CC5007 DESIGN FOR CELLULAR MANUFACTURING SYSTEMS

DETAILED SYLLABUS

UNIT I INTRODUCTION

Introduction to Group Technology, Limitations of traditional manufacturing systems, characteristics and design of groups, benefits of GT and issues in GT.

UNIT II CMS PLANNING AND DESIGN

Problems in GT/CMS - Design of CMS - Models, traditional approaches and non-traditional approaches -Genetic Algorithms, Simulated Annealing, Neural networks.

UNIT III IMPLEMENTATION OF GT/CMS

Inter and Intra cell layout, cost and non-cost based models, establishing a team approach, Managerial structure and groups, batch sequencing and sizing, life cycle issues in GT/CMS.

UNIT IV PERFORMANCE MEASUREMENT AND CONTROL

Measuring CMS performance - Parametric analysis - PBC in GT/CMS, cell loading, GT and MRP - framework.

UNIT V ECONOMICS OF GT/CMS:

Conventional Vs group use of computer models in GT/CMS, Human aspects of GT/CMS - cases.

REFERENCES

1. Askin, R.G. and Vakharia, A.J., G.T " Planning and Operation, in The automated factory-Hand

2. Book: Technology and Management ", Cleland.D.I. and Bidananda, B (Eds), TAB Books , NY, 1991.

3. Burbidge, J.L. Group "Technology in Engineering Industry ", Mechanical Engineering pub.London, 1979.

4. Irani, S.A. " Cellular Manufacturing Systems ", Hand Book

5. Kamrani, A.K, Parsaei, H.R and Liles, D.H. (Eds), " Planning, design and analysis of cellular manufacturing systems ", Elsevier, 1995

OBJECTIVES:

- At the end of this course the student should be able to understand Concepts and applications of Cellular manufacturing systems
- Traditional and non-traditional approaches of Problem solving Performance measurement
- Human and economical aspects of CMS.