CHAPTER 60

TECHNOLOGY PRODUCTION AND INDUSTRIAL ENGINEERING

Doctoral Theses

470. AGRAWAL (Narayan)
Application of Analytic Hierarchy Process in Manufacturing Systems.
Supervisors : Dr. Sanjay Sharma and Dr. A. P. Mittal
Th 16511

Abstract

This work investigates the behaviours of production control policies i.e. kanban, CONWIP and hybrid systems with the help of proposed model. The data-sets considered are such for which the production rate almost mathces the demands rate or service level is more than 98% with the lowest WIP for the optimal design of production line. The performance of a manufacturing system is then compared for various control policies with different performance criteria such as average utilization of machine and buffer, service level, WIP, throughput, unsatisfied demand and total cost.

Contents

1. Introduction. 2. Literature survey. 3. Manufacturing systems and control policies. 4. The analytic hierarchy process (AHP) and selection problem. 5. The proposed model. 6. Extension of the AHP (F-AHP) and application for the multi product model. 7. Conclusions and further research. Bibliography.

471. PRAMOD KUMAR M
Modeling of Flexibility Aspects in FMS.
Supervisors : Prof. S. K. Garg and Prof. Subhash Wadhwa
Th 16512

Abstract

This work has designed and analysed of different types of flexibilities in flexible manufacturing systems under uncertainties, the impact of different flexibilities on the performance of the manufacturing systems, the sequencing and dispatching rules under routing flexibility and pallet availability. Structuring of design variables in implementing FMS, by simulation modeling using ARENA 7.1 aliong with other modeling tools like interpretative structural modeling and analytical hierachical modeling using expert choice.

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