



Operational Research II Requirements

1. The final test will include both practical tasks (computational) and questions in the field of theory. The test is evaluated by a maximum of **40 points**.
2. Active participation at exercises evaluated by a maximum of **10 points**.
3. Verbal exam evaluated by a maximum of **30 points**.
4. Elaboration of seminar work (Travelling Salesman Problem, **20 points**).

Instructions for elaboration of seminar work

Travelling Salesman Problem. The work is evaluated with a maximum of **20 points**. You can create a 2-member team.

The student defines his/her own problem, sets the list of customers, creates a distances table, formulates a mathematical model and solves it in Excel or MPL for Windows. Finally, the student interprets the results. **Elaborating the seminar work, it is necessary to use the template of the seminar work from the document server in AIS.**

Scope of work: 6-10 pages.

Recommended work structure:

Introduction.

1. Theoretical background of Travelling Salesman Problem, literature review, examples of real application (find them in journals).
2. Definition of the student's problem. Create a map related to the problem.
3. Distances table, mathematical model.
4. Problem solving.
 - 4.1. Use the *nearest neighbor method* to find a feasible solution.
 - 4.2. Use the *mathematical model* to find the optimum solution (in MS Excel solver or in MPL for Windows). Be sure to indicate which program you used for the solution.
 - 4.3. Interpretation and comparison of results (for both solutions, use the map for interpretation). In the appendices you can list the mathematical model in MPL for Windows, and the printscreen of the Excel table.

Conclusion.

References.

List of figures and tables.

List of appendices.

In the area of **Coursework Submissions**, submit seminar work in PDF, enclose the MPL and Excel files. **If you work in a team, both members must submit the same files individually.**