reflection and critical analysis

- Demonstration of the ability to analyse, compare, and evaluate ideas.
- Inclusion of personal reflections, insights, and well-argued perspectives.
- Identification of strengths, limitations, and implications of the subject.

3. Structure and style

- Compliance with the given structure of the report to use.
- Arguments are presented coherently and are easy to follow.
- Writing is concise, professional, and readable.
- Effective use of visual aids (graphics, illustrations...) and appropriate introduction of technical terms.

4. Use of sources and citations

- Use of complete, reliable, and relevant sources.
- Proper citation format is applied consistently.
- Critical engagement with sources rather than simple reproduction.

It is important to note that, for the evaluation, the focus is on **encouraging your own ideas and critical thinking by connecting various lecture subjects with freely available information**, and not on reproducing lecture theory.

During your final oral exam, you will be asked a few **questions regarding your group's report**. This will contribute to your final oral exam grade.

Notice on the use of AI

The EPFL guidelines [[link 1](#) and [link 2](#)] must be followed. Regarding the use of AI in your work: AI may be used as a support tool (for example, for brainstorming, practicing, translating text ...) but must not replace your personal contribution. It is essential that the final report reflects your own work, understanding, reflection, and input. Even you make use of AI tools for simple things such as translation etc, you must clearly state what was done with the AI and specify which tool was employed.

Timeline

Tu. 16.09.2025: Discussion of the semester project during the exercise hour.

Mo. 23.09.2025: Deadline for inscription of the group, theme and subject on Moodle.

Tu. 07.10.2025: Deadline for validation of the table of content with the professor.

Tu. 16.12.2025: Deadline for the final report delivery.

Contact

If you have any questions, please contact the **course teacher**: peter.kummer@epfl.ch