



# Course Analysis – AG2141 (Period 3, 2019-2020)

Course analysis carried out by Andrew Karvonen ([apkar@kth.se](mailto:apkar@kth.se)) on 2020-06-29

## Course Data

Course title	Course number
Urban Infrastructure	AG2141
Course credits and points distributed on exam forms	When the course was conducted
7.5 credits	2019-2020, Period 3
Course coordinator and other teachers	Number of registered students
Andrew Karvonen (course responsible, teacher) Amanda Winter (coordinator, teacher)	27

## Course Design

Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

This was my third year as course responsible and Amanda's first year as teaching assistant for this course. I changed the schedule this year to introduce the group project earlier. This resulted in a parallel structure of lectures/seminars and project work throughout the course. And instead of two or three guest lectures, I organised a roundtable discussion with two international researchers. We discussed various options for the home exam with the students and decided on the same format as the previous year but with additional time (13:00 on Thursday to 18:00 on Friday). I recruited and engaged a new non-academic partner, ElectricITY, and organised an all-day site visit to Hammarby Sjöstad. This replaced the previous engagement with the Urban ICT Arena in Kista. The majority of the course structure and activities followed previous years. The course examination consisted of:

1. NÄR1 - Lectures, 1.5 credits, grade scale: P, F
2. TEN1 - Examination, 3.0 credits, grade scale: A, B, C, D, E, FX, F
3. ÖVN1 - Exercises/Excursions, 3.0 credits, grade scale: A, B, C, D, E, FX, F

The course included two main components: classroom activities (lectures and discussion groups) and project-based learning (a site visit and group project work). Scheduled learning activities consisted of the following:

Activity	Hours
Lectures	10
Discussion groups	8
Examination	12
Field trip	6
Project work	6
Group presentations	6
TOTAL	48

In addition, the students were encouraged to meet with their groups on a regular basis outside of scheduled course hours.



Student study time was estimated as follows:

Activity	Hours
Reading preparation for lectures and discussion groups	40
Preparation for examination	20
Group project work (report and presentation)	90
TOTAL	150

### THE STUDENT'S WORKLOAD

**Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?**

The estimated workload for the course corresponds to 200 hours for a 7.5 credit course. On average, the students reported that they spent 12 hours per week over the 9 weeks. This equates to 108 hours in total which is significantly lower than the anticipated 200 hours. Student attendance in class was consistent so the deviation between expected and actual hours spent on the course can be attributed to lower than expected work outside the classroom.

### THE STUDENTS' RESULTS

**How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?**

The distribution of final grades was as follows:

Grade	Students
A	11 (41%)
B	15 (56%)
C	1 (4%)
D	0 (0%)
E	0 (0%)
F	0 (0%)

The performance of the students was lower than last year and grades were evenly distributed between As and Bs (with one C). All of the students were sufficiently engaged with the course and attended lectures and seminars and participated in group work regularly. There were no students who performed deficiently.

### OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT

**What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?**

The students had a consistently positive impression of the learning environment and there was minimal variation in opinions. The students understood the connection between the lectures, seminars, and project work and they appreciated the atmosphere of learning promoted in the course as a whole. One student noted that the urban planning students tended to dominate class conversations. This could be because these students were more comfortable with this type of teaching format.



## ANALYSIS OF THE LEARNING ENVIRONMENT

**Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?**

The majority of student feedback about the course was positive. The following negative feedback was identified:

- Some students indicated that they did not receive feedback throughout the course. It is not clear if the students felt obligated to answer the stated question or if they would appreciate additional feedback. There were no further suggestions on feedback in the open questions.
- Some students indicated that the assessment of the course could be fairer and more honest. It is not clear if these students were dissatisfied with their home exam grades or were anxious about receiving their group project grades. There were no further suggestions provided in the open questions.

## ANSWERS TO OPEN QUESTIONS

**What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?**

Several students suggested that the home exam was stressful due to time constraints. They would appreciate additional time. A few students said that they would benefit from more time in class for discussion. Typically, the classes are scheduled with a 45-minute lecture, a break, and then 45 to 60 minutes for a combination of small group and whole class discussion.

## PRIORITY COURSE DEVELOPMENT

**What aspects of the course should primarily be developed? How could these aspects be developed in the short or long term?**

Based on the student evaluations and our impressions of the course, I will make the following changes for future course offerings:

- **Course Schedule:** I will schedule additional class time for small group and whole class discussions. This could be facilitated by recording the lectures in advance and asking the students to view them before attending class. The disadvantage of this approach is that the lectures are less interactive. The advantage is that it frees up additional class time for active engagement.
- **Group Project:** I will strive to engage ElectriCITY more fully. Two staff members were very supportive of the student activities and helped to organise the introduction and site visit and attended the student presentations. I would like to expand this to include additional staff with other perspectives.



# Course Evaluation Summary

Course AG2141 Urban Infrastructure  
 Academic Year 2019-2020 Period 3  
 Course Responsible Andrew Karvonen  
 Teachers Andrew Karvonen, Amanda Winter  
 Date of Evaluation 28 February 2020  
 Registered students 27  
 Surveys completed 26  
 Completion Rate % 96

*On average how many hours/week did you work with the course (including scheduled hours)?*  
 Mean 12, SD 5.7, Response Rate 92%

## Statements

Disagree	Mostly agree	Neither agree nor disagree	Mostly agree	Agree
1	2	3	4	5

		Mean	SD	Response Rate (%)
1	The intended learning outcomes helped me to understand what I was expected to achieve.	4.2	1.1	96
2	I worked with interesting issues.	4.7	0.5	100
3	I regularly spent time to reflect on what I learned.	3.9	0.9	100
4	I explored parts of the subject on my own.	4.1	0.9	92
5	My background knowledge was sufficient to follow the course.	4.5	1.0	100
6	I felt togetherness with others on the course.	4.2	0.8	100
7	I received regular feedback that helped me to see my progress.	3.6	1.2	100
8	The course was challenging in a stimulating way.	4.2	0.9	96
9	I had opportunities to choose what to do.	4.2	0.8	100
10	I understood what the teachers were talking about.	4.7	0.5	100
11	Understanding of key concepts had high priority.	4.6	0.6	100
12	I was able to practice and receive feedback without being graded.	4.0	1.3	100
13	The course activities helped me to achieve the intended learning outcomes efficiently.	4.3	0.9	96
14	I was able to learn by collaborating and discussing with others.	4.5	0.6	100
15	The atmosphere on the course was open and inclusive.	4.7	0.5	100
16	I was able to learn in a way that suited me.	4.0	1.0	100
17	I understood how the course was organized and what I was expected to do.	4.6	0.9	100
18	I was able to learn from concrete examples that I could relate to.	4.5	0.9	100
19	I was able to get support if I needed it.	4.6	0.7	100
20	The assessment on the course was fair and honest	3.9	1.0	85
21	I was able to learn by trying out my own ideas.	4.0	0.9	100

22	I understood what I was expected to learn in order to obtain a certain grade.	4.0	0.8	100
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### Open Questions

*Question 1: What was the best aspect of the course? (Response Rate 100%)*

- Connecting each term and each lecture with concrete example and project with the proper articles and science behind it. I really liked the examples that were given are international ones and not only focusing on Sweden
- The tight connection between the literature and the lectures. I liked that you learned in several ways (reading, listening, discussing). Very interesting and relevant content!
- The lectures were really nice, some humorous way that help to spend two hours talking about the same subject. The lectures were interactive and the teacher give life to the subject. Best aspect is how the lectures are given.
- Lots of room for discussion. Application of theory good! Relaxed atmosphere created by Andy. Good grading time and feedback. Award ceremony.
- No single aspect. What I really liked: teacher's personality and way of doing the lectures, getting to read a lot of scientific literature and having an exam, that asks for proper understanding of the topic, quick grading.
- Lectures were really interesting, I loved the numerous examples of projects, the videos, etc. I also liked that we were free to choose a topic for the group project. The visit to Hammarby Sjöstad was awesome.
- The quality of the teaching team, the work they provided. The fact the project as in cooperation with ElectricITY.
- Easy – the teacher himself. His passion for the subject, clear, engaging presentations (I loved the little recaps on 'what we learned last week'), and humor are all exceptional.
- The lectures with real examples.
- Appropriate topics of each lecture. Enough and sufficient reading material are provided via Canvas.
- The fun learning environment with interesting lectures and dialogue with fellow students and teachers. Interesting course literature.
- Study trip to Hammarby Sjöstad. Concrete examples during lectures. I like the structure of early exam, presentation and then time for report (usually other way around).
- Interesting topics based on real historical and present examples.
- Inspiring lectures. I like to do project work with my group members. It's interesting.
- Inspiring lectures and the field visit. The continuous work in relation to Hammarby Sjöstad visit. The 85% attendance was really good, helps a lot!
- Study trip. Discussions during class. Visually attractive slides! You are a great speaker, Andy, I could keep my attention.
- Interesting and fun lectures.
- To be honest, having Andy as the instructor created such a strong foundation for my engagement in the course. His presentations were clear and concise and entertaining. The way he organized his material was orderly and helped build on other concepts.
- The lecturer was very good, site visit was also fun.
- The example about smart city and how the technical system of infrastructure really helped me learned a lot.
- The lectures and most of the readings.
- The lectures were linked to the required readings very well! Lecture were well structured and useful for both the project and home exam.
- I really enjoyed the group discussion that occurred in this course! I'm on exchange here and this rarely happens at my home university. Enjoyed the site visit.

- Very nice group discussions. The relation to a real life project (Hammarby Sjöstad).
- The balance of lectures and group work. The overall structure has been very good.
- I really liked the literature and lectures as these brought up really interesting subjects. The project is very appropriate for the course and the field trip was a good start. I thought the home exam was fair in regards to its content.

*Question 2: What would you suggest to improve? (Response Rate 85%)*

- Increase the number of lectures and the following up for the projects. Make the home exam at the end of the course instead of middle of the late time of the period.
- Keep the home exam as it was, more easy to plan your time. More small group discussing in class, more like a seminar. Would help to meet all people/hear all people in class, can sometimes be easier to talk in a smaller group.
- Be more selective on the articles. The article of 30 pages on defining infrastructure seems a bit too long. Maybe try to have some kind of syllabus summarising the main subject of the course.
- More scheduled group work time. Maybe more factual teaching at lectures since there is room for it! Lectures often cut short (which is appreciated) but I wouldn't mind more knowledge (good student, I know).
- Suppress the picture of the lady in underwear in the slides talking about the change to right to left on roads (it is useless and a bit sexist in my opinion).
- The content of the course is not based on sufficient analysis of the outcomes of infrastructures. It could be a bit more technical-oriented so that we could make a relevant opinion on innovations such as smart cities, etc. We only had social articles describing technologies in a naïve way without assessing their real impact.
- Literally nothing. One of my top 3 fave classes @ KTH. Actually, I'm kind of sick of giving our free, innovative, global student thought ideas to municipalities because they reap all the benefits for nothing! But I already told Andy that and it's all fine. Quad helix collab, I suppose!
- The questions on the home exam were very big and the optimised time (2 hours) was not realistic. It took me (and others I've talked to) 3-4 hours/question which resulted into a very stressful exam. Improvements: more time on the exam/fewer questions.
- It would be very good if I can go on more site visits (study trips).
- Home exam design could be further improved. It was a bit tricky with the short format (of the question and time). Some things felt like a 'check' minimum knowledge and some more advanced discussion. Before exam assessment and feedback on an individual level. Add a lecture where concepts are tied together more extensively.
- Home exam was challenging, which is not a problem. However, timing was difficult (deadline Friday 18:00). Also, question very challenging but due to time pressure I had the feeling I couldn't go into depth.
- Connection of the project groups in class based on subjects for the project.
- It's not necessary to have one big project in every course, although it worked fine here.
- Maybe some more interactions/discussions in smaller groups. Let students set priorities for which topics for the group work are available.
- The learning outcomes could be improved to be more in detail what is expected to learn.
- Maybe we need seminars before every lecture so that we can better prepare for the lectures and understand the readings better.
- I would like a seminar of sort to discuss the readings. Kind of what was done with the smart city readings.
- I can't think of anything, home exam and group assignment were good, lectures and workshops were interesting and helpful. Andy was a great teacher!

- Maybe more international case studies/examples. A lot of focus on the US and UK.
- Maybe to change locations to a nicer classroom?
- The improvement made to the home exam structure was necessary, it's much better to let everyone decide on their own. Other than that, the times for the lectures were a bit off, but I know KTH is to blame for that.
- Urban planners dominated the discussions. The examples in class were mostly from a US perspective.

*Question 3: What advice would you like to give to future participants? (Response Rate 100%)*

- Start the project as soon as possible.
- The student should read the articles assigned before the lecture.
- Start to read in time and reflect about the literature/lectures. If you're not comfortable with discussing in class, maybe work/study the texts with some friends to get more into the key aspects/concepts of the course. Don't be scared to try your thoughts!
- Try to read the article before the lecture even if it is only the abstract, intro and conclusion.
- Come up with a timeline for the group project and divide responsibilities.
- Keep up to date on readings.
- Do read the readings thoroughly, makes learning for exam a lot more relaxed.
- Read the texts before the lectures! Easier to follow the lectures and easy for the home exam.
- Read the articles during the course period and not just before the home exam.
- Take it. And take a few little notes on the readings as you read. But Andy already told us to do that AND gave us tips and tricks in the beginning of the course!
- Start to read in time.
- I recommend them, before lecture, please read reading material and think about what they're wondering, which question they have.
- Read articles before lectures! Engage and have a dialogue with the teachers and fellow students.
- Take the course! Prepare the reading for every lecture. You will benefit once the exam comes around.
- Don't hesitate to get involved in discussion in class.
- Read the articles before every class or you will have to read them all before the exam.
- Follow the course plan and attend all lectures!
- Don't forget the home exam and start with reading earlier.
- Read the text and take notes (digital) before the home exam so you can search for the key concepts which you have noted. It is helpful so you can find which of all text addressing different stuff.
- Make sure you follow along on the readings to help you grasp the content more profoundly and clearly in support of the class lectures and discussions.
- Read the literature to every lecture, it helps well to the exam.
- Don't read the readings just before the deadline.
- Read more of the optional texts.
- Start to review the literature early!
- I suppose do the reading each week, and if you don't understand a concept, either ask in class or send Andy an email, he replies quickly.
- Make sure to take notes actively and systematically.
- Read literature before lectures, not only to stay updated but it also makes it even more interesting and thought provoking. I created an excel sheet with summaries of all mandatory reading in preparation for the home exam, which I thought was a good idea.

*Question 4: Is there anything else you would like to add? (Response Rate 50%)*

- Andy's way of teaching was amazing, he can easily deliver the information in a very interesting way.
- Thank you!
- Thank you for showing your knowledge and being humorous during your lectures.
- Thank you for a great course and engagement.
- Thank you for your great implication in the course.
- Thank you so much. And we missed you, Amanda! Tack.
- I really enjoyed the course. Tack så mycket.
- Overall a great course!
- Make more to include videos, they are great!
- Group size. We have been 6, whereas another group was only 3 or 4 participants.
- I had a great time!
- In general I liked it.
- Happy I took this course. It's very appropriate for a Master's level and fun!