



ATLAS

# EduCo Semester Documentation

Semester 3, 2015/16, Class of  
2017

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## Introduction

This EduCo semester documentation consists of the evaluations of the courses, the project and the semester as a whole. All the evaluations have a similar structure: first, a short summary of the course/project/semester is given, followed by a discussion based on the results of the EduCo semester survey which is based on the “EduCo criteria”. In this discussion, the strengths and weaknesses of a course/project/semester will be pointed out. Then, solutions to these problems are suggested and in the last section the agreements that were made with the teacher/coordinator are described.

In the EduCo semester survey students were asked to rank the statements on a scale from 1 to 5 with 1 always being the most negative attribution (never, very poor) and 5 the most positive attribution (always, very good). 18 (out of 20) students responded.

## Table of contents

Semester .....	2
Project Mars Space Mission .....	5
<i>Domains</i>	
Engineering: Materials Science .....	7
Engineering: Empirical Evidence .....	9
Mathematics: Signals, Systems & Transformations (SST).....	11
Mathematics: Artificial Intelligence (AI) .....	13
Social Sciences: Interdisciplinary Research Methodology .....	15
<i>Learning Lines</i>	
Learning Line Interdisciplinarity .....	17
Learning Line Research.....	18
Improvisation & Theatrical Simulation .....	19

## Semester

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year/semester: Semester 3, 2015, class of 2017

semester coordinators: Leonie Krab and Wessel Wits

## Summary of the semester

The semester's theme was "Extremes", the project was about problems potential colonists of Mars could encounter. The courses in the engineering domain were Materials Science and Empirical Evidence. In the mathematics domain students could choose between Signals, Systems & Transformations (SST) and Artificial Intelligence (AI). The social science course was about Interdisciplinary Research Methodology (IRM) combined with seminars on different research methods. On top of that, there was a 1 EC course called Improvisation & Theatrical Simulation. The dominant learning lines were Research and Interdisciplinarity. The students had 5 ECs of free electives to support the project work.

## EduCo Semester Survey

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. The semester planning was clear and changes were communicated in time	2.8	0.9
2. The expectations for this semester were clear	2.9	0.9
3. An evenly spread out workload throughout the semester was possible	2.9	0.9
4. This ATLAS Semester was coherent	3.4	1.1
5. Students were able to make informed and meaningful choices about the combination of courses within the semester	3.1	1.1
6. During the semester students were introduced to various topics that can assist them in narrowing down their interests towards a possible Master's program.	3.3	0.8
7. This ATLAS Semester allowed for personalization	4.1	0.8
8. Each student had an informed mentor that helped the student in his/her academic and personal development	3.8	1.0

## Discussion

In general, most students liked the semester because it provided us with a lot of freedom of choice. It was clear that the semester was well thought out, and the provided information material (ATLAS semester 3 Extremes hand out) clearly communicated structure, goals, and underlying thoughts. The semester coordinators were easily reachable, and tried their best to respond to arising problems.

Some issues arose that led to dips in motivation of the students and should be considered in future years. Some students were unable to cope with the amount of choices that had to be made. Students felt that they were not guided enough in the process of choosing what to spend their time on. Especially making choices in fields of no existing prior knowledge ended up being very time-consuming and sometimes frustrating/demotivating.

Furthermore, next to IRM and Improvisation (both during the first quartile), the students never had class together with everybody. Students missed being together as the whole class, which not only results in reduced cohesion as a

class, but also reduced the learning input we got in the semesters before due to the diversity of people we interacted with.

On top of that, students were not satisfied with the amount of contact hours they had with teachers. Even though lots of class was scheduled, often only 6 or less hours took place. There was almost no guided self-study. The semester coordinators were not aware of this. Even though education in ATLAS is student-led, contact hours are essential. This lack of contact hours also contributed to the aforementioned problem of class integration.

Moreover, the evidence possibilities were mostly large group assignments. In general, students enjoyed those assignments, but would have preferred a better mix of smaller, bigger, individual and group-based pieces of evidence. Having multiple smaller assignments also makes it possible for students to learn from the feedback they receive and implement it into their future work. As a consequence, the workload of the semester was not evenly spread. Mainly before the reach week, before winter break, and before the SER deadline, students were very busy. Even though the students themselves are mainly responsible for this, having more spread out evidence deadlines could have relaxed the situation.

To some extent, semester planning and reality didn't match. Often, the courses weren't equivalent to the ECs allocated for them. IRM was less than 5ECs, while the math courses (esp. SST) took up way more time than the 3 ECs planned. This made it hard for students to appropriately plan their semesters.

Last but not least, the feedback/assessment system often did not work out. Many teachers avoided portfolio or were unable to use it, which made it very hard for students to have overview over their evidence.

The fact that our class is very technical had a bad impact on the coherence of the semester. Due to the technical nature of the project topics chosen, IRM and Improvisation weren't useful for the project and creating interdisciplinary work was challenging.

Some students missed the inspiring lectures during the second quartile.

## Suggested solutions to problems

### **Students feeling unable to cope with the choices they can make**

- teachers should be encouraged to first introduce a topic before requiring students to make choices, teachers could give suggestions on project ideas

### **Not much class with the entire class of 2017**

- more guided self-study, more inspiring lectures, occasional project updates

### **Contact hours**

- more guided self-study

### **Few big group assignments**

- also have smaller assignments, and individual assignments

### **Workload**

- vary size and spread of assignments/deadlines

### **EC planning - reality mismatch**

- allocate more ECs for math or change course content, but students would prefer the first option

### **Feedback system/ portfolio**

- teachers should be encouraged to use portfolio, teacher's access to the system should be ensured at the beginning of the semester and not right before the SER deadline

### **Lack of coherence due to "technical" class**

- possibly move improvisation to the 2nd semester and reshuffle social science courses
- more interaction possible: e.g. SST and Empirical Evidence

*(Note: some of these problems are general ATLAS problems and don't only affect semester 3)*

## Agreements

- The Improvisation course has been moved to the 2<sup>nd</sup> semester because it fits better with the S2 project
- The extra EC (because Improvisation won't be part of S3) will probably be transferred to the math domain
- Empirical Evidence will provide students with a better theoretical foundation

- The idea developed to have (more) inspiring lectures not linked to the project also together with the other classes

## Project Mars Space Mission

created by: Valerie Lapp  
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year/semester: Semester 3, 2015, class of 2017  
project coordinator: Mieke Boon

### Summary of the project

The project's theme was "Mars Space mission - living at extreme conditions". The students were supposed to find (socio-technical) problems that potential Mars settlers could face and come up with solutions. The deliverable was an interdisciplinary research proposal. This was written in teams of 4 to 6 students that split up into sub-teams of two students. Each duo would write their own research proposal that combined would then add up to an interdisciplinary research.

The students got knowledge input and support by workshops given by Mieke Boon, a 5 EC elective, as well as two consultants per project group.

The assessment consisted of a one hour session where elective coordinators and assigned "assessors" of the ATLAS core team asked questions. After this, students received written feedback and had to write a "rebuttal" that addressed open questions or weaknesses of their proposals.

### EduCo criteria

<b>EduCo criteria</b>	<b>Mean</b>	<b>SD</b>
1. In the project, non-Dutch students were not put at a disadvantage	3.7	1.7
2. The ATLAS domains/courses that were taught in this semester could be integrated in this project	3.2	1.1
3. Tutors/consultants were informed about the project, and had relevant knowledge	3.1	1.6
4. Tutors/consultants were readily available/accessible for students	4.2	0.7
5. This project had a well-communicated and logical set-up	3.2	1.2
6. The students were provided with relevant information/knowledge that could be applied within the project	3.1	1.1
7. The project was based on a problem that includes both social and technical aspects	3.6	1.0
8. This project clearly stated which assumptions may be made by the students	2.7	1.1
9. The procedure for the project assessment was clear in advance	1.9	0.9

### Discussion

Overall, most students agree that the topic of the project provided lots of freedom for twisting the project into whichever direction we found most interesting. Students generally appreciated how much time was allocated for defining the topics and forming the groups. After initial misunderstandings (no justification report, really?), the deliverables were quite clear. Also, the three step structure (pre-proposal, draft proposal, final proposal) provided us with enough feedback moments.

However, there were also a few unclear/restrictive things. First of all, the requirement of relating the project to an existing research group at the UT was limiting, especially because there is no space-related research at the university. Furthermore, in the end, none of the groups actually made use of a research group, which made that initial requirement superfluous. Most student approached the teachers/coordinators of their elective for feedback or help. Even though most student very much enjoyed their elective, and learned a lot from it, there was a lot of confusion connected to it. It was unclear whose responsibility it is to contact the elective coordinators, how the elective gets assessed, how to put it in the SER, and what to do in case the students fail the exams of their electives. All in all, finding a research group, an expert, and an elective is very time consuming and provides students with little learning experience. Therefore, more guidance would have been appreciated to limit that time.

Furthermore, (a too big) part of the students did not find their consultants helpful. This is mainly due to the consultant's lack of understanding of the project topics. Also a discrepancy between consultant's feedback and feedback received after the assessment made some students doubt in how far expectations between consultants and assessors matched.

Finally, students appreciated the "real-world" nature of the assessment, but would have preferred to be informed about the rebuttal which now the students had to spontaneously fit into their schedules and time planning.

Due to the "technical" nature of our class, the research proposals were not truly interdisciplinary.

## Suggested solutions to problems

- Have clear guidelines for what happens if students fail their electives (this is ATLAS responsibility, of course)
- Make the process of finding electives clearer (what proved effective in S4: students contact elective coordinators, ATLAS organizes the enrollment and potential financial issues)
- More clarity on involvement of experts and research group. Since most groups did well this semester with simply asking elective teachers for help, we would suggest to make the research contact non-mandatory (also because some interests of students aren't covered by what the UT offers), but strongly advise students to look at and contact research groups for inspiration in the project topic definition phase.
- The exact set-up of the assessment should be communicated to the students prior to the assessment

## Agreements

The meeting with the project coordinator hasn't taken place yet.

## Engineering: Materials Science

created by: Sarah Schöttler

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year/semester: Semester 3, 2015, class of 2017

teacher: David Boy

### Summary of the course

The course Materials Science was taught in the first half of the semester. There were workshops on Tuesday and Wednesday afternoons. Students had to prepare for the sessions by studying the book (Engineering Materials, Ashby & Jones) and doing exercises on the chapters. Everyone had to do a group project, in which the group analysed an object from a materials science perspective and two pieces of individual evidence. The topics for the individual deepening could be freely chosen and for example be studying a chapter from the book in more detail or learning about a certain topic relating to materials science.

### EduCo semester survey

EduCo Criterion	Mean	SD
1. This course sufficiently conveyed both theoretical and applied knowledge	3.2	1.2
2. This course featured both group and individual work	4.3	1.0
3. During this course, students were provided with a sufficient level of guidance	2.1	0.9
4. For this course, there was a variety of possibilities to prove your competence	4.1	0.8
5. This course facilitated personalization	4.4	1.0
6. This course related to the semester project and other courses	2.3	0.7
7. This course allowed for an even distribution of the workload over time	3.1	0.9
8. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	1.9	0.7
9. Feedback given by the teacher(s) was complete, useful and timely	2.1	0.9
10. The teacher was sufficiently available for questions/feedback about the course	3.3	1.0
11. The teacher seriously takes students' feedback about the course into consideration	3.0	1.1
12. Sufficient knowledge input and support was given to reach the learning goals set for this course	2.9	1.0

### Discussion

Students appreciated the freedom this course provided: There was a good balance between group work and individual work and many different ways of providing evidence were accepted. By allowing students to choose their own topics, personalisation was easy to achieve.

Most students felt that there was too much self-study and too little knowledge input through the teacher. This would have been appreciated especially because materials science was an entirely new disciplines for most students.

Through the free structure, the workload could be distributed evenly, although this failed for most students.

Deadlines were perceived as either impossible to accomplish or not to be taken seriously, which led a majority of the class to fail handing in their evidence on time.

Main criticism was the lack of guidance: If a course offers as much freedom as this one, more guidance has to be provided in return. Although David took feedback about the course into consideration, changes in the course planning were communicated insufficiently. This is combination with providing feedback late, or not at all if students missed the deadline, generally caused a feeling of being a bit left alone with the course. Many students found the course website confusing and would have preferred Blackboard as a means of communication because it's not convenient to have multiple communication channels.

For most, the course did not relate well to the semester project, but since the choice of topic for both Materials Science and the project was free, this should not be considered a mistake in the course.

## Suggested solutions

### **Lack of input by teacher**

Give small lectures that summarize the main insights of the chapters that have been studied (similar to the engineering courses in the first year).

### **Lack of guidance**

It should always be considered that the more freedom a course offers, the more students will rely on guidance to make their decisions. Meetings to receive this guidance should not require prerequisites such as knowing your field of interest already, since most students will not be able to do this. Guidance should be provided independently from whether or not students know what interests them. Some sample project ideas could be made available for inspiration.

### **Lack of information**

Changes in the course schedule should be communicated to students instantly, including changes in deadlines and the overall planning. It should always be clear where up-to-date information can be found.

### **Insufficient feedback**

For this course, the specific problem was that a lot of students missed deadlines and at the same time, David did not have a lot of time to look at evidence since he was about to leave ATLAS. For similar situations in the future, this can be avoided if deadlines are clear from the beginning and the consequences for missing the deadline (e.g. not receiving feedback) are clarified as well.

## Agreements

We provided some general feedback about the course to David, but since he left ATLAS now and the questionnaire was sent out after he left, there are no specific agreements for the future, also since this course will be taught by someone else if it is taught again.

## Engineering: Empirical Evidence

created by: Sarah Schöttler  
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year/semester: Semester 3, 2015, class of 2017  
teacher: David Boy

### Summary of the course

Similar to MatSci, this course was very free and students could choose their own project to work on. The setup required students to choose a group and project they wanted to work on. The project had to include building something that they could collect empirical data with. Evidence was provided in the form of a write-up of the project. The specific format for this write-up could be freely chosen. Each group had a 20min consultancy session with David each week.

### EduCo semester survey

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	2.4	1.0
2. This course featured both group and individual work	1.9	1.2
3. During this course, students were provided with a sufficient level of guidance	2.8	1.2
4. For this course, there was a variety of possibilities to prove your competence	2.9	1.4
5. This course facilitated personalization	4.4	0.8
6. This course related to the semester project and other courses	3.0	3.4
7. This course allowed for an even distribution of the workload over time	3.4	0.9
8. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	3.4	1.0
9. Feedback given by the teacher(s) was complete, useful and timely	2.4	1.0
10. The teacher was sufficiently available for questions/feedback about the course	3.4	1.1
11. The teacher seriously takes students' feedback about the course into consideration	3.1	1.1
12. Sufficient knowledge input and support was given to reach the learning goals set for this course	2.7	1.1

### Discussion

Since the course only had one assignment, most people only worked in groups and thus did not have any individual evidence. Again, the possibility to personalise the course was appreciated by the students just like the possibility to distribute the workload as you wanted. During this course, a pool of predefined project was provided, which was appreciated by the students. The deadlines were communicated sufficiently clear. David provided guidance in weekly individual meetings with the groups and was available two afternoons per week, but there were no scheduled sessions with the whole class.

How much the course related to the rest of the semester was perceived very differently by the students: This is most likely because the choice of topic was free and some project topics were more suitable to connect an EEE project to than others.

The level of knowledge input was very low because there were no regular meetings other than the individual counseling sessions. David had planned some “mini lectures” initially, but they got cancelled.

## Suggested solutions

### **Low level of knowledge input**

The course should have regular (e.g. weekly) meeting with the whole class to update each other on the group’s progress and to provide some basic knowledge about Empirical Evidence.

### **No balance between group work and individual work**

Changing this would require changing the whole project-focused setup of the course and might not be necessary as long as there are other courses in the semester where students can work individually.

### **Feedback**

The low rating of the feedback for this course is mainly caused by David’s leaving directly after the deadline. If this situation is avoided in the future and teachers are available until the end of the semester they are teaching in, this will not be a problem again.

## Agreements

We provided some general feedback about the course to David, but since he left ATLAS now and the questionnaire was sent out after he left, there are no specific agreements for the future, also since this course will be taught by someone else if it is taught again.

## Mathematics: Signals, Systems & Transformations (SST)

created by: Mark van den Heuvel  
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 year/semester: Semester 3, 2015, class of 2017  
 teacher: Yorick Birkhölzer

### Summary of the course

The course of SST is about describing physical systems with a mathematical model with an input and an output. The course starts with looking at block diagrams (both discrete and continuous time), difference and differential equations and how to get these equations from a block diagram. Then the course looks at several methods and operations that can be used to get more information about the system and signals (e.g. unit impulse response, unit step response, system functional, system function, Laplace transform, Fourier transformation, Fourier series, Z-transformation, convolution, FFT in Matlab). Also feedback and control (e.g. PID-control) and filters have been discussed.

Classes provided during this course were one tutorial and one seminar every week. All students prepared for this seminar by watching online [MIT lectures](#). During the seminar one or multiple students would present about the topic of that week which they prepared more thoroughly than the other students. The tutorial offered the opportunity to ask questions on the practice exercises.

Together with a presentation, students also had to provide a summary of the topic. These summaries were bundled into one syllabus. Other study materials were recommended readings and problems provided by the teacher and the MIT Open Course Ware.

The deliverables for this course were a presentation, a summary of this presentation, at least one assignment demonstrating a fast Fourier transform (FFT) in Matlab, two diagnostic tests and a project that would be done during the final phase of the course. For extra evidence, the challenge problems provided by the teacher could be used.

### EduCo criteria

EduCo Criterion	Mean	SD
1. This course sufficiently conveyed both theoretical and applied knowledge	4.6	0.5
2. This course featured both group and individual work	4.6	0.5
3. During this course, students were provided with a sufficient level of guidance	4.3	0.8
4. For this course, there was a variety of possibilities to prove your competence	4.2	0.7
5. This course facilitated personalization	4.1	0.7
6. This course related to the semester project and other courses	3.8	1.1
7. This course allowed for an even distribution of the workload over time	3.3	1.4
8. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.1	0.7
9. Feedback given by the teacher(s) was complete, useful and timely	4.5	0.8
10. The teacher was sufficiently available for questions/feedback about the course	4.7	0.6
11. The teacher seriously takes students' feedback about the course into consideration	4.7	0.7

12. Sufficient knowledge input and support was given to reach the learning goals set for this course	4.7	0.7
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## Discussion

In general, students are happy with the way evidence could be collected (amount, individual-group ratio). Also the level of guidance and amount of theoretical and applied knowledge was good. How much the course was related to the rest of the semester and the distribution of workload over time scored lower.

One of the most frequently made remarks was that the workload was too much for the allocated 3ECs. However, students do not want to make this course shorter but instead allocated more ECs for it.

A few remarks were made that students who were doing well got more attention than people that still struggled with basic stuff.

The way the presentations were given was not always structured and efficient. Also, MIT lectures took very long and were unclear to some students that found alternative information sources much more helpful.

In general, students like to stress that they learned a lot and liked the course. What was perceived very well were the small “inspiring lectures” by students about how they used SST knowledge for their later courses and projects.

## Suggested solutions

Attention could be paid to an equal attention distribution amongst the students.

During presentations, the teacher could step in earlier to clarify or further explain the topic or help preparing the student’s presentation to achieve more efficient learning in class. This would make classes more efficient.

The lengthy MIT lectures could be replaced by better (shorter) sources available on for example youtube, which would result in a more efficient working style. Also, replacing these online lectures by lectures by the real teacher could be considered. This might all contribute to putting more knowledge into the 3EC’s of the course.

## Agreements

Meeting with teacher hasn’t taken place yet.

## Mathematics: Artificial Intelligence (AI)

created by: Mark van den Heuvel & Sarah Schöttler

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year/semester: Semester 3, 2015, class of 2017

teacher: Ruud van Damme

### Summary of the course

Materials used in the course were lectures from MIT OCW ([link](#)) and a book (Patrick Henry Winston, Artificial Intelligence, Third Edition). Students summarised the lectures and gave short presentations about them in the weekly class. During this more theoretical part of the course, students did not hand anything in. For the second part of the course, a project had to be chosen and carried out. The result of this project, often containing programming, was the only evidence students handed in for this course.

Changes were made during the course, for example that students requested to have more guidance in programming, which was provided.

### EduCo criteria

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	3.6	1.1
2. This course featured both group and individual work	3.2	1.1
3. During this course, students were provided with a sufficient level of guidance	2.9	1.0
4. For this course, there was a variety of possibilities to prove your competence	2.5	1.4
5. This course facilitated personalization	4.4	0.5
6. This course related to the semester project and other courses	3.3	0.9
7. This course allowed for an even distribution of the workload over time	3.4	1.0
8. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	2.7	0.9
9. Feedback given by the teacher(s) was complete, useful and timely	3.7	0.8
10. The teacher was sufficiently available for questions/feedback about the course	3.9	0.7
11. The teacher seriously takes students' feedback about the course into consideration	4.2	0.7
12. Sufficient knowledge input and support was given to reach the learning goals set for this course	3.1	0.7

### Discussion

What students appreciated about the course was that it could be personalised easily and that Ruud and Nick were always available for questions. Students also agree that feedback about the course was taken into consideration. The communication about the course setup was not very good. Additionally, students did not feel well-guided, probably because the first part of the course consisted mainly of watching lectures and there were no assignments or ways to check your progress. Another point of criticism was that there was only one way to give evidence of your learning (the final project).

Students also remarked that they did not take the course seriously in the beginning because there was no practical application of the material. The student presentations were often of poor quality, but also the MIT lectures themselves were less than great.

Some would have liked to be pushed more to decide on either SST or AI, but it was also appreciated that the final projects of the two courses could be combined.

## Suggested solutions

### **Teaching materials**

It should definitely be taken into consideration to switch the teaching materials. The MIT lectures were found boring by most people and while the book went more into depth, it did not really help to make it more interesting.

### **Few possibilities for evidence**

There should be more possibilities to give evidence and check your progress during the course. This would also have helped some to “take the course more seriously” in the beginning.

## Agreements

Meeting with teacher hasn't taken place yet.

## Social Sciences: Interdisciplinary Research Methodology

created by: Chaja Hudepol

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year/semester: Semester 3, 2015, class of 2017

teacher: Bernard Veldkamp, (Klaasjan Visscher)

### Summary of the course

During the Interdisciplinary Research Methodology course we had a set of seven lectures and five seminars, during which we learned about the methods that one can use while doing research, mostly applicable to the social sciences. Before the lectures, chapters from the book “Social Research Methods” had to be read, and the topics from these chapters were addressed in the lectures. The topics that were mostly addressed were the various aspects of reliability and validity of research. The knowledge of the students was tested using a multiple-choice test about the theory. For this test the students received a grade that represented their percentage of correct answers. This grade would be 20% of the final grade.

A second evidence hand in was a questionnaire about perseverance, which couples of students had to make, and reflect on in terms of reliability and validity threads. This would again be 20% of the final grade.

The seminars were meant to broaden the horizon of what types of research are possible, and where research methodology would come in. To relate this to the project, the project teams had to write a reflection on a set of seminars and how they apply to the project. This two-page reflection would then finally be 60% of the final grade.

### EduCo criteria

EduCo Criterion	Score	SD
1. This course sufficiently conveyed both theoretical and applied knowledge	3.8	0.9
2. This course featured both group and individual work	3.3	1.1
3. During this course, students were provided with a sufficient level of guidance	3.4	1.1
4. For this course, there was a variety of possibilities to prove your competence	2.9	1.4
5. This course facilitated personalization	2.3	1.1
6. This course related to the semester project and other courses	3.1	1.2
7. This course allowed for an even distribution of the workload over time	4.2	0.8
8. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	3.3	0.9
9. Feedback given by the teacher(s) was complete, useful and timely	3.3	1.2
10. The teacher was sufficiently available for questions/feedback about the course	3.6	0.8
11. The teacher seriously takes students' feedback about the course into consideration	3.7	0.7
12. Sufficient knowledge input and support was given to reach the learning goals set for this course	4.1	0.6

## Discussion

Overall, students were quite satisfied with the course. The amount of both theoretical and applied knowledge conveyed, the distribution of workload, the availability of the teacher, the reachability of the learning goals, and the way the teacher took into account feedback from the students were all points the course scored high on.

Points that the opinions differed a lot on are the balance between individual- and group work, the level of guidance, the applicability to the project, the timeliness and quality of the feedback, and the communication about learning goals. Points that the students felt dissatisfied about are the variety of possibilities for evidence, and the ability to personalise the course.

So overall the course set-up was good, with a spread workload and good balance between types of knowledge, however the personalisation and communication (about the planning of the course and the deadlines) is something that could still improve. Also the applicability to the project was a point of criticism, as the course focused mostly on the social sciences, and hardly on the technical research.

## Suggested solutions to problems and agreements

The EduCo had a meeting with Bernard Veldkamp, the teacher of this course. In this meeting we discussed the feedback that had been given about the course, and afterwards looked at how the course could improve.

The positive feedback that we conveyed to Bernard was that the workload was well-spread, and that it was good that we first received information, before we were asked to apply it. Also we informed Bernard that most students were very satisfied with the course.

The course overall could be made more flexible, and therefore more ATLAS-like. This could be done by giving the students more freedom when choosing their assignments, and giving them more evidence options, and by not assigning percentages to the evidence. Another way to make the course less firm would be by making the lectures more interactive, for example by letting the students work on the research tool during part of the lectures. Additionally, the test was not very well received by the students, because it is again not very ATLAS-like, and could be replaced by either an assignment in which students show their knowledge, or an optional, diagnostic test that does not immediately count as part of your evidence.

The personalisation of assignments could be improved by giving students the option to choose their own topic about which they want to develop a questionnaire, or give a set of options that students can choose from.

Communication could be improved by informing the class at the beginning of the course about the set-up, learning goals, possible evidence, etc.

Other constructive feedback that we gave Bernard was that there was little connection between the course and the technical projects. This could be improved by making the course more about technical research, and less specifically about research in the social sciences, and especially stressing the interdisciplinarity part.

Lastly we informed Bernard that the class felt that the SPSS course was not very useful, and that it would be best to either take it out, or make it a bigger part by letting students apply it in an assignment.

One point that we informed Bernard about, but what was not necessarily a problem or something that could be improved is that most students did not spend the amount of time on the course that was assigned to it. This was mostly because the mathematics SST course took more time than expected, and this resulted in students spending less time on IRM.

## Learning Line Interdisciplinarity

created by: Sebastiaan Koppen  
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year/semester: Semester 3, 2015, class of 2017  
learning line coordinator: Mieke Boon

### Summary of the LL

This semester Mieke Boon was responsible for the learning line interdisciplinarity. The learning line was mainly settled in the semester project, as the research proposal should contain different disciplines that via interdisciplinarity helped working on one problem. A series of workshops was given on Monday mornings about amongst other things interdisciplinarity. Furthermore the course Interdisciplinary Research Methodology was given.

The evidence for the learning line was the same as research: reflect on it (in your SER).

### Discussion

The feedback on interdisciplinarity from students is varying a lot. Most students say that after the semester they have a general understanding on interdisciplinarity and think there was sufficient reading material on blackboard. The amount of reading material on blackboard however was so high that students sometimes weren't sure about which document to read and which not. Other students said that interdisciplinarity is still very vague to them. Interdisciplinarity in the project did not always work out as well as planned, as students choose mainly technical subjects and did not use many different disciplines. Another point of feedback that several students gave was the fact that the workshops were given on Monday morning. This caused that students sometimes found it hard to pay sufficient attention.

### Suggested solutions to problems

Students indicated that it would have been nice to have a few more practical exercises on interdisciplinarity throughout the semester (possibly with the B&K model?). It might be an option not to give the workshops on Monday morning.

### Agreements

The meeting with the teacher hasn't taken place yet.

## Learning Line Research

created by: Sebastiaan Koppen

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year/semester: Semester 3, 2015, class of 2017

learning line coordinators: Fokko-Jan Dijksterhuis and Martin van der Hoef

### Summary of the LL

Responsible for the research learning line this semester were Fokko-Jan and Martin, who gave one workshop on the topic. Furthermore research was heavily implemented in the project and the course Interdisciplinary Research Methodology. On top of that, the course on improvisation and theatrical simulation showed a specific way to conduct research. For this reason students did also not have to hand in any evidence for this learning line but instead reflected on it in their SER. In conclusion: there was not much specific attention for research, but instead it was spread out over courses and the semester project.

### Discussion

Feedback from the students on this learning line was mainly positive. The explicit implementation in the project allowed for many learning opportunities. Students, however, also mentioned that it would have been nice to have a few more workshops on the topic. During the project there were several problems with students forgetting/ not knowing parts of research, which was a problem since the goal of the project was to write a research proposal. Some more guiding throughout the semester could have helped preventing this and would have resulted in the students having to spend less time on finding things about research out by themselves. A specific thing that was mentioned by several students was modelling. They felt like they lacked this skill and found out (way) too late that it was important for the project to make a proper model. Students enjoyed that fact that the learning line sessions allowed for open discussion.

### Suggested solutions to problems

A suggestion for “next time” would be to organize a few more workshops throughout the semester where the different steps of writing a research proposal/ conducting a research are explained and maybe one or more workshops on modelling.

### Agreements

The meeting with the teachers hasn't taken place yet.

## Improvisation & Theatrical Simulation

created by: Chaja Hudepol

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year/semester: Semester 3, 2015, class of 2017

teachers: Gijs van Bilsen and Moes Wagenaar

### Summary of the LL

The improvisation course consisted of seven classes of two hours, during which the students did several theatrical exercises, and made a theatrical simulation that would apply to their project. The classes were divided in two parts; firstly the students were asked to do some improvisation exercises, and secondly the students would be divided in two groups, with per group two project groups which would play each-other's simulation. After the classes the groups would improve their simulation with theory given during the classes, or based on the experiences of letting the other group act out the simulation. Later the teachers would also give explain some theory about theatrical simulation in between the two parts of the course.

During the last class, all the simulations were played, and a last round of feedback and improvements was made before the simulations were handed in as evidence. The students later received feedback on their individual performance during the classes, and on the simulation they produced.

### Discussion

In the questionnaire there was only one open question about improvisation, in which students could say how they experienced the course, and could give feedback. The reactions to the course are mixed, some felt the course was useless and disliked it, but most found it fun to do, not because they learned a lot but because it was a moment to relax and be together with the whole class, and touch upon a new research tool.

Points that could still improve were the connection to the project, as this research tool is mostly applicable to social sciences, and most projects were technical. The other point of improvement was that the Learning goals and course set-up could have been presented at the start of the course.

### Suggested solutions to problems and agreements

The EduCo had a meeting with the teachers halfway through the semester, to give feedback on how the course was going, and suggest improvements. Most points addressed during this meeting were immediately implemented and changed in the course, such as the amount of theory, the availability of learning goals, the feedback (now also written feedback), the connection with the project (by moving it to semester two), and the 'rules' about attendance and evidence (which differed per teacher). After this meeting there was no further contact between the EduCo and the teachers.