

Course evaluation - SD2222 Vehicle Components 2023

Course analysis carried out by

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Course design

- The course features lectures that explore theories, methods, overarching concepts and their interrelationships, as well as providing insight into research and development work. These theories and methods are then applied in exercises, enabling students to practice and enhance their skills in identifying, formulating, and analysing events and issues related to various vehicle components.
- Two project assignments offer students the possibility to plan, apply relevant methods, execute tasks within a given framework and evaluate the outcomes. These group tasks involve addressing real-world problems, allowing students to demonstrate their teamwork skills.
- In the project assignments, students also demonstrate their proficiency in integrating knowledge and analysing and assessing phenomena, issues and situations, even with limited information. In their reports, the students are allowed to present and discuss their conclusions, along with the supporting knowledge and arguments.
- Two computer exercises focus on the application of vehicle analysis using numerical methods. Here, students can showcase their ability to model, simulate, predict and evaluate events using both simple MATLAB models and high-fidelity multi-body models with ADAMS/Car.
- A practical field measurement is conducted at the beginning of the course, where students collect their own experimental data to provide input for the first project assignment. At the end of the course, a guest lecturer from the vehicle industry is invited to share insights on current research and development with the students.
- The examination includes a written exam (6 credits, grade A-F) and approved assignments (2 credits, pass/fail).

The students' workload

The average self-reported workload among the students who responded is about 15 hours/week, which is rather similar to the workload reported previous years. Some student comments: Workload is perfect. Enough to properly understand the lectures and put them to use while not being overwhelming.

The students' results

The students have succeeded quite well and with overall grades that are slightly higher than previous course offerings.

Overall impression of the learning environment

The students generally perceive the learning environment very positively, with an average rating of 6.4 on a scale of 1 to 7.

Questions about the learning experience that received the highest ratings (≥ 6.7) are related to comprehensibility ("I was able to learn from concrete examples that I could relate to", "The assessment of the course was fair and honest") and manageability ("I was able to get support if I needed it").

Other manageability-related questions with high ratings (≥ 6.5) involved variation and participation: "The course activities enabled me to learn in different ways", "I was able to learn by collaborating and discussing with others". Learning experience questions related to areas such as sufficient background knowledge and understanding of the subject matter received only marginally lower ratings (6.1 out of 7). No significant differences were observed among various student groups.

Analysis of the learning environment

Overall, students have a positive impression of the learning environment's fundamentals. For instance, students commented that the course is very interesting, very good course content with practical applications, the course principles are easy to understand, as well as highly interactive and useful projects.

Some of the best aspects mentioned by students include the weekly exercises, assignments and field tests. The quality of exercise sessions, handouts and study materials were also noted among the best aspects. One student suggests that more computer labs might be helpful and another that some of the brake component derivations were difficult to follow.

Priority course development

The course evaluation indicates that the students had a generally highly positive learning experience. In past years, feedback has at times pointed out the need to improve the exercise sessions by adapting the pace and making the step-by-step problem solving more interactive. This year's evaluation suggests that the performed changes have had a positive impact. Minor revisions of the study material are planned to be performed as next step.

Other information

The course evaluation was completed by 19% of the students in the class. Consequently, the conclusions may not fully represent the average response of the student group.