

# Semester Documentation

## Semester 2 – Class of 2020

EduCo of 2020

Margot Schipper

[m.schipper-2@student.utwente.nl](mailto:m.schipper-2@student.utwente.nl)

Julia Hogestijn

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

Juul Piket

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

Daphne Nelissen

[d.m.nelissen@student.utwente.nl](mailto:d.m.nelissen@student.utwente.nl)

Guido van der Heijden

[g.a.m.vanderheijden@student.utwente.nl](mailto:g.a.m.vanderheijden@student.utwente.nl)

Elena Dalova

[e.dalova@student.utwente.nl](mailto:e.dalova@student.utwente.nl)

## Table of Contents

<b>Introduction</b>	<b>4</b>
<b>Innovation in Business and Society</b>	<b>5</b>
Summary of the Course	5
Perception of the Course	5
Discussion	6
Suggestions	7
Agreements	7
<b>Thermodynamics</b>	<b>8</b>
Summary of the Course	8
Perception of the Course	8
Discussion	10
Suggestions	10
Agreements	10
<b>Multivariate Analysis</b>	<b>11</b>
Summary of the Course	11
Perception of the Course	11
Discussion	12
Suggestions	13
Agreements	13
<b>Semester Project</b>	<b>14</b>
Perception of the Course	14
Discussion	15
Suggestions	15
Agreements	15
<b>ATLAS - Electives</b>	<b>16</b>
<b>Mathematical Physics</b>	<b>16</b>
Summary of the Course	16
Perception of the Course	16
Discussion	17
Suggestions	17
Agreements	17
<b>Data Visualization</b>	<b>18</b>
Summary of the Course	18
Perception of the Course	18

Discussion	19
Suggestions	19
Agreements	19
<b>Web Application Development</b>	<b>20</b>
Summary of the Course	20
Perception of the Course	20
Discussion	21
Suggestions	21
Agreements	21
<b>Newtonian Mechanics</b>	<b>22</b>
Summary of the Course	22
Perception of the Course	22
Discussion	23
Suggestions	23
Agreements	23
<b>Cell Biology</b>	<b>23</b>
Summary of the Course	23
Perception of the Course	23
Discussion	24
Suggestions	24
<b>Agreements</b>	<b>24</b>

## Introduction

This EduCo semester documentation consists of all evaluations and feedback gathered throughout semester 2 of Class of 2020. The structure of the second semester allows for more personalization since the fourth quartile is entirely up to the students choices in electives. The ATLAS electives were also evaluated, next to the domain courses and project.

The information presented in this document was collected in two ways. Firstly, it was delivered by the students as qualitative feedback throughout the semester, either on their initiative or in feedback sessions organized by the EduCo. Secondly, the EduCo 2020 Semester Survey, based on the "EduCo Criteria", was filled out by students. This survey consisted of a set of statements for each topic. Students were asked to rate them on a scale from 1 to 5; with 1 being the most negative attribution (never, very poor) and 5 the most positive attribution (always, very good). At the end of each section of the questionnaire, students had the opportunity to give open feedback, which is evaluated in the Discussion section of each evaluation. There were 31 out of 45 respondents for the mid term evaluation and 13 respondents out of a possible 45 for the final evaluation.

All evaluations have a similar structure; they start with a short description of the course or project, followed by the EduCo 2020 Semester Survey results in form of their mean values and standard deviations, and a discussion based on these results as well as the open feedback and other feedback from students throughout the semester. In this discussion, strengths and weaknesses are highlighted. Then solutions to problems are suggested, and the last section describes the agreements that were made with the teacher/coordinator during a meeting.

## Innovation in Business and Society

Created by: Margot Schipper; Daphne Nelissen, 19th September 2018, Enschede;

E-Mail: m.schipper-2@student.utwente.nl; d.m.nelissen@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Fokko Jan Dijksterhuis, Klaasjan Visscher, Ardion Beldad

### *Summary of the Course*

For the domain course in the field of social sciences for semester two the course was “Innovation in Business and Society”. The course consisted of lectures, weekly cases to be discussed with the project teams and close readings, which were to be done individually. In total to pass the course six cases and two close readings were covered. Contentwise, the course focussed on the interrelation of societal and technological change.

### *Perception of the Course*

n=31, scale=1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	4.0	0.7
2. This course featured both group and individual work	4.1	1.3
3. During this course, students were provided with a sufficient level of guidance	3.2	1.0
4. For this course, there was a variety of possibilities to prove your competence	4.0	1.0
5. This course facilitated personalization	3.9	0.9
6. This course related to the semester project and other courses	4.5	0.8
7. The course material was useful and relevant	4.0	0.8
8. This course allowed for an even distribution of the workload over time	3.4	1.0
9. The communication about learning goals, schedule, deadlines and	3.4	1.0

possibilities for evidence was clear		
10. Feedback given by the teacher(s) was complete, useful and timely	3.5	1.0
11. The teacher was sufficiently available for questions/feedback about the course	3.5	0.9
12. The teacher seriously took students' feedback about the course into consideration	3.4	0.6
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	3.6	0.8
14. The teacher(s) taught the course in an engaging and effective way	3.9	0.7
15. The format of the course was engaging and conducive to learning the course material	3.9	0.9

Other remarks:

- Deadlines were a problem sometimes, teachers should arrange one deadline. One remark: feedback on the cases came on the tuesday after the weekend, the deadline of the next case is on friday, which gives a timeslot of three days, which might not be enough considering the student's individual planning
- For this it also really depended on the teacher that was giving that case. I found the cases from Fokko Jan usually not that interesting where for example the last case from Klaas Jan was a lot of fun
- Too many different assignments and deadlines, and a lack of a clear objectives within the entire course. Sometimes it was unclear what we would learn from them and how would could apply this gained knowledge.
- The deadlines for the assignments were tight and the time needed to organize the group work would have been more useful for the actual group project. Individual assignments could be better
- I very much enjoyed this course and its setup

### *Discussion*

There was some discontent about the timing of deadlines and cases. The major problem with IBS was definitely communication: Deadlines, content and objectives were not clearly communicated. E.g cases were supposed to be solved within one afternoon and close readings were supposed to

be done within a day or two. This was however not entirely clear to the class.

Furthermore, the feedback for cases and close readings was diverging depending on which teacher provided it. Additionally to the different quality of the feedback, they were timed differently and provided through different channels (e.g. blackboard forum, blackboard my grades, via e-mail or handwritten notes in class). Contentwise the course nicely fit the theme of the semester project.

### *Suggestions*

- Make objectives, content, set up and intentions of the course clear
- Streamline communication
  - Which teacher is responsible for what
  - Better timing of deadlines in regard to other deadlines (semester project, other domain courses) and regularly: every case and close reading with repeating deadlines
  - Provide feedback in a timely manner and via the same channel every time
    - Make a template
- Coherence/relevance of cases

### *Agreements*

No agreements were made.

## Thermodynamics

Created by: Juul Piket, Guido van der Heijden, 19th September 2018, Enschede

E-Mail: j.piket@student.utwente.nl; g.a.m.vanderheijden@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Martin van der Hoef

### *Summary of the Course*

In this course, the concepts of heat, temperature, work, energy, entropy, and how all processes are dictated by the first (conservation of energy) and second law (maximized entropy) of thermodynamics were addressed. This knowledge helped to understand the basic operation of heat engines, refrigerators and heat pumps. In a broader sense, this course enabled more insight into the reason why some processes occur spontaneously (heat flow from hot to cold), while the reverse process will never happen. The content was studied using the book "University physics" by Young and Freeman. The chapters that were addressed are chapter 18, 19 and 20.

### *Perception of the Course*

n=31, scale=1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	4.4	0.6
2. This course featured both group and individual work	4.2	1.0
3. During this course, students were provided with a sufficient level of guidance	4.1	0.9
4. For this course, there was a variety of possibilities to prove your competence	3.5	1.0
5. This course facilitated personalization	4.1	0.8
6. This course related to the semester project and other courses	3.5	1.0

7. The course material was useful and relevant	4.0	0.7
8. This course allowed for an even distribution of the workload over time	3.6	1.1
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.3	0.8
10. Feedback given by the teacher(s) was complete, useful and timely	4.0	0.9
11. The teacher was sufficiently available for questions/feedback about the course	4.4	0.6
12. The teacher seriously took students' feedback about the course into consideration	3.6	0.8
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	4.0	0.5
14. The teacher(s) taught the course in an engaging and effective way	3.7	0.9
15. The format of the course was engaging and conducive to learning the course material	3.5	1.0

Other remarks:

- I would prefer a course structure of lecture-assignment-lecture-assignment over a structure where you first get a load of lectures and then have to do all the assignments after the lectures.
- Lectures were information-packed and quite fast, so could have been explained more elaborately
- The course and assignments were alright, Martin taught in an engaging manner and he even gave an extra lecture, which I appreciate. However, I feel like the workload for this course compared to the workload for our other 3-EC course, MvA, was a lot bigger. This caused a lack of equilibrium in my case at least, meaning that I had to focus more on physics than on maths, which lead to me neglecting MvA to a certain degree.
- Course content could've been more advanced and demanding
- The lectures were a lot of information in little time so that it was very hard to follow
- Please spread the theory more

### *Discussion*

Overall, this course was perceived positively. Most students perceived the course as relevant and transfer of knowledge was supplied sufficiently. However, the format of the course was criticized by some (which was first all lectures and then all assignments). Furthermore, the lectures were perceived quite fast. Nevertheless, another lecture was given in consultation with the teacher, and the teacher was sufficiently available for questions. Some students wanted more in-depth information. However, some students perceived the course as challenging, which evens out to a nice average of course level.

### *Suggestions*

We suggest an extra lecture in the series, to allow for a bit more spread of content. Next to that, a structure like lecture-assignment-lecture etc. should be considered, as this was suggested by students to work better for them. Other than that, the course was perceived well and we therefore suggest to keep the content similar to what it was now.

### *Agreements*

No agreements have been made.

## Multivariate Analysis

Created by: Elena Dalova; Julia Hogestijn, 19th September 2018, Enschede

E-Mail: e.dalova@student.utwente.nl; j.hogestijn@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Martin Streng

### *Summary of the Course*

Multivariate analysis introduced students to the fundamentals of functions with multiple variables. Additionally cross products, parametric equations, triple products, vectors and their functions in space were covered. The content of the course followed on the book "Calculus, early transcendentals", by Stewart, 8th edition. Structurally, this course consisted of one lecture per week, in which the overview of a chapter was given by the teacher. Assessment was in the form of three take-home assignments of increasing difficulty, evaluated with a "pass", "excellent pass" or "fail". This format was discussed with the students during the first lecture of the course.

### *Perception of the Course*

n = 31

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	3.5	0.6
2. This course featured both group and individual work	2.6	1.0
3. During this course students were provided with a sufficient level of guidance	3.8	1.0
4. For this course, there was a variety of possibilities to prove your competence	3.2	1.1
5. This course facilitated personalization	2.5	1.0
6. This course related to the semester project and other courses	2.9	1.0
7. The course material was useful and relevant	4.2	0.7
8. This course allowed for an even distribution of the workload over time	3.9	1.1

9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.2	0.7
10. Feedback given by the teacher(s) was complete, useful and timely	3.4	1.0
11. The teacher was sufficiently available for questions/feedback about the course	4.4	0.6
12. The teacher seriously took students' feedback about the course into consideration	4.7	0.7
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	3.8	0.8
14. The teacher(s) taught the course in an engaging and effective way	3.2	1.0
15. The format of the course was engaging and conducive to learning the course material	3.6	0.9

### *Discussion*

Course structure:

Students found it good that they could decide on the number of assignments and their deadlines, and create the structure of the course together with Martin. On the other hand, some students found that dedicating an entire lecture to this was a waste of time, seeing the limited number of total lectures we had. As for the pace of the course, for many people the lectures were too slow-paced or “a little dull”.

Assignments:

Several students had difficulties with the assignments, saying they were too complicated compared to the practice questions in the book suggested by Martin. Since the assignments were individual, some students found that the opportunities to work together were rather limited.

Martin Streng:

It was appreciated that Martin stayed open for feedback and suggestions throughout the course. Students felt that he was approachable and happy to answer their questions. As one student wrote in the questionnaire, *“He really put effort into this course, and this was very much appreciated :)”*.

### *Suggestions*

The feedback on assignments, especially in the case of a “fail” could have been more specific. That way it would be clearer what the student can improve.

According to some, the course could have been more demanding in terms of content difficulty. However, there were level differences between students and while some wanted a more difficult course, others found it too demanding. Therefore, no conclusion can be made on whether the course should have a different pace or not.

### *Agreements*

The EduCo did not organize a feedback session specifically for the course, because it did not seem necessary. Martin was very approachable and open to changes, so students generally preferred to address feedback directly to him. Therefore no specific agreements are documented.

## Semester Project

Created by: Margot Schipper; Daphne Nelissen, 19th of September 2018, Enschede;

E-Mail: m.schipper-2@student.utwente.nl; d.m.nelissen@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Pascal Wilhelm, Klaasjan Visscher

### *Summary of the Course*

The project was structured into two parts: firstly the writing of a scenario and secondly the investigation of stakeholder interests presented in the form of a documentary. On paper the two parts were equally spread out over quartile three and four. However, due to a lot national holidays, the Atlantis study trip and other circumstances this was not exactly the case. In the semester project there was room allocated to “personal deepenings”. Here students had the opportunity to select a topic of their interest, related to the semester project and investigate it further.

Along the semester project workshops which were aimed at facilitating skills to successfully work on the project were given.

### *Perception of the Course*

Part 1 (first quartile of the semester)

n=31, scale=1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. In the project non-Dutch students were not put at a disadvantage	4	1.1
2. All ATLAS domains/courses that were taught in this semester could be integrated in this project	3.2	0.9
3. Tutors/consultants were informed about the project, and had relevant knowledge	3.1	1
4. Tutors/consultants were readily available/accessible for students.	3.7	0.9
5. This project had a well-communicated and logical set-up	3.4	1.1
6. The students were provided with relevant information/knowledge that could be readily applied within the project	3.7	0.8

7. The project was based on a problem that includes both social and technical aspects	4.4	0.7
8. This project clearly stated which assumptions may be made by the students	2.6	0.8
9. The procedure for project assessment was clear in advance	3.5	0.8

Other remarks:

- Things such as the amount of words were communicated way too late, which was very unclear (leading to having to scrap 7k words)
- technology/natural sciences were not really integrated. If you would want to make calculations, you really had to do something yourself.
- Be careful to not do too many presentation by students. After a few presentations following the same structure, it gets very boring and unengaging to listen to the presentations.
- Our tutors lack knowledge about scenario making and the exact requirements we have to fulfill which makes it hard for them to provide the support and guidance we need and meetings with them feel kind of useless.
- Please structure the creation of groups either by subject of interest or personality.

Part 2 of the semester:

N = 13, scale=1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. In the project non-Dutch students were not put at a disadvantage	4.3	0.9
2. All ATLAS domains/courses that were taught in this semester could be integrated in this project	3.0	0.0
3. Tutors/consultants were informed about the project, and had relevant knowledge	2.7	1.2
4. Tutors/consultants were readily available/accessible for students.	3.0	0.8
5. This project had a well-communicated and logical set-up	3.3	0.5
6. The students were provided with relevant information/knowledge that could be readily applied within the project	3.0	0.0
7. The project was based on a problem that includes both social and technical aspects	3.7	0.5

8. This project clearly stated which assumptions may be made by the students	2.3	0.5
9. The procedure for project assessment was clear in advance	3.7	0.5

Other remarks:

- A problem with the project was the second part, with the documentary was the fact that we lacked knowledge, it felt rushed, expectations were unclear (what should the quality be of the video over the content?) and assessment criteria were partially unclear. I liked being able to do creative things in the project, but I feel like it didn't work out with the set up.
- Tutors/Assessors were badly informed on most things:
  - our assessors did not know about the short word limit for the personal deepenings and deducted points due to lack of information in their assessment
  - tutors for workshops did not know about the aim of the project nor where we were in our timeline
  - everyone seemed a bit confused/not having a clear idea about when what was supposed to happen.
  - The idea with the documentary was nice but really not feasible. Lack of time, knowledge and skills made it more of an obstacle rather than something to learn from.
- The idea of a documentary was nice, but the workshops about script-writing, filming, editing etc were given slightly too late, leaving students with little time to apply that knowledge in the project. As an international, I think non-Dutch students were put at a slight disadvantage as stakeholder mostly consisted of contacting Dutch stakeholders.
- The tutors did not have enough information about the project requirements to give proper feedback about the deliverables not to speak about the topics discussed in the project. Furthermore, some of the tutors did not have time to give feedback and meet and did not communicate this with the group. Sometimes it even felt as if some were very biased and tried to push the group in a direction they personally liked better.

## *Discussion*

*Suggestions*

*Agreements*

## ATLAS - Electives

In the fourth quartile students had the opportunity to take in- and outside ATLAS electives to further investigate their personal interests. People chose electives provided by ATLAS as well as courses offered by other programs.

## Mathematical Physics

Created by: Elena Dalova; 19th September 2018, Enschede

E-Mail: e.dalova@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teacher: Martin Streng

### *Summary of the Course*

Mathematical physics was an elective course for students who wish to deepen and extend their understanding of multivariate analysis. Similarly to Multivariate Analysis, this course followed the contents of the book "Calculus, early transcendentals", by Stewart, 8<sup>th</sup> edition. The first part of the course dealt with integrating functions of multiple variables, visualizing the results and presenting some applications of multiple integration. In the second part, students were introduced to (operations on) vector fields, and theorems like Green's Theorem, Stoke's Theorem, and Divergence Theorem. The content was presented in a weekly lecture, over a total of seven weeks. Assessment was in the form of two assignments (one for each part of the course) evaluated with a "pass", "excellent pass" or "fail", including feedback. This format was discussed and agreed on by the students and teacher during the first lecture.

### *Perception of the Course*

n = 7, scale=1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	4.1	0.4
2. This course featured both group and individual work	3.6	1.1
3. During this course students were provided with a sufficient level of	4.0	0.6

guidance		
4. For this course, there was a variety of possibilities to prove your competence	3.7	0.8
5. This course facilitated personalization	3.0	1.0
6. This course related to the semester project and other courses	3.4	1.0
7. The course material was useful and relevant	4.3	0.5
8. This course allowed for an even distribution of the workload over time	3.9	0.7
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.4	0.5
10. Feedback given by the teacher(s) was complete, useful and timely	3.9	0.4
11. The teacher was sufficiently available for questions/feedback about the course	4.1	0.4
12. The teacher seriously took students' feedback about the course into consideration	4.6	0.5
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	4.1	0.7
14. The teacher(s) taught the course in an engaging and effective way	3.4	1.0
15. The format of the course was engaging and conducive to learning the course material	3.7	0.5

### *Discussion*

Students made no remarks about this course in the EduCo questionnaire. The attitude towards the course and teacher was similar to “Multivariate Analysis”, as the setup was almost the same.

Setup:

Once again, students found it good that they could decide on the number of assignments and their deadlines, and create the structure of the course together with Martin. However, a concern was expressed that the lectures are too short and too few to meaningfully cover all material of the course, so the majority of it was self-study.

Assignments and Content:

The assignments were considered too easy by some, especially compared to the assignments for Multivariate Analysis. They were made up of book problems, which were often similar to examples worked through in the chapters, so they required simply following an algorithm for finding a solution. The material itself was difficult, appropriately for an elective in mathematics.

Martin:

Students were satisfied with Martin's availability and willingness to help and answer questions.

### *Suggestions*

Since there is no qualitative input for the questionnaire, it is hard to outline specific suggestions for this course. They overlap with suggestions for Multivariate Analysis. The assignments could have been more focussed on applying concepts to unfamiliar contexts, rather than reproducing solutions from the book.

### *Agreements*

No agreements were made.

## Data Visualization

Created by: Elena Dalova; 19th September 2018, Enschede

E-Mail: e.dalova@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Barend Köbben, Yuri Engelhardt

### *Summary of the Course*

Data Visualization was an elective course in which students learned the principles of representing data sets visually, in a way that is most suited for the viewer and conveys trends in the data in a straightforward way. Students were acquainted with data visualization tools of their choice, and with fundamental design principles in the field. Assessment was in the form of two visualization exercises and one challenge assignment (of increasing difficulty), the teacher provided extensive feedback on all of them. Lectures were weekly and focused around discussion of assigned readings or design solutions, as well as presenting and discussing students' work.

### *Perception of the Course*

n = 6, scale = 1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	4.3	0.5
2. This course featured both group and individual work	3.5	1.3
3. During this course students were provided with a sufficient level of guidance	4.0	0.8
4. For this course, there was a variety of possibilities to prove your competence	4.3	1.0
5. This course facilitated personalization	5.0	0.0
6. This course related to the semester project and other courses	3.8	0.5
7. The course material was useful and relevant	4.3	0.5
8. This course allowed for an even distribution of the workload over time	4.3	0.5

9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	5.0	0.0
10. Feedback given by the teacher(s) was complete, useful and timely	4.3	0.5
11. The teacher was sufficiently available for questions/feedback about the course	4.3	0.5
12. The teacher seriously took students' feedback about the course into consideration	3.5	0.6
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	4.3	0.5
14. The teacher(s) taught the course in an engaging and effective way	4.3	1.0
15. The format of the course was engaging and conducive to learning the course material	3.8	1.0

### *Discussion*

*"I liked that the lectures were interactive and Barend encouraged discussion. The reading materials were interesting".* Overall, students were satisfied with the course and did not raise any complaints or points of improvement.

### *Suggestions*

N/A

### *Agreements*

No agreements were made.

## Web Application Development

Created by: Margot Schipper; 19th September 2018, Enschede

E-Mail: m.schipper-2@@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Barend Köbben

### *Summary of the Course*

In this course students learned how to understand, discuss, and apply the concepts and principles of web technologies; understand how use and users should influence decisions on design and implementation of web sites; understand and implement the standard client-side technologies to create interactive web applications using the Open Web Platform (HTML5, CSS, Javascript, XMLHttpRequest); understand and implement selected server-side technologies to create back-end web services (e.g. Python & database connectivity). These learning goals were reached by the students developing a web application as their final assignment. The course consisted of lecture, a guest lecture and questions hours. Barend was also available via mail or walk ins.

### *Perception of the Course*

n = 5, scale = 1-5

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	3.4	1.3
2. This course featured both group and individual work	2.8	0.4
3. During this course students were provided with a sufficient level of guidance *	3.3	1.5
4. For this course, there was a variety of possibilities to prove your competence	3.4	1.3
5. This course facilitated personalization	4.8	0.4
6. This course related to the semester project and other courses *	3.5	1.3

7. The course material was useful and relevant	3.6	1.3
8. This course allowed for an even distribution of the workload over time	4.2	0.4
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.2	0.8
10. Feedback given by the teacher(s) was complete, useful and timely	3.8	0.4
11. The teacher was sufficiently available for questions/feedback about the course	4.4	0.5
12. The teacher seriously took students' feedback about the course into consideration	3.8	0.4
13. Sufficient knowledge input and support was given to reach the learning goals set for this course	3.6	1.1
14. The teacher(s) taught the course in an engaging and effective way **	3.7	0.8
15. The format of the course was engaging and conducive to learning the course material	3.8	0.8

\* n = 4

\*\* n = 6

### *Discussion*

"I was missing the theory needed to make a web app in this course. We were referred to some very elaborate sites, but these mostly described the concepts instead of showing how they can be used. Furthermore, the lectures did not address the coding/programming theory needed to make a web app, and I feel like doing intermediary practicals could help future students out a lot"

"Barend was very available and helpful whenever you had questions. However, it was very difficult to find an entry into the subject. The lectures were really not that relevant to reaching the learning goals or prepare for the final assignment. I lacked an introduction of how webapp works, what things mean and how to use them. But Barend is a great teacher: approachable, open and takes students' personal needs and circumstances into consideration which is very nice"

*Suggestions*

*Agreements*

## Newtonian Mechanics and rotation

Created by: 19th September 2018, Enschede

E-Mail: m.schipper-2@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers:

### *Summary of the Course*

### *Perception of the Course*

n =

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge		
2. This course featured both group and individual work		
3. During this course students were provided with a sufficient level of guidance		
4. For this course, there was a variety of possibilities to prove your competence		
5. This course facilitated personalization		
6. This course related to the semester project and other courses		
7. The course material was useful and relevant		
8. This course allowed for an even distribution of the workload over time		
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear		
10. Feedback given by the teacher(s) was complete, useful and timely		
11. The teacher was sufficiently available for questions/feedback about the course		

12. The teacher seriously took students' feedback about the course into consideration		
13. Sufficient knowledge input and support was given to reach the learning goals set for this course		
14. The teacher(s) taught the course in an engaging and effective way		
15. The format of the course was engaging and conducive to learning the course material		

*Discussion*

*Suggestions*

*Agreements*

## Cell Biology

Created by: Daphne Nelissen; 23th September 2018, Enschede

E-Mail: d.m.nelissen@student.utwente.nl

Semester, Year, Class: Semester 2, 2017/2018, Class of 2020

Teachers: Leonie Krab

### *Summary of the Course*

### *Perception of the Course*

n =

<b>EduCo Criterion</b>	<b>Mean</b>	<b>SD</b>
1. This course sufficiently conveyed both theoretical and applied knowledge	4.0	0.8
2. This course featured both group and individual work	4.7	0.5
3. During this course students were provided with a sufficient level of guidance	3.3	0.5
4. For this course, there was a variety of possibilities to prove your competence	4.3	0.5
5. This course facilitated personalization	4.0	0.0
6. This course related to the semester project and other courses	4.3	0.5
7. The course material was useful and relevant	3.3	0.5
8. This course allowed for an even distribution of the workload over time	3.3	0.5
9. The communication about learning goals, schedule, deadlines and possibilities for evidence was clear	4.0	0.0
10. Feedback given by the teacher(s) was complete, useful and timely	3.7	0.9
11. The teacher was sufficiently available for questions/feedback about the course	4.0	0.0
12. The teacher seriously took students' feedback about the course into consideration	4.3	0.5

13. Sufficient knowledge input and support was given to reach the learning goals set for this course	3.0	0.8
14. The teacher(s) taught the course in an engaging and effective way	4.7	0.9
15. The format of the course was engaging and conducive to learning the course material	3.0	0.8

*Discussion*

*Suggestions*

*Agreements*