THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Race car monocoque development**
Author's name:	**Leygues Antoine Henri Roland**
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Automotive, Combustion Engine and Railway Engineering
Thesis reviewer:	Ing. Lukas Pacon
Reviewer's department:	CTU in Prague

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**challenging**

How demanding was the assigned project?

The assigned project was challenging, involving the design and analysis of a race car monocoque. The complexity of the task required a deep understanding of composite materials, Finite Element Analysis (FEA), and manufacturing processes. The task's demands were high due to the need for compliance with FIA regulations and the goal of optimizing weight and structural integrity.

Fulfilment of assignment	**fulfilled**

How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.

The thesis generally fulfills the assigned task by addressing the primary goals of designing and analyzing a monocoque. However, there are areas where the coverage is incomplete or overextended. The presentation of load cases could be improved by organizing them more systematically and providing clearer explanations for each case. Moreover, the justification for dismissing model results where values exceed 1 is insufficient. A more thorough explanation or reconsideration of these results is necessary to strengthen the analysis's credibility.

Activity and independence when creating final thesis	**C - good.**

Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.

The student demonstrated a degree of independence and initiative in developing the thesis. However, communication with the student was often challenging, with significant delays in responses to questions or feedback. There were instances where it took several weeks to receive a reply, which affected the smooth progression of the work. Despite these challenges, the student managed to meet the overall deadlines, but more consistent communication would have facilitated a more efficient supervisory process.

Technical level	**C - good.**

Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?

The student effectively employed their expertise in composite materials and structural analysis, demonstrating an understanding of the subject matter. However, the handling of values above 1 in the model results is concerning. The dismissal of these results without sufficient justification weakens the technical quality of work. Additionally, the quality of images used to present results is not as good as it could be.

Formal level and language level, scope of thesis	**A - excellent.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

The thesis is generally well-structured and organized logically.

Selection of sources, citation correctness	**B - very good.**
Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?	
The thesis makes adequate references to previous work on the topic, and the selection of sources appears to be appropriate. However, the distinction between the student's original work and existing research could be clearer.	

Additional commentary and evaluation (optional)
Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.
Overall, the thesis presents a well-conceived design and analysis of a race car monocoque. The student has demonstrated skills in using FEA tools and an understanding of composite materials. The thesis's weaknesses lie in the presentation of visual data and the insufficient justification for certain model results. Addressing these issues would significantly improve the quality and reliability of the findings.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

In conclusion, the thesis shows a good level of understanding and application of complex engineering principles. While the technical depth is good, the quality of visual presentations and some methodological explanations need improvement. Based on the strengths in technical content and the identified areas for improvement, a suggested grade is C.

The grade that I award for the thesis is **C - good.**

Questions:

FEM Model for carbon fibers must be filled with a lot of data, how did you get these data and what parameters you needed?

Date: **27.8.2024**   Signature: