

Mathematical Programming II

Assessment Assignment - Goal Programming

Academic Year 2026/2027



Consider a real-world situation (the data need not be real) and propose a problem that can be addressed using a goal programming model, with **at least four decision variables and three goals**, at least two of which must be conflicting.

1. Explain why the problem can be formulated as a goal programming problem and formulate the corresponding model.
2. Solve the problem without priorities and analyse the solutions.
3. Introduce weights, solve the problem, and analyse the solutions, comparing them with those obtained in Question 2.
4. Consider the problem with three priority levels, solve it, and analyse the solutions.
5. Consider the problem with two priority levels, while retaining the three goals identified above. Solve it and analyse the solutions obtained.
6. Study the effect of introducing weights into the model defined in Question 5.

Submission and presentation guidelines:

The answers to the questions must be submitted as a report of no more than **8 pages**. The models must be solved using appropriate software, and the implemented code must also be submitted. The presentation must not exceed 10 minutes.

The report must be submitted in *pdf* format and the code in a zipped folder, via Fénix, by **5 October 2026 at 23:59**.