

SUPERVISOR'S EVALUATION OF THE MASTER'S THESIS

Student: Farouk Olatunji Ligali

Supervisor: Ing. Dušan Hrabec, Ph.D.

Study program: Engineering Informatics

Specialization: Software Engineering

Academic year: 2024/2025

Master's Thesis topic: Vehicle routing problem with soft time windows: Analysis of computational complexity and sensitivity

Evaluation:

	A	B	C	D	E	F
Evaluation: A – Best; F – Unsatisfactory						
1. Fulfilment of all points of the assignment	☐	☒	☐	☐	☐	☐
2. Suitability of chosen resolution methods	☐	☒	☐	☐	☐	☐
3. Division of work (chapters, subchapters, paragraphs)	☐	☐	☒	☐	☐	☐
4. Working with literature and citations	☐	☒	☐	☐	☐	☐
5. Level of linguistic elaboration	☒	☐	☐	☐	☐	☐
6. Formal level of work	☐	☒	☐	☐	☐	☐
7. Theoretical part elaboration quality	☐	☒	☐	☐	☐	☐
8. Practical part elaboration quality	☐	☒	☐	☐	☐	☐
9. Achieved results of the work	☐	☒	☐	☐	☐	☐
10. Contribution of the thesis and its exploitation	☐	☒	☐	☐	☐	☐
11. Cooperation of thesis author with the supervisor	☐	☒	☐	☐	☐	☐

Result of the plagiarism test:

The work was assessed in terms of plagiarism with the result 2 % identity. Work is not plagiarism.

Overall evaluation of the thesis:

The resulting mark is not the average of all of the abovementioned evaluations. The mark is awarded by the thesis supervisor according to their deliberations and the ECTS classification scale:

A – Excellent, B – Very good, C – Good, D – Satisfactory, E – Sufficient, F – Insufficient.

Grade F also means “I do not recommend this thesis for defence.”

I recommend this diploma thesis for its defence and suggest the following evaluation:

B - Very Good.

In the case of an “F – Insufficient” grade, provide comments and the shortages of the thesis and the reasons for this assessment.

The submitted master's thesis focuses on the Vehicle Routing Problem with Soft Time Windows (VRP-STW), a relevant and practically motivated variant of the classical vehicle routing problem. The student carried out a well-structured literature review, covering both mathematical formulations and solution algorithms used for this class of problems. In the applied part of the thesis, he proposed, implemented, and tested his own computational approach on illustrative instances, demonstrating a solid understanding of both theory and practice.

The student developed the model and algorithm using the Python programming language. The implementation is functional and correctly follows the described methodology. However, in at least some environments (notably Windows), the code may require additional setup—such as manual installation of required packages—before it can be successfully executed. This is a minor but notable point for users aiming to reproduce the results.

A significant portion of the thesis was completed during the student's Erasmus stay at Molde University College in Norway, where he had the opportunity to collaborate with Prof. Lars Magnus Hvattum, a leading expert in the field of operations research. This international collaboration positively contributed to the overall quality and depth of the work. The student approached the task independently, demonstrated strong analytical thinking, and showed clear competence in applying theory to computational practice.

The thesis has both publishing and application potential, particularly if the student decides to continue his collaboration with his supervisor and further develop the presented methods. I recommend the thesis for defense and propose the final grade B (Very Good).

Date: 6.6.2025

Thesis Supervisor's Signature: