

## Examen Project management (master business engineering) Januari 2022

- 1. Calculate resource lower bound & sequence lower bound for a given delaying alternative.
- 2. labeling algoritme Kelley Fulkerson
- 3. stc algoritme improvement heuristic
- 4. 5 small questions
  - a. how many minimal forbidden sets
  - b. FS' =
  - c. constraints of on/off time index variables
  - d. question about daughter of one point crossover
  - e. what is the cost of 12-24/13

## **Environmental and Transportation Economics**

- 1. Road congestion, similar to exercise 2 for Chapter 3
  - a. Compute the ideal arrival time and capacity of the airport
  - b. Suggestion to let all airlines bid for the right to arrive at a given moment. How much would this proposal generate?
  - c. The capacity is increased with a third
    - i. What is the welfare benefit without fine toll
    - ii. What is the welfare benefit with fine toll
- 2. Assess the following statements:
  - a. "The marginal cost for Public Transport is 0, so the fare has to be 0."
  - b. "The frequency of each bus line has to be at least 4 busses an hour"
- 3. Exercise with Marginal Abatement Cost: what is the permission price, total cost for each of the sectors and total social cost?