

Einladung zum Vortrag

Vortragender: M. Sc. Nicklas Klein, Quantitative Methoden der Betriebswirtschaftslehre, Universität Bern

Zeit: Dienstag, 30.09.2025, von 11.00 Uhr bis 12.30 Uhr

Ort: Raum H005, Gebäude 3

Thema: Flow Shops with Reentry: The Total Weighted Completion Time Objective

Abstract

Scheduling manufacturing processes efficiently is a key challenge in many supply chains across a wide range of industries. We consider manufacturing processes in which the jobs traverse and reenter a flow shop multiple times, i.e., after a job has traversed the shop and completed its processing on the last machine, it must return to the first machine and traverse the shop again until it has completed all its required loops. Such a setting is referred to as a flow shop with reentry and has numerous industrial applications, e.g., in the electronics industry. In this talk, we focus on minimizing the total weighted completion time for reentrant flow shops with unit processing times. We first discuss properties that characterize the class of optimal schedules and establish the computational complexity of the problem. Then, we present solution algorithms based on priority rules and dynamic programming. Finally, we discuss extensions to more general processing time structures and machine environments.

Interessenten sind herzlich eingeladen.