At the Chair of Logistics and Supply Chain Management of TUM School of Management we are looking for an interested and qualified student to conduct his/her

Master Thesis

On the topic:

**Optimization via Simulation for assembly line design in the digitalized world**

Asynchronous assembly lines are widely used in manufacturing. An inherent characteristic of these lines is the processing time variability, especially since processing of jobs in workstations are often conducted by human operators. The design of assembly lines is a challenging problem due to the uncertainties and other complexities involved. The exact analysis and optimization of performance measures are usually limited to small problem sizes and phase-type distributions. In this thesis, the assembly line design problem will be investigated by using a simulation optimization approach for enabling analysis under more realistic assumptions such as; higher number of production stages, normally distributed and state dependent production times.

**Selected research tasks:**

- Perform a literature review
- Develop a simulation model
- Perform a numerical analysis using simulation optimization
- Prepare a final report

**Requirements:**

This thesis is particularly suitable for candidates who are in the TUM-BWL Master program with a major in Supply Chain Management and have a strong interest in simulation modeling and optimization. Experiences with simulation software (i.e. Anylogic) are required. The study report must be prepared in English.

**Begin:** from now on
**Advisor:** Miray Közen
**Application:** Email with curriculum vitae and transcripts of records to logtheses.wi@tum.de