

# OPTIMISATION OF PRECEDENCE-CONSTRAINED PRODUCTION SEQUENCING AND SCHEDULING USING GENETIC ALGORITHMS

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## TÓM TẮT:

This paper presents the development of a Genetic Algorithm (GA) for optimisation of precedence-constrained production sequencing and scheduling problems. This class of problems requires a double optimisation - for sequencing and scheduling - at the same time. Due to nature of constraints, novel strategies for encoding chromosomes, crossover, mutation operations and handling constraints have been developed. The GA developed to solve this class of problems uses variable length chromosomes and its capability is demonstrated using a complex and realistic case study. The result obtained for the case study shows that the proposed GA is applicable to real-life precedence-constrained production sequencing and scheduling optimisation problems, which are ubiquitous to production and manufacturing environments.