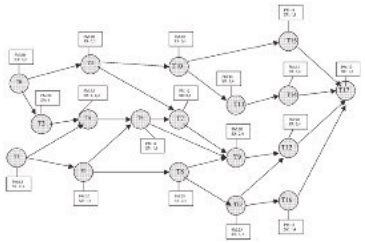
OPM 662 - Business Analytics: Modeling and Optimization

Key topics:

- Applications of optimization models
- Business Analytics approaches
- Managerial insights and numerical studies
- Business Analytics tool for modelling and optimization



GAMS

Minimize:

$$\sum_{m=\underline{M}+1}^{\overline{M}} z_m$$

Subject to:

$$\sum_{i=1}^{I} t_i(x_{im} + y_{im}) \leq C \cdot z_m \qquad m = \underline{M}+1, \ldots, M$$

$$\sum_{m=1}^{M} (x_{im} + y_{im}) = 1 \qquad i = 1, \ldots, I$$

$$\sum_{m=1}^{M} (M - m + 1)(x_{rm} - x_{sm}) \geq 0 \qquad \forall (r,s) \in P$$

$$\sum_{m=1}^{M} (M - m + 1)(y_{sm} - y_{rm}) \geq 0 \qquad \forall (r,s) \in P$$

Grading: (6 ECTS)

- Assignments (individual and in groups) and written/implementation exam

Teachers: Prof. Dr. Raik Stolletz, Amir Foroughi, Matteo Biondi

First session: Wednesday, February 20, 2019 (room L7, 3-5, 3.58)

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I Applications of optimization models

- Aggregated production planning
- Lot sizing and detailed scheduling
- Workforce planning
- Aircraft sequencing and scheduling

II Business Analytics approaches

- Mathematical modeling & optimization algorithms
- Heuristic solutions for large-scale problems
- Scenario approaches for robust planning

III Managerial insights and numerical studies

- Design of numerical studies
- Sensitivity analysis
- Interpretation of solutions

IV Practical insights

- Business Analytics tool for modeling and optimization
- Guest lecture by business analytics professionals