Course analysis
AH2028 Railway Traffic - Market and Planning, Advanced Course 7.5 credits

Introduction

The Railway traffic advanced course AH2028 is a project course, where students' after some inspiring initial meetings have to make an own study of a railway project. The study could be on localisation of a new railway, upgrading or any system wide aspects of railways, in Sweden or elsewhere in the world. The study is performed in groups with up to five students who make a common report. Normally the students are assigned the same grade after a seminar and submitting the final report. This course is usually a good preparation for the degree project.

Two special circumstances were present in autumn 2020:
- The corona pandemic made all teaching switch to web meetings (by Zoom)
- The present learning objectives are outdated and need to be replaced. A preliminary version were presented for the students in the beginning of the course, and in connection to the course evaluation.

Learning objectives and course evaluation questions are presented in appendix 1 and 2, respectively (below).

Analysis

The course is appreciated by the students who answered the questions (4 of 5 students, autumn 2020). The suggested learning objectives seem to be relevant and will be formally introduced before next course in autumn, HT2021-2.

Requested improvements by the students:
- Clearer guidance in the introduction – a report structure or some other guide would be appreciated
- Teaching and guidance by external professionals in railway planning from Trafikverket are appreciated and could be part of the introductory guidance as well as a follow-up of their report.

Appendix 1: Learning objectives

Present learning objectives (https://www.kth.se/student/kurser/kurs/AH2028?l=en)
The aim of this course is to give more and deeper knowledge in selected parts of a railway system and the train traffic and transports on it. After the course the student will be able to describe some parts and have knowledge of the total project. By choice of projects the student can specialize in for example traffic operation, capacity analyses, forecasting, economy or infrastructure design.

Suggested learning objectives

	Grading criteria and examination (all criteria for Pass must be met in Pass with distinction)	
Learning objective	*Pass*	*Pass with distinction*
Organise project work in a group	Project plan (with activity, time and person) is presented at the beginning of the course and workload between the project participants is uniform. The report is written continuously during the course, with the table of contents as the frame. Reported with draft reports at at least three project meetings during the course	The project plan is updated and corrected during the course to equalize the workload between the project participants. Several project participants take responsibility for the whole. Reported with updated project plan at least three project meetings during the course
Identify a purpose and a target group and design the report as a decision basis for this	The report can be understood by the target group and serve as a decision basis without obvious factual errors. The report's table of contents with the purpose and target group is presented at the beginning of the course. Reported by the final report	The report is distinct and clear with illustrations also of the whole and can also be understood by others than the target group. Reported by the summary in the final report
Selecting, delimiting and writing on a topic suitable for group work in railway or train traffic planning	The project participants choose a topic that can be independently searched for information and that can be addressed in the report within the project time. Reported in the table of contents at the beginning of the course, and in the final report	The report balances different aspects of the topic without significant gaps, and provides a good overall picture of the chosen topic. Reported through the final report
Can analyze and draw conclusions from the analysis that is put into context – understanding in context	The conclusions of the analysis are clear and serve as a basis for decision. Reported in the final report	The conclusions of the analysis show insight into the conditions and limitations, and identify the areas that are critical in a decision basis and where further studies may be needed. Reported in the final report

Appendix 2: Course evaluation questions

The students were asked two questions, Q1 and Q2, respectively, immediately after submitting their common final report. Four out of five students answered, by individual e-mail in either English or Swedish. Answers are here published as they were given (with some single exception).

Q1. Do you think that the course has given you knowledge corresponding to the learning objectives? (see attachment of present and planned learning objectives)

1. This project has helped me draft a project plan which is dynamic and work with the team to identify the flaws in the plan and constantly update it till it gave us a good result. We, as a group, brainstormed and identified the target variables which we felt was the most important to be analysed for the project. The inferences from the analysing the target variables were discussed and the most important inference was reported without losing the continuity of the aim of the project. This project gave me insights on how to plan a railway line by analysing even the minor factors which has a potential to affect the operation. It has also helped me do a draft a proper research strategy for the successful completion of the project.

2. I think the course helped me understand much regarding railway planning, and working independently. I think it was interesting that we were able to choose the project we wanted to work with. It gave us some creative freedom. Also I appreciate that I could use knowledge gained from previous related courses to give me an edge when doing this project.

3. Jag tycker att kursen gav mig kunskaper enligt *learning objectives* till en viss grad. Visserligen så var det bra med att kunna arbeta individuellt men jag tror att det handlar mycket om vilka man jobbar med. Jag hade en väldigt bra grupp, visserligen hade det vart bättre om vi jobbade mer tillsammans (t.ex som att ha gemensamma uppföljningar eller liknande) men mycket av det kan bero på att vi alla jobbar på distans. Därför såg jag det mer som ett individuellt arbete på det sättet att alla gör sin del av projektet och att jag fick en djupare förståelse på mina delar av projektet. Hade gärna velat ta del av andra områden än bara mitt genom att öppet kunna dela med sig sitt kunskapsområde till andra gruppmedlemmar. Men som sagt, detta kan bero på att vi alla var tvungna att jobba hemifrån. Överlag så tycker jag att kursen har gett mig en bra grund men att det fanns potential till att göra det ännu bättre.

4. Ja, jag tycker att kursen har bidragit till att uppfylla lärandemålen. Lärdom har jag framförallt fått från de diskussioner som uppstått inom gruppen och på möten. Faktum att Corona lett till att nästan alla möten varit online har dock tyvärr sänkt lärandekvaliteten då man, enligt mitt tycke, jobbar/diskuterar mer effektiv och koordinerad om man har fysiska möten. Men detta är ju inget ni lärare kan råda bot på.

Q2. How do you think we could improve teaching?

1. The overall experience of working in the project was good and a wonderful learning experience. However, we would have liked frequent meetings with the teachers during the initial phase to properly identify the problem statement as this is a vague topic. It maybe did not happen because of the pandemic but that is one feedback I have from taking this course. I hope you keep offering this course to attract more students into traffic planning in the future.

2. Overall the experience was great, I liked the creative freedom in the group choices, but some more direction from the teachers could be beneficial for the end result. My suggestion is that a more defined report structure would have been a helpful tool so we as students wouldn't miss or skip

important parameters that could be very important in the end result. Having said that, I personally enjoyed every part of the project.

3. Jag tror att en genomgång av det fundamentala kring marknad och planering hade hjälpt. Till exempel så gav Trafikverket en bra genomgång kring hur planeringen går till osv. Hade gärna velat ta del av den kunskapen tidigare in i kursen. Jag tycker att kursen var bra i och med att den var så flexibel och mycket eget ansvar. Jag tror att studiebesök och gemensamma aktiviteter hade gjort kursen mycket intressantare men utifrån förutsättningarna (coronapandemin) vi hade under denna period så är jag nöjd med hur lärandet har varit.

4. I och med att några av oss inte läst grundkursen till denna kurs så hade vi inte samma kunskapsbas att basera beslut på, även om man såklart kunde läsa på i kurslitteraturen och diskutera. Tror därför att det skulle vara bra om ni kunde hålla en föreläsning i början på kursen där de viktigaste delarna av grundkursen gås igenom. Detta hjälper säkert också de som faktiskt har läst grundkursen med att friska upp minnet av grundkursen. Sen så tycker jag att ni absolut bör bibehålla att man har ett möte med några representanter från Trafikverket lite längre in på kursen för att få diskutera sina idéer lite med de och få input från erfarna som har myndighetsperspektivet.