### Schema A, Course evaluation

102 could answer this evaluation schema.  
57 have answered this evaluation schema.  
The answer percentage is 55.88%: 57 / 102

#### 1 Form A

1.1 I think I am learning a lot in this course
- **Strongly agree**: 34 (59.6%)  
- **Agree**: 16 (28.1%)  
- **Neutral**: 5 (8.8%)  
- **Disagree**: 1 (1.8%)  
- **Strongly disagree**: 1 (1.8%)

1.2 I think the teaching method encourages my active participation
- **Strongly agree**: 45 (78.9%)  
- **Agree**: 9 (15.8%)  
- **Neutral**: 2 (3.5%)  
- **Disagree**: 0  
- **Strongly disagree**: 1 (1.8%)

1.3 I think the teaching material is good
- **Strongly agree**: 29 (50.9%)  
- **Agree**: 17 (29.8%)  
- **Neutral**: 8 (14.0%)  
- **Disagree**: 2 (3.5%)  
- **Strongly disagree**: 1 (1.8%)

1.4 I think that throughout the course, the teacher/s have clearly communicated to me where I stand academically
- **Strongly agree**: 36 (63.2%)  
- **Agree**: 17 (29.8%)  
- **Neutral**: 2 (3.5%)  
- **Disagree**: 1 (1.8%)  
- **Strongly disagree**: 1 (1.8%)

1.5 I think the teacher/s create/s good continuity between the different teaching activities
- **Strongly agree**: 45 (78.9%)  
- **Agree**: 8 (14.0%)  
- **Neutral**: 3 (5.3%)  
- **Disagree**: 0  
- **Strongly disagree**: 1 (1.8%)

1.6 5 points is equivalent to 9 hrs./week (45 hrs./week in the three-week period). I think my performance during the course is
- **Much less**: 1 (1.8%)  
- **Less**: 1 (1.8%)  
- **Neutral**: 17 (29.8%)  
- **Better**: 19 (33.3%)  
- **Much better**: 22 (39.6%)
1.7 I think the course description’s prerequisites are

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<tr>
<td><strong>Too low</strong></td>
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<td>2</td>
<td>3.5%</td>
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<tr>
<td>2</td>
<td>3.5%</td>
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<tr>
<td>52</td>
<td>91.2%</td>
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<td><strong>Too high</strong></td>
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<td>1</td>
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1.8 In general, I think this is a good course

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<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
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<td></td>
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<tr>
<td>36</td>
<td>64.3%</td>
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<tr>
<td>15</td>
<td>26.8%</td>
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<tr>
<td>3</td>
<td>5.4%</td>
<td></td>
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<tr>
<td>2</td>
<td>3.6%</td>
<td></td>
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<tr>
<td><strong>Strongly disagree</strong></td>
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<tr>
<td>0</td>
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1.9 During the course, have you been asked to evaluate the course and the teaching, for example through an oral or written mid-term evaluation?

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<tbody>
<tr>
<td><strong>Yes</strong></td>
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<tr>
<td>50</td>
<td>89.3%</td>
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<tr>
<td><strong>No</strong></td>
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<tr>
<td>3</td>
<td>5.4%</td>
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<tr>
<td><strong>Don’t know</strong></td>
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<tr>
<td>3</td>
<td>5.4%</td>
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</tbody>
</table>

2 Form A English skills

2.1 I think my English skills are sufficient to benefit fully from this course

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<tbody>
<tr>
<td><strong>Strongly agree</strong></td>
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<td></td>
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<tr>
<td>49</td>
<td>87.5%</td>
<td></td>
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<tr>
<td>5</td>
<td>8.9%</td>
<td></td>
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<tr>
<td>1</td>
<td>1.8%</td>
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<td>0</td>
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<tr>
<td><strong>Strongly disagree</strong></td>
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<tr>
<td>1</td>
<td>1.8%</td>
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</tbody>
</table>
Schema B, Person evaluation (Ilmar Santos)

102 could answer this evaluation schema.
53 have answered this evaluation schema.
The answer percentage is 51.96% : 53 / 102

1 Lecture/Classroom instruction

1.1 I think that the teaching gives me a good grasp of the academic content of the course

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>45</td>
<td>84.9%</td>
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<tr>
<td>5</td>
<td>9.4%</td>
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<tr>
<td>2</td>
<td>3.8%</td>
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<tr>
<td>0</td>
<td>0%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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</table>

1.2 I think the teacher is good at communicating the subject

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>48</td>
<td>90.6%</td>
</tr>
<tr>
<td>3</td>
<td>5.7%</td>
</tr>
<tr>
<td>1</td>
<td>1.9%</td>
</tr>
<tr>
<td>0</td>
<td>0%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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</table>

1.3 I think the teacher motivates us to actively follow the class

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>90.6%</td>
</tr>
<tr>
<td>4</td>
<td>7.5%</td>
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<tr>
<td>0</td>
<td>0%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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</tbody>
</table>

2 Practical assignments/Lab courses/Course tutorial/Group work/Project work

2.1 I think that I generally understand what I am to do in our practical assignments/lab courses/group computation/group work/project work

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>58.5%</td>
</tr>
<tr>
<td>19</td>
<td>35.8%</td>
</tr>
<tr>
<td>1</td>
<td>1.9%</td>
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</table>

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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2.2 I think the teacher is good at helping me understand the academic content

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>83.0%</td>
</tr>
<tr>
<td>7</td>
<td>13.2%</td>
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<tr>
<td>1</td>
<td>1.9%</td>
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</table>

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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</table>

2.3 I think the teacher gives me useful feedback on my work

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>81.1%</td>
</tr>
<tr>
<td>8</td>
<td>15.1%</td>
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<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1</td>
<td>1.9%</td>
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</table>
3 The teachers communication skills in English

3.1 I think the teacher's communication skills in English are good

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>44</th>
<th>83.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>1.9%</td>
</tr>
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</table>

4 Qualitative comments

4.1 You can write additional comments on the teaching of the teacher in question here

- Great course, great lectures, good idea timing breaks with an alarm
- possibly the best professor at DTU. keep up the great work!
- Antallet af hjælpelærer er godt, men kvaliteten er desværre så dårlig, så man er mere i tvivl efter man har spurgt dem. Samtlige konsultationer hos hjælpelærerne (>5) har været nærmest helt ubrugelige, da de enten ikke helt har sat sig ind i projektet eller ikke forstår engelsk godt nok til at kunne formidle sig. Jeg ved, at jeg deler denne opfattelse med flere medstuderende.

Det er uden tvivl et svært fag at være hjælpelærer i, men derfor er det også ekstra vigtigt at hjælpen er i top, når der er så mange studerende :)

- Best lecturer I've had these past 4 years! Extremely engaged in his students.
- Ilmar is a fantastic teacher.
- Hard to say what could be better...
  Lectures are very clear and well explained. They are nicely supported by the experiments
- Great!
- It's great that you are so entusiastic - it really shows in your teaching!
- So glad and enthusiastic every single time, it is so nice!
- Amazing black board order!
  Great combination of respect and humor.
- The best teacher i had so far at DTU.
- I've been amazed how Ilmar presents a notoriously difficult subject in a way where you get the full understanding from his lectures.
- Best enthusiasm and commitment I have ever experienced from a lecturer at DTU. Furthermore he gave the best review I have ever gotten on a report, half way through the course. Keep up the good spirit! Much appreciated!

- Good lectures, good communication, teacher provides all necessary information. I appreciate his work.

- Very nice lectures, experiments... Probably the best lectures I could see.

- You probably hear this quite often, but you are one of the best teachers I had in my academic career. I am really glad, that I chose this subject.

- Ilmar is a great teacher - his enthusiasm for the subject helps to make it interesting, and the many experimental examples he shows in the classes give a good insight into the theory.

- Jeg har gået i skole i rigtig mange år efter hånden, og jeg har aldrig haft så kompetent, inspirerende og overordnet god en underviser.

- I believe Ilmar is an excellent and enthusiastic teacher who clearly loves the subject and is able to communicate all of the course material brilliantly.
1 Qualitative comments

1.1 What went well – and why?

- The form of the feedback we got on the first project was really good, it really helped a lot with understanding some of the last parts that we missed.

- Velstruktureret og spændende undervisning!
  Super fedt at kunne mærke den røde tråd igennem læringsskurven, og at der bliver fremhævet specielt kritiske områder.
  De eksperimentelle setups er alpha omega for en god forståelse, så behold endelig dem.

- Everything:
  - Good structure of each lecture
  - Nice balance between theory and practice
  - Workload is a bit high, but manageable as the course is very interesting

- Everything went well, even if the course is intense, the teacher is very available for any help and he explains things very clearly.

- Projects taught us a lot. Demonstration experiments extremely useful, helpful and engaging

- Der var mange ting der var gode, men de blev også skrevet sidst vi skulle evaluere.
  Nyt: Det er rigtigt lækkert der i opgave 2 står, ved den sidste opgave, at denne er for 12 tallet

- Project work in this course is good as you get to really work with the course curriculum. It was a good exercise to evaluate other students reports as it gave insight to how you wrote your own report.

- Good Teacher!
  All the experiments in class

- You learn a lot from the projects.
  Curriculum is interesting

- God kobling mellem teori og praksis i, form af eksperimenter.

- Det er dejligt med et kursus fokuseret på anvendelse i stedet for udledninger.
  Afleveringsopgaverne er relevante og interessante.

- I think that this course till now provided me, everything I would expect and I would like to learn about this subject. The live experiments helped me a lot to understand in a practical way the different aspects of each component of this course. Excellent work from the teacher.
- Rigtig gode eksempler i klassen.
- Godt med eksperimenter under forelæsningerne
- Good course, Ilmar is well prepared everytime.
- Nearly everything went well.
- Obtaining results, it was explained clearly what we need to do. The workload for 5 ECTS course is quite a lot.
- Lectures were very good!
- The teacher (Ilmar) is really good and has a good teaching method
- Det er rigtig godt med opdelinger af arbejdet samt deadlines for hvad man skal nå.
- Nice blackboard order.
  Good application of theory with experiments.
- The course is already at a very high standard: the material is interesting and well presented, and the experimental examples give an excellent insight into how the theory works. Many courses are purely theoretical, so including the experimental data in the projects is a welcome change.
- Generally everything went well and it is real nice to see all the experiments in the lectures.
- Having projects rather than written exams is an excellent way to learn.
- Rigtig god tavle-struktur fra underviseren og generelt godt med billeder af al information og notater, som bliver lavet i timen.
  Fedt og godt med eksperimentelle forsøg under forelæsningen - hjælper til bedre forståelse af svær teori.
- The teacher. Actually is one of the most passionate and interesting professors i ever had. The material and the teaching procedure is perfect

1.2 What did not go so well – and why?
- The work load and sometimes feeling stuck in the process
  - Hjælpelærer - skal sætte sig bedre ind i stoffet for at kunne hjælpe
  - Måske der ikke behøves at bruges så lang tid på at gennemgå samtlige resonanser og anti-resonanser for de eksperimentelle setups, hvis det betyder at der er meget mindre tid til grupperegning.
  - Videreudvikling/revidering af kursusnoterne, så der er mere en rød tråd
- Nothing
- nothing
- Long lectures sometimes hard to follow
- Not much..
  
  Could have been nice to have an evaluation sheet when evaluating the other students reports.
- The reports are too big.
- 3 of the weeks were a recap of basic mechanical vibrations. It felt slow.
- Det er et stort spring fra teori til de opgaver der skal afleveres. Øvelse med mere simple eksempler ville hjælpe på indlæring af teorien, og gøre det nemmere at lave de store opgaver.
- De sidste kursusdage ligger meget tæt op ad hinanden, men det er der ikke så meget at gøre ved.
- I think you should be faster in the beginning - we followed your advice on deadlines for the first assignment but still had a huge workload towards the end because you wanted your lectures to fit with the assignment exercises. Please do as with the last assignment and give longer lectures in the beginning and more realistic deadlines.
- De udleverede MATLAB-scripts er ofte svære at forstå og meget rodede.
- I første del af kurset blev der brugt alt for meget tid på at vise de samme eksperimenter igen og igen.
- Sometimes the same experiments where shown two weeks in a row, which can be kind of time consuming.
- The lectures could include more practical examples on the blackboard, which would give a better understanding of the application of the mathematics.
- The codes and additional data for the codes could have been explained better.
- in the project it sometimes happen that students were stuck for a day and this is increasing the work time very much. Also the codes given could have been better structured. I think this may simulate the real engineering situation, but takes a lot of time to get oriented...
- I lacked some knowledge to understand everything
- Huge work load for the assignments.
- It was a bit hard getting started on the reports because there was so much to consider and it was hard to figure out how to get started.
- Arbejdsbyrden er overvældende.
- Ofte meget arbejde, hvilket kan skade den fulde forståelse, da man ønsker at svare på alt -
The times that needed for the course and the 5 ECTS are too many

1.3 What changes would you suggest for the next time the course is offered?

- I don’t think giving the Matlab scripts to the students helps them understand, as I've for the most part just made it into a function and used it without fully understanding it. The mode shape plotter/calculator for project 2 is a prime example of this

- The course pensum is larger than 5 ECTS points. The course demands more work hours than most other 10 ECTS courses.

- The course should be a 10 point course instead

- Fortsæt den gode undervisning! Men måske...
  - hjælpelever skal være mere inde i stoffet (måske ikke PhD, da de har for travlt/ikke kan sætte sig ind de studerendes niveau?)
  - mindre tid på udpensling af eksperimentel modal analyse, men vis blot nogle enkelte

- Smaller groups for the first project.

- nothing

- Tilføje små simple regne øvelser.

- Sometimes Illmar seems to get carried away with the experiments during the lecture. Don't get me wrong, they are great! but sometimes they steal just a bit too much of the valuable time.
  The experiments are very very informative, but the output shown on the software sometimes is a bit hard to understand.

- Elaborate more on how to obtain results from the codes so people would not spend a lot if time to make it work since all the codes are provided already, but making it actually work takes time.

- The workload is very high and I think it could be little lowered by making the matlab codes bit better structured and set up some debugging points. It is very hard for teacher to find a mistake or reason for not working code if it is 500 rows long and no points to check are set. I am not sure whether the matrices were too big, but for some reason I faced also some numerical problems. This could be avoided by taking some "good old" eig function and wrapping it and let the students use the "good" one. Otherwise everybody has a different Matlab version and is hard to find the mistake.

- Less work

- Some parts of the manuscript are missing references to equations /figures, which can make it harder to follow derivations. Also, the derivation of the lumped unbalance (for project 2) is missing.

- Billederne af tavlenoterne er en stor hjælp. Men hvis dette skulle perfektioneres, ville videooptagelser af forelæsningerne være fantastiske.
- Underviseren kunne lave en 'opgaveplan/opgavekalender', som hjælper de studerende til at vide, hvor langt man helst skal være nået uge til uge. For mig personligt (og ved også fra andre) at arbejdsbyrden ved begge opgaver overrasker og pludseligt for man rigtig travlt.

- Less hours working on the reports. Courses also via streaming
Evaluation of exam

Purpose: This evaluation will supplement the course evaluation by focusing on your experience of the examination. It is, like the course evaluation, completely anonymous. The results will be used partly by the course responsibles and partly by the Institute Study Board, where teacher and student representatives will process the evaluations and assess the need for development of course content, teaching and examination. "Examination" encompass all you are being evaluated on in this course.

101 could answer this evaluation schema. 24 have answered this evaluation schema. The answer percentage is 23.76%. : 24 / 101

1

1.1 Have you received the final grade?

- Yes 0
- No 24 100.0%

1.2 I feel that the examination corresponded to the teaching on the course (form, activity, content, level of complexity)

- Completely agree 17 73.9%
- 3 13.0%
- 3 13.0%
- 0

- Completely disagree 0

1.3 Explanation / comments:

- Godt med rapport istedet for 4 timers eksamen

1.4 I think that the examination form and content corresponded to the learning objectives of the course.

[View learning objectives]

- Completely agree 15 65.2%
- 3 13.0%
- 5 21.7%
- 0

- Completely disagree 0

1.5 Explanation / comments:

- Eksaminationsrapporten opsumerede hele kursets indhold på en utroligt elegant og lærrig måde!

- Hence you work individually a lot of time goes towards documentation, and writing a report instead of gaining more insight into rotor dynamics
1.6 Further comments / suggestions for improvements of the examination in this course:

- Det ville være rigtig rart med mere vejledning i hvordan matlab koden der bliver udleveret skal bruges og hvordan de opgaver man løser hænger sammen med matlab koden

- Great course!

- Jeg forestiller mig at dette kursus sagtens kulle laves til et 7.5 eller 10 ECTS kursus, for at lætte arbejdsburden og retfærdigøre den enorme læring der sker i kurset.

- Det er en rigtig god måde at gøre det på - at afslutte med et individuelt projekt. Måske en uge ekstra til at aflevere, så man ikke har så mange projekter samtidigt.