

# Semester Documentation

## Semester 2 – Class of 2021

### **EduCo of 2021**

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## Introduction

This EduCo semester documentation contains all feedback and evaluations gathered by EduCo 2021 throughout semester two. This entails ATLAS domain courses, the semester project, ATLAS and non-ATLAS elective courses, as well as the semester as a whole. The information within this document was collected by EduCo 2021 at two feedback sessions and through two surveys. This document has been compiled by the members of EduCo 2021 in the academic year 2018/2019.

Each evaluation provides a summary of the course, an overall evaluation of the course, the conclusions of the semester documentation survey, a comparison with the previous year, and the suggestions from EduCo 2021 for the teachers and the agreements made with teachers for addressing these suggestions.

During the second semester, students must choose and take 9 ECs of elective courses. This gives them the freedom to choose non-ATLAS courses, as well. For elective courses not taught by ATLAS instructors, EduCo is not responsible for reaching out to these instructors with the feedback. Thus this section is left blank.

## Innovation in Business and Society

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*Date and Place of Writing:* 12 July 2019, Enschede

*Teachers:* Fokko Jan Dijksterhuis, Klaasjan Visscher, and Ardion Beldad

### Summary of the Course

The course Innovation in Business and Society discusses how innovations are embedded in organizations and society, which factors influence the paths of innovations, and how this can be organized, communicated and governed. Besides specific concepts and theories, the course introduces you to the way such issues are analyzed in social science by taking a close and critical look at academic papers.

Five cases are done as group work and two close readings are made as an individual.

The cases introduce you to various approaches and perspectives on the dynamics of innovation in business and society, while the close readings aim at introducing you to the ways of reasoning in the social sciences.

### Overall Perception of the Course by Students

The overall perception can be described as very fluctuating. The students mention that it highly depended on the teacher and whether it was a case or a close reading. The students liked the close readings, however the feedback given on them per teacher differed a lot. They experienced that the readings were assessed differently per teacher and therefore could also not see the learning curve. Also, for the readings the deadlines were different per teacher which led to confusion.

The students enjoyed the first cases, however did not understand the linkages between them and would have liked to get more information beforehand to go deeper by means of the case itself.

### Statistics Semester Documentation Survey

*N = 11, scale: 1 (never) – 5 (always)*

EduCo Criterion	Mean	SD
1. This course sufficiently conveyed both theoretical and applied knowledge.	3.5	0.934
2. This course featured both group and individual work.	3.6	1.027
3. During this course, students were provided with a sufficient level of	3.5	0.934

guidance.		
4. For this course, there was a variety of possibilities to prove your competence.	3.4	0.924
5. This course facilitated personalization.	3.5	0.688
6. This course related to the semester project and other courses.	3.9	0.944
7. The course material was useful and relevant.	3.7	1.104
8. This course allowed for an even distribution of the workload over time.	3.8	1.401
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	3.6	1.120
10. Feedback given by the teachers was complete, useful and timely.	3.5	0.934
11. The teachers were sufficiently available for questions/feedback about the course.	3.7	1.009
12. The teachers seriously took students' feedback about the course into consideration.	3.7	1.009
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	3.8	0.603
14. The teachers taught the course in an engaging and effective way.	3.5	0.688
15. The format of the course was engaging and conducive to learning the course material.	3.4	1.027

### Other Remarks from the Survey

### Comparison with Previous Year

Compared to last year, the scores on the course have been graded lower than the former year, especially on point 1, 2, 4 and 6.

### Suggestions from EduCo

First of all, which has been mentioned as the most concerning is overcoming the inconsistencies between teachers regarding their feedback. This could be overcome by making

a standardized rubric but also still give and encourage the teachers to make personalised comments. This could be realised by agreeing on the aspects that need to be given feedback on and structuring them.

Another improvement would be to set all deadlines for the close readings for each different teachers on one date. According to the students, having different deadlines which kept on being moved caused for confusion.

Lastly, cases need to go more in depth and need to be tied together. At the moment, some stayed quite simplistic. This could be accomplished by giving some more background information to stimulate some curiosity to go deeper. Also, the students suggested to give a concluding session on the cases to discuss the bigger picture.

### **Agreements with Teachers**

No agreements have yet been made.

## Thermodynamics

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*Date and Place of Writing:* 06 July 2019, Enschede

*Teachers:* Martin van der Hoef

### Summary of the Course

Thermodynamics, mainly deals with the two basic forms of energy: heat and work, and how they can be converted into each other. This course is the continuation of Fluid and Heat with concepts like work and entropy. Students will learn how all processes are dictated by the first law (energy is conserved) and second law (entropy is maximized). This knowledge will be applied to understand the basic operation of heat engines, refrigerators and heat pumps.

### Overall Perception of the Course by Students

Overall the students liked the course, which was partly due to Martin van der Hoef's feedback being insightful and clear as students stated. Additionally, the assignments were perceived as good and fair, questioning mainly what one can find in the lectures. Lastly, a few minor complaints were made, some said they preferred the structure of Fluid and Heat, although others think otherwise.

### Statistics Semester Documentation Survey

*N = 11, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	3.81	0.75
2. This course featured both group and individual work.	3.45	0.93
3. During this course, students were provided with a sufficient level of guidance.	4.45	0.69
4. For this course, there was a variety of possibilities to prove your competence.	3.63	1,12
5. This course facilitated personalization.	2.58	0.79
6. This course related to the semester project and other courses.	2.09	0.70
7. The course material was useful and relevant.	3.54	0.93

8. This course allowed for an even distribution of the workload over time.	4,18	0.75
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	4.36	0.50
10. Feedback given by the teacher was complete, useful and timely.	4.27	0.79
11. The teacher was sufficiently available for questions/feedback about the course.	4.27	0.64
12. The teacher seriously took students' feedback about the course into consideration.	4.00	0.47
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	3.45	0.82
14. The teacher taught the course in an engaging and effective way.	3.73	0.77
15. The format of the course was engaging and conducive to learning the course material.	4.54	0.93

### Other Remarks from the Survey

The following two remarks were made:

The lectures were too intense theory wise and should have been spread out more. Or been a bit further from each other.

He could have given maybe some more applied examples during the lectures. It was mainly quite theoretical and just formulas about engines.

### Comparison with Previous Year

Although some agree and others disagree, it was mentioned by more students that they preferred the system from the previous year, where the structure was lecture, assignment, lecture and assignment again, whereas this semester the structure was: first all the lectures and then all the assignments. This was perceived as rushed and harder to keep up with, as the lectures build on to each other, hence, if one lecture is not well understood the upcoming lecture will be even harder to keep up with.

### Suggestions from EduCo

The main point to take away from this is maybe looking into adjusting the structure of the lecture and assignment pattern, as it seemed that more students preferred the alternating style. Two other minor points were that an assignment if declared open, should be open and not sort of

open, which it felt like. As Martin seemed to nonetheless have certain expectations, that were not very clear for some.

**Agreements with Teachers**

No response was received yet.

## Mathematics (All modules)

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*Date and Place of Writing:* 06 July 2019, Enschede

*Teachers:* Martin Streng, Ruud van Damme, Maïke de Jongh (TA), and Yorick Birkhölzer

### Summary of the Course

The course mathematics of this semester consisted of seven modules students could choose from, where the minimum amount of modules was three. Most modules were a continuation of Calculus from the first semester, and one was a continuation of Linear Algebra from the first semester. The material could therefore be found in the book “Calculus, early transcendentals”, by Stewart, 8th edition, and (for module D) in “Linear Algebra, A modern introduction” by Poole, 4th edition. Each module included a lecture, an optional homework set, a discussion of this homework and a take-home exam used for assessment. The modules were named after the topics they respectively covered, namely:

- A. 1st and 2nd order Ordinary Differential Equations
- B. Introduction to functions of more than one variable
- C. Multidimensional integration
- D. Eigenvalues and Eigenvectors
- E. Coordinate transformations and curvilinear coordinates
- F. Multidimensional optimization
- G. Introduction to Fourier series

As a last module, vector calculus was included, taught by Ruud van Damme, but this will be discussed as a separate elective.

### Overall Perception of the Course by Students

The course topics were interesting and challenging to the students, however many felt like there was not enough time to practice with the new concepts. Due to the large amount of deadlines, many had no time to do the optional practice exercises and purely focussed on the take-home exams. The lectures were appreciated, but the discussion sessions were rarely used, because students felt they had no time to prepare for those.

### Statistics Semester Documentation Survey

*N = 6, scale: 1 (never) – 5 (always)*

EduCo Criterion	Mean	SD
1. This course sufficiently conveyed both theoretical and applied knowledge.	3,17	0,983

2. This course featured both group and individual work.	1,83	0,753
3. During this course, students were provided with a sufficient level of guidance.	3,17	1,17
4. For this course, there was a variety of possibilities to prove your competence.	2,67	0,816
5. This course facilitated personalization.	3	1,26
6. This course related to the semester project and other courses.	1,5	0,548
7. The course material was useful and relevant.	3,67	0,817
8. This course allowed for an even distribution of the workload over time.	3,5	1,22
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	3,67	0,517
10. Feedback given by the teachers was complete, useful and timely.	3	1,10
11. The teachers were sufficiently available for questions/feedback about the course.	4,4	0,548
12. The teachers seriously took students' feedback about the course into consideration.	4,2	1,30
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	4	1,10
14. The teachers taught the course in an engaging and effective way.	2,5	0,548
15. The format of the course was engaging and conducive to learning the course material.	2,67	0,816

### Other Remarks from the Survey

#### General:

In the survey a student mentioned that they did not like the set-up of the modules, mainly because of the take-home exams. Some of these consisted of only one exercise, which in their opinion would not give a good overview of the capacities of a student. Another point that was brought up was on a more practical level, namely the question to schedule classes in the calendar correctly. Instead of the general scheduling of all classes with the title 'mathematics', it

would be easier for students to have the actual classes of the modules they followed clearly indicated. The last general comment was related to video lectures: some students said they would have liked all modules to have these video lectures.

Teacher-specific:

In the comments, students stated to have enjoyed the lectures from all teachers. Martin was clear and able to answer all questions. For Martins feedback, some stated they would have liked feedback specifically on dimensions other than just the correctness of the solutions.

Maike was appreciated as a TA, although she went too fast for some and got the feedback to give more time to let things sink in or get written down between her explanations.

Finally, Yorick was more thorough and clear than last semester, the students liked his lecture.

### **Comparison with Previous Year**

In the previous year, the mathematics topics were similar, but not split up into multiple modules like this year. The course had three take-home exams of increasing difficulty, instead of a take-home exam per module. Students could also decide on the number of assignments and their deadlines last year, and in this way create the structure of the course together with Martin. This year, we saw a lot more struggles with the planned deadlines.

### **Suggestions from EduCo**

Our main suggestion is to spread the mathematics topic out over the full semester, instead of putting them all in the second half. Although students asked for more deadlines, we as EduCo feel like this would not help, especially if the course is put in such a limited timespan.

### **Agreements with Teachers**

The teachers have been made aware of their feedback. No specific agreements have been made, though the teachers mentioned to keep our points in mind for next year.

## Semester Project

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*Date and Place of Writing:* 06 July 2019, Enschede

*Teachers:* Klaasjan Visscher

### Summary of the Project

The semester two project focussed on emerging technologies that promise to contribute to the transition towards a more sustainable energy system. Students explored different disciplinary and societal perspectives to understand the technology, and the knowledge, values and interests underlying it. They integrated perspective in socio technical scenarios, built upon an analysis of the current state-of-the-art and containing alternative trajectories for further developing the emerging technology and its embedding in society. Lastly, students designed concrete short-term plans for advancing the new technology in a specific region or locality, and critically reflected on how these plans affect and are affected by different stakeholder groups.

### Overall Perception of the Project by Students

There are multiple improvements that can be made according to students, to begin with the overall planning. At the start of the project, the precise content of the deliverables was unknown to students, this caused students to work without a clear direction and understanding of the bigger picture. On top of that, the theory needed for each deliverable arrived too late. To solve these issues, teams talked to their supervisors, who were also in the dark about the direction the students needed to work towards. The only platform of communication that created clarity was the chair meetings with the semester coordinator.

The freedom that the students were given during this project, was appreciated, because each student was able to personalise the project with this freedom. Nevertheless, students would have preferred a bit more guidance on the decision making, for example by playing the devil's advocate.

### Statistics Semester Documentation Survey

*N = 6, scale: 1 (never) – 5 (always)*

EduCo Criterion	Mean	SD
1. In the project non-Dutch students were not put at a disadvantage.	3.00	0.89
2. All ATLAS domains/courses that were taught in this semester could be integrated in this project.	2.33	0.42

3. Tutors were informed about the project, and had relevant knowledge.	2.67	0.47
4. Tutors were readily available/accessible for students.	2.83	1.07
5. This project had a well-communicated and logical set-up.	2.83	1.21
6. The students were provided with relevant information/knowledge that could be readily applied within the project.	2.83	0.69
7. The project was based on a problem that includes both social and technical aspects.	4.67	0.47
8. This project clearly stated which assumptions may be made by the students.	3.00	0.58
9. The procedure for project assessment was clear in advance.	3.50	0.50

### Other Remarks from the Survey

The supervisors did not seem to know what was going on, which created more confusion in the teams. On top of that, the supervisors were not on the same page, you heard different stories from different supervisors. Lastly, some supervisors were not accessible, due to other responsibilities happening at the same time.

The formation of the groups was a bit chaotic, it should be taken into account that when students read they are able to form their own groups, that they won't wait until the start of the academic year.

### Comparison with Previous Year

The problems with the uninformed supervisors were still the same compared to last year. But there were also improvements compared to last year, namely the number of presentations was good, and the fact that we did not need to make a documentary was good. Lastly, the idea for group formation based upon interests was initiated, but did not work out, due to students forming their own groups beforehand.

### Suggestions from EduCo

- Make sure to have the content related information ready on time, preferable at the beginning of the project and otherwise after the deadline of the previous deliverable.
- Make sure the theory is timely discussed in class by experts or uploaded to CANVAS, preferably with examples.
- Keep the chair meetings, since it was the perfect platform to discuss any questions related to the content of deliverables, and any group dynamic issues.

- Inform supervisors timely on the content of the deliverables, and ensure they are all on the same page.
- The group formation process needs rethinking. Either say that students need to form their own groups by themselves before the start of the project, without any other remarks. Or, the supervisors/semester -/project coordinators make the groups, or something else, but don't do either half half, because that won't work.
- Keep the increased freedom the students had, this way students are able to personalise the project further. But, make sure that expectations are clear, this can be done by having detailed information ready before the start of each deliverable.
- Try to have all the information ready at the start of the project, that way the chairs are able to plan ahead and get more out of their team members and the project.

**Agreements with Teachers**

No agreements have yet been made.

## ATLAS – Electives

Students were able to partake in electives in the first and second quartile.

### *Programming (Eldi)*

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*Date and Place of Writing:* 06 July 2019, Enschede

*Quartile:* 2B

*Osiris Course Code:* 201800451

*Credits:* 3.0 EC

*Teacher:* Ruud van Damme

*Teacher Assistant:* Elena Dalova

### **Summary of the Course**

This course was an introductory course to programming, specifically the Python language. This course was also set as a small introduction to the Machine Learning course. The course typically contained a working session every Wednesday morning, where students are able to work on that week's assignment while also have the opportunity to ask Ruud van Damme for help and guidance.

### **Overall Perception of the Course by Students**

Overall, the students perceive the course as very helpful in terms of providing the necessary knowledge in coding and programming. The use of the Python script for this course was also very useful in understanding the different applications of programming. The students believe that the course was delivered with enough content and that the teacher did take enough time to aid students throughout the course. However, the high frequency of mathematical rather than practical questions in the assignments did not allow for students to go to their full potential in understanding programming and its applications.

### **Statistics Semester Documentation Survey**

*N = 4, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	4.0	0
2. This course featured both group and individual work.	4.25	0.19

3. During this course, students were provided with a sufficient level of guidance.	4.50	1.25
4. For this course, there was a variety of possibilities to prove your competence.	4.25	0.19
5. This course facilitated personalization.	3.75	0.19
6. This course related to the semester project and other courses.	2.25	0.44
7. The course material was useful and relevant.	3.75	0.19
8. This course allowed for an even distribution of the workload over time.	3.25	0.69
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	2.50	1.25
10. Feedback given by the teacher was complete, useful and timely.	3.75	1.06
11. The teacher was sufficiently available for questions/feedback about the course.	4.00	0
12. The teacher seriously took students' feedback about the course into consideration.	3.50	0.25
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	3.75	1.19
14. The teacher taught the course in an engaging and effective way.	2.50	0.69
15. The format of the course was engaging and conducive to learning the course material.	3.25	0.69

### Other Remarks from the Survey

Students also remarked that the course would have been better if there were more explanations and theory provided by the teacher at the beginning. This was due to the fact the course seemed to be at quite a high level. A suggestion raised was to resort to a textbook-based course.

### Comparison with Previous Year

In comparison to the previous year, the standard for the course content and delivery was similar in fashion. The addition of a teacher assistant really helped in moments where the teacher was

unavailable to provide guidance. However, the frequent postponement of deadlines for assignments provided a struggle for students to keep up with the course. Furthermore, due to the frequent mathematical questions within the assignments, this was a point of concern that was not present in the previous year.

### **Suggestions from EduCo**

The level of guidance provided by the teacher is adequate and seeing as the teacher encouraged the students to take part in discussions was an added benefit, which EduCo looks to improve. To improve on the course, the reduction of mathematical questions with an added emphasis on practical questions, such as those pertaining to engineering or data manipulation, would have helped students much more. This would also insight the students' for the course even further. Another point of improvement is for the teacher to provide instructions and clearer guidance for students who are going into the course with no background knowledge. This would help these types of students to transition themselves and catch up with the course's progress much more easily.

### **Agreements with Teachers**

No agreements have yet been made.

*Innovation Dynamics*

Created by: Lisa Veldman

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Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2B

Osiris Course Code: 201700337

Credits: 3.0 EC

Teachers: Fokko Jan Dijksterhuis, Klaasjan Visscher, and Ardion Beldad

**Summary of the Course**

This course is a deepening of Innovation in Business and Society. Students took a closer look at how innovative processes coevolve with organizational, societal, and cultural environments. It offered students the opportunity to set out a case study, theoretical inquiry, or intervention plan on a topic and from a perspective of their own choice. This course offers a further development of students' literacy in social science, in particular the way societal and organizational aspects are studied.

**Overall Perception of the Course by Students**

It did not really feel like a course, since there was not much to it. There was guidance, but for the set-up of the course, there was not much guidance needed. Students did not really feel like they had learned something. The course had more potential than it had achieved.

**Statistics Semester Documentation Survey**

*N = 1, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	2	/
2. This course featured both group and individual work.	2	/
3. During this course, students were provided with a sufficient level of guidance.	2	/
4. For this course, there was a variety of possibilities to prove your competence.	3	/
5. This course facilitated personalization.	4	/

6. This course related to the semester project and other courses.	2	/
7. The course material was useful and relevant.	2	/
8. This course allowed for an even distribution of the workload over time.	3	/
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	3	/
10. Feedback given by the teachers was complete, useful and timely.	4	/
11. The teachers were sufficiently available for questions/feedback about the course.	4	/
12. The teachers seriously took students' feedback about the course into consideration.	3	/
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	3	/
14. The teachers taught the course in an engaging and effective way.	2	/
15. The format of the course was engaging and conducive to learning the course material.	2	/

### Other Remarks from the Survey

None

### Comparison with Previous Year

There is no documentation on this course from last year.

### Suggestions from EduCo

- If the set-up does not change, which we don't advice, then offer the course also in other quartiles. It is only writing one paper, which can easily be done whenever. By offering it in other quartiles you give students more flexibility.
- Change the set-up of the course, try to invite inspirational speakers to talk about innovation, and try to incorporate lectures to teach students. The end assessment was okay/fine, but make sure that the course itself becomes more interesting.

### Agreements with Teachers

No agreements have yet been made.

*Vector Calculus*

Created by: Maike Strijker

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Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2B

Osiris Course Code: 201800456

Credits: 3 EC

Teacher: Ruud van Damme

**Summary of the Course**

This 3 EC course was an introductory course on Vector Calculus and covered material from the book “Calculus, early transcendentals”, by Stewart, 8th edition. The course covered concepts such as coordinate systems, vectors, dot and cross products, vector functions, curves, line integrals, nabla and integral theorems (the first couple of these had already been introduced in the mathematics modules). There were three weekly lectures with attached working/question hours, and three take-home exams due one week after the related lecture, just before the next working hours. Because of difficulties with this pace and to add one more possibility for asking questions, the first two deadlines were moved one or two days (to the end of the week) instead of the Wednesday of the next lecture.

**Overall Perception of the Course by Students**

The students liked the idea of this course, but it seemed too unstructured. The take-home exams were described as ‘nice’ and students were happy there was a buildup in these.

**Statistics Semester Documentation Survey**

*N = 2, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	3,5	0,707
2. This course featured both group and individual work.	3,5	0,707
3. During this course, students were provided with a sufficient level of guidance.	2,5	0,707
4. For this course, there was a variety of possibilities to prove your competence.	3	0

5. This course facilitated personalization.	2,5	0,707
6. This course related to the semester project and other courses.	2	0
7. The course material was useful and relevant.	3,5	2,12
8. This course allowed for an even distribution of the workload over time.	3	1,41
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	4	0
10. Feedback given by the teachers was complete, useful and timely.	3,5	0,707
11. The teachers were sufficiently available for questions/feedback about the course.	3,5	0,707
12. The teachers seriously took students' feedback about the course into consideration.	2	-
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	3,5	0,707
14. The teachers taught the course in an engaging and effective way.	2,5	0,707
15. The format of the course was engaging and conducive to learning the course material.	2,5	0,707

### Other Remarks from the Survey

One student noted some assignments were too difficult for first year students. Another noted the main problem was the fact that the course was fit into 3 weeks, where there were already other deadlines. This made it difficult to get a good grasp on the topics.

### Comparison with Previous Year

The previous year, Vector Calculus was not an Atlas elective, so there is no comparison possible.

### Suggestions from EduCo

Similar to the mathematics modules, we suggest to spread out this course a little more. We expect the take-home exams will be more doable when students get more time to practice and ask questions.

### Agreements with Teachers

Ruud has agreed with the feedback, and stated that the biggest problem for this course was the fact that he had to cover the material in only three weeks. He has stated to believe the solution for vector calculus and mathematics modules is not to increase the amount of deadlines, as that could very well make things worse.

## Lasers

Created by: Vincent Wolf

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Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2B

Osiris Course Code: 201800454

Credits: 3 EC

Teachers: Jose Alvarez Chavez

### Summary of the Course

The following points list the courses contents:

- Fundamentals of lasers: history, concepts, materials
- Types of lasers
- Theory and background: Schrodinger ave equation, Einsteins rate equations, basic math
- Rare earth-doped fibre lasers: Nd, Yb, Pr, Er, Tm Ho -doped and its applications
- Design of a laser application in: science, medicine, telecomm, material processing, etc
- Project: in teams we will develop a laser for the designed application

### Overall Perception of the Course by Students

The course was liked by students, it seemed to be an interesting course overall. However, few took it and only one student who took the course came to the feedback session and no one who answered the survey took Lasers.

### Statistics Semester Documentation Survey

*N = 0, scale: 1 (never) – 5 (always)*

EduCo Criterion	Mean	SD
1. This course sufficiently conveyed both theoretical and applied knowledge.	N.A.	N.A.
2. This course featured both group and individual work.	N.A.	N.A.
3. During this course, students were provided with a sufficient level of guidance.	N.A.	N.A.
4. For this course, there was a variety of possibilities to prove your competence.	N.A.	N.A.

5. This course facilitated personalization.	N.A.	N.A.
6. This course related to the semester project and other courses.	N.A.	N.A.
7. The course material was useful and relevant.	N.A.	N.A.
8. This course allowed for an even distribution of the workload over time.	N.A.	N.A.
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	N.A.	N.A.
10. Feedback given by the teachers was complete, useful and timely.	N.A.	N.A.
11. The teachers were sufficiently available for questions/feedback about the course.	N.A.	N.A.
12. The teachers seriously took students' feedback about the course into consideration.	N.A.	N.A.
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	N.A.	N.A.
14. The teachers taught the course in an engaging and effective way.	N.A.	N.A.
15. The format of the course was engaging and conducive to learning the course material.	N.A.	N.A.

#### **Other Remarks from the Survey**

N.A.

#### **Comparison with Previous Year**

N.A, no previous year to compare it to.

#### **Suggestions from EduCo**

The following negative points were made, the assignments were maybe too easy and or Jose was maybe a bit too lenient when it came to grading. This can be easily adjusted by increasing the difficulty of the assignments and the latter could be improved by using a standardized grading system, or simply not giving students the benefit of the doubt. Although the lack of feedback makes it difficult to figure out the scale of the problem.

#### **Agreements with Teachers**

Jose agreed to the feedback overall and will try to adjust appropriately.

*Design for Behavioural Change*

Created by: Lisa Veldman

Email: [l.e.veldman@student.utwente.nl](mailto:l.e.veldman@student.utwente.nl)

Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2B

Osiris Course Code: 201700334

Credits: 3 EC

Teachers: Pascal Wilhelm

**Summary of the Course**

This course focussed on ways to systematically design for behavioral change when this change is necessary for a solution to work. Students discovered scientific concepts, principles, models and theories that are commonly applied in behavioral interventions.

**Overall Perception of the Course by Students**

The overall perception of this course was good. Students enjoyed this course, but had some small remarks. Students would have preferred a bit more guidance in the beginning for how to set up this report, and exactly what was expected to be in it. Also, the last assignment was not introduced properly, students were lost in the new set-up and the example papers. Lastly, students preferred to have a bit more interaction between groups, and to properly finish off each assignment.

The course was 3 EC worthy, but sometimes students were not able to keep up with the weekly reports.

**Statistics Semester Documentation Survey**

*N = 1, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	4	/
2. This course featured both group and individual work.	5	/
3. During this course, students were provided with a sufficient level of guidance.	3	/
4. For this course, there was a variety of possibilities to prove your	4	/

competence.		
5. This course facilitated personalization.	4	/
6. This course related to the semester project and other courses.	3	/
7. The course material was useful and relevant.	4	/
8. This course allowed for an even distribution of the workload over time.	4	/
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	5	/
10. Feedback given by the teachers was complete, useful and timely.	5	/
11. The teachers were sufficiently available for questions/feedback about the course.	5	/
12. The teachers seriously took students' feedback about the course into consideration.	5	/
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	4	/
14. The teachers taught the course in an engaging and effective way.	3	/
15. The format of the course was engaging and conducive to learning the course material.	3	/

### Other Remarks from the Survey

None

### Comparison with Previous Year

There is no documentation of this course from last year.

### Suggestions from EduCo

- Cut the workload down by one paper and keep the same set-up with the inclusion of an introduction lecture about the format of the papers and the expectations of the research.
- Another option is to cut the workload to only three papers, but making them bigger.
- Try to include presentations at the end of each assignment. That way students can present their findings, and students will get more insight into what the other groups are doing.

**Agreements with Teachers**

Pascal will try to incorporate this feedback in the course next year.

*Data Visualization*

Created by: Klaske Houtsma

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Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2B

Credits: 3 EC

Teachers: Barend Köbben

**Summary of the Course**

The Data Visualisation elective is about putting your data in graphs & maps to discover patterns and communicate your findings. This will be reached by looking at theory and examples and by discussing these. Furthermore, data visualisation are made by the students and makes a portfolio in which these can be viewed.

**Overall Perception of the Course by Students**

Students perceived the course as very flexible, however on a too low level. The students liked that the planning was followed and that external teachers were invited just as going to an external location themselves. Furthermore, the feedback was given on time, elaborate and Barend was always open to help and made time to teach his course.

**Statistics Semester Documentation Survey**

*N = 2, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	4	1.414
2. This course featured both group and individual work.	4.5	0.707
3. During this course, students were provided with a sufficient level of guidance.	4.5	0.707
4. For this course, there was a variety of possibilities to prove your competence.	4.5	0.707
5. This course facilitated personalization.	5	0
6. This course related to the semester project and other courses.	3	1.414

7. The course material was useful and relevant.	4	1.414
8. This course allowed for an even distribution of the workload over time.	3.5	0.707
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	4	1.414
10. Feedback given by the teachers was complete, useful and timely.	4.5	0.707
11. The teachers were sufficiently available for questions/feedback about the course.	4.5	0.707
12. The teachers seriously took students' feedback about the course into consideration.	4.5	0.707
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	4	1.414
14. The teachers taught the course in an engaging and effective way.	4	1.414
15. The format of the course was engaging and conducive to learning the course material.	3	2.828

#### **Other Remarks from the Survey**

Unfortunately, only two people have filled in the survey on data visualisation

#### **Comparison with Previous Year**

Compared to the former year, the given scores overlap.

#### **Suggestions from EduCo**

To improve on the level of the course, the students mentioned that within a students portfolio at least one programmed visualisation should be included.

#### **Agreements with Teachers**

No agreements have been made yet.

*Mechanics of Materials*

Created by: Joop Arts

Email: [j.arts@student.utwente.nl](mailto:j.arts@student.utwente.nl)

Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2A

Osiris Course Code: 201800452

Credits: 3 EC

Teachers: Jasper Homminga

**Summary of the Course**

Mechanics of materials deals with the subjects needed for analyzing the mechanical behavior of structures. Subjects that will be dealt with include stress, strain, stiffness, strength, moment of inertia, bending, torsion, shear.

**Overall Perception of the Course by Students**

Although the survey had only one response, from a verbal feedback session with EduCo, the course was described by a different student as having good lectures, thorough feedback from the instructor, and on-level assignments.

**Statistics Semester Documentation Survey**

*N* = 1, scale: 1 (never) – 5 (always)

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	5	0
2. This course featured both group and individual work.	3	0
3. During this course, students were provided with a sufficient level of guidance.	5	0
4. For this course, there was a variety of possibilities to prove your competence.	5	0
5. This course facilitated personalization.	4	0
6. This course related to the semester project and other courses.	2	0
7. The course material was useful and relevant.	4	0

8. This course allowed for an even distribution of the workload over time.	4	0
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	4	0
10. Feedback given by the teachers was complete, useful and timely.	4	0
11. The teachers were sufficiently available for questions/feedback about the course.	4	0
12. The teachers seriously took students' feedback about the course into consideration.	4	0
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	4	0
14. The teachers taught the course in an engaging and effective way.	5	0
15. The format of the course was engaging and conducive to learning the course material.	5	0

#### **Other Remarks from the Survey**

None.

#### **Comparison with Previous Year**

This course was not documented by students last year

#### **Suggestions from EduCo**

EduCo does not feel the need to give suggestions at this time.

#### **Agreements with Teachers**

No agreements have been made with teachers as no suggestions have been provided by EduCo.

*Introduction to Psychology*

Created by: Dhirendra Adiprakoso

Email: [dhirendraadiprakoso@student.utwente.nl](mailto:dhirendraadiprakoso@student.utwente.nl)

Date and Place of Writing: 06 July 2019, Enschede

Quartile: 2A

Osiris Course Code: 192901050

Credits: 5.0 EC

Teachers: Judith ter Vrugte

**Summary of the Course**

This introductory course is provided by the Psychology Bachelor's study where students gain basic knowledge on psychology. Psychology is a scientific discipline in the study of human behaviour. Students gain fundamental knowledge on Biological Psychology, Cognitive/Experimental Psychology, Developmental Psychology, Social Psychology, Personality Psychology and test theory. At the end of the course, students take an exam that covers all the aforementioned topics.

**Statistics Semester Documentation Survey**

*N = 4, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge.	3.25	/
2. This course featured both group and individual work.	1.75	/
3. During this course, students were provided with a sufficient level of guidance.	2.75	/
4. For this course, there was a variety of possibilities to prove your competence.	2.00	/
5. This course facilitated personalization.	2.25	/
6. This course related to the semester project and other courses.	3.00	/
7. The course material was useful and relevant.	4.50	/
8. This course allowed for an even distribution of the workload over time.	4.50	/

9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear.	4.50	/
10. Feedback given by the teachers was complete, useful and timely.	3.25	/
11. The teachers were sufficiently available for questions/feedback about the course.	3.25	/
12. The teachers seriously took students' feedback about the course into consideration.	3.25	/
13. Sufficient knowledge input and support was given to reach the learning goals set for this course.	4.25	/
14. The teachers taught the course in an engaging and effective way.	4.25	/
15. The format of the course was engaging and conducive to learning the course material.	4.25	/

#### **Other Remarks from the Survey**

Students noted that the course was a 'basic bachelor course from outside ATLAS with lectures and final tests.

## Semester as a whole (Eldi)

*Created by:* Dhirendra Adiprakoso

*Email:* [dhirendraadiprakoso@student.utwente.nl](mailto:dhirendraadiprakoso@student.utwente.nl)

*Date and Place of Writing:* 06 July 2019, Enschede

*Semester Coordinator:* Klaasjan Visscher

### Overall Perception of the Semester by Students

The students perceive the semester on different levels. During the first quarter, students were having difficulty in keeping up with the developments of the Semester Project. Furthermore, having the same groups take part in the IBS case studies as well as the Semester Project conflicted several groups and thus felt that they could not maximise on the eventual output. However, this did not hamper their satisfaction with how the first quartile turned out.

During the second quartile, the compactness of the Mathematics schedule troubled several students, which also meant that deadlines between the Mathematics modules and Electives courses (ATLAS and non-ATLAS) were very close together. This caused discomfort amongst the students, who felt that they should be coordinated in a better fashion. The occasional postponement of deadlines did not ease the discomfort as well. However, towards the end of the quartile, students were able to finish off the semester and conclude it in a calm manner.

### Statistics Semester Documentation Survey

*N = 6, scale: 1 (never) – 5 (always)*

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. The semester planning was clear and changes were communicated in time.	3.67	0.52
2. The expectations for this semester were clear.	3.33	0.52
3. An evenly spread out workload throughout the semester was possible.	3.33	0.82
4. The semester was coherent.	3.00	0.89
5. During the semester students were introduced to various topics that can assist them in narrowing down their interests towards a possible Master's programme.	3.17	0.75
6. The semester allowed for personalization.	3.83	0.41

7. Each student had an informed mentor that helped the student in his/her academic and personal development.	4.00	1.00
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### **Other Remarks from the Survey**

Other remarks included positives regarding clearer opportunities for personalisation this semester, however this was difficult to follow through in courses. This was mainly due to the awkward scheduling and structure of the domain courses. Furthermore, one student remarked feeling slightly uncomfortable throughout the semester because their mentor changed in the middle of the year. This is an interesting point to be raised regarding mentoring for students and how they should adapt to changes in the system.

### **Suggestions from EduCo**

EduCo believes that it is much better for the semester to be coordinated in a more structured way, wherein deadlines do not coincide with one another and that there is enough breathing space for students to carry out assignments. Furthermore, EduCo believes that the Semester Project should have been carried out in a much better fashion, since the essence of the Project is vital for the students' development. This could be done through carefully structuring the deliverables in such a way that students understand what is needed for which deliverable, and how the entire project culminates into the deliverable needed for the Project Defense.

### **Agreements with Semester Coordinator**

When meeting the Semester Coordinator, he understands the disadvantages of the semester's organisation. He particularly understands the complaints and feedback from students regarding the presentation of the Semester Project from Project Tutors. However, he acknowledges that there are points on improvement as pointed by the EduCo. This feedback will serve as points for improvement for upcoming semesters and thus provide an understanding of potential strengths and weaknesses that can be addressed.