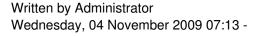
Written by Administrator Wednesday, 04 November 2009 07:13 -
Subject Code
06ME72
IA Marks
25
No. of Lecture Hrs./ Week
04
Exam Hours

PART - A

Written by Administrator Wednesday, 04 November 2009 07:13 -
03
Total No. of Lecture Hrs.
52
Exam Marks
100



### Unit - 1

**Computer Integrated Manufacturing Systems:** Introduction, Automation definition, Types of automation, CIM, processing in manufacturing, Production concepts, Mathematical Models-Manufacturing lead time, production rate, components of operation time, capacity, Utilization and availability, Work-in-process, WIP ratio, TIP ratio, Problems using mathematical model equations.

### 8 Hours

## Unit - 2

**High Volume Production System:** Introduction Automated flow line-symbols, objectives, Work part transport-continuous, Intermittent, synchronous, Pallet fixtures, Transfer Mechanism-Linear-Walking beam, roller chain drive, Rotary-rack and pinion, Rachet & Pawl, Geneva wheel, Buffer storage, control functions-sequence, safety, Quality, Automation for machining operation.

### 6 Hours

Written by Administrator
Wednesday, 04 November 2009 07:13 -

Unit - 3

Analysis of Automated Flow line & Line Balancing: General terminology and analysis, Analysis of Tranfer Line without storage-upper bound approach, lower bound approach and problems, Analysis of Transfer lines with storage buffer, Effect of storage, buffer capacity with simple problem, Partial automation-with numerical problems, flow lines with more than two stages, Manual Assembly lines, line balancing problem.

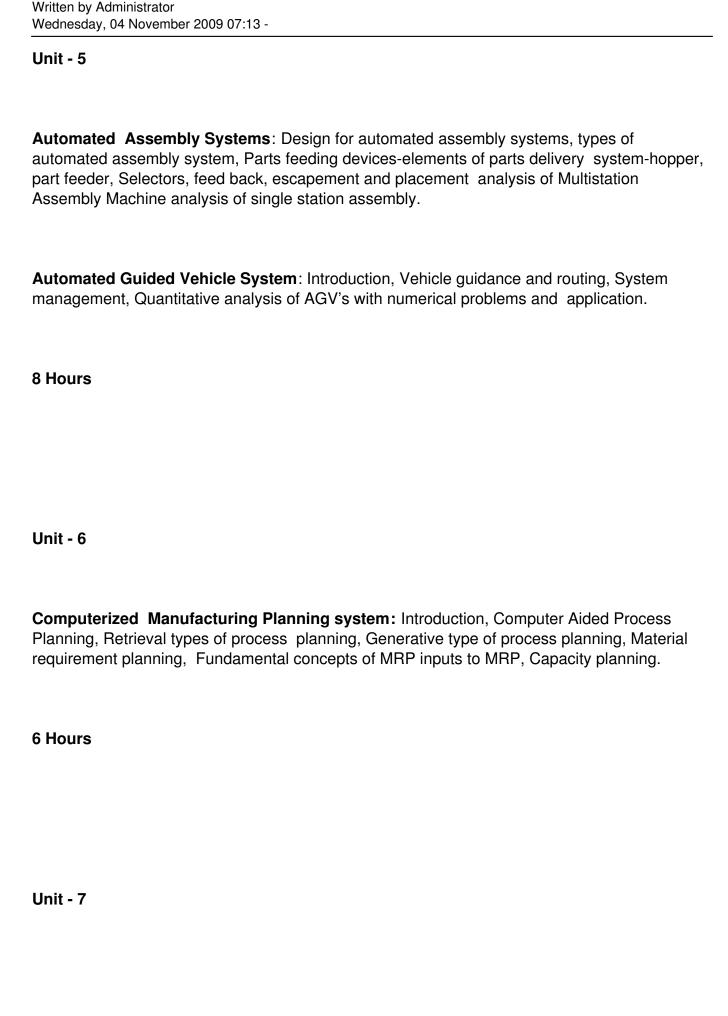
6 Hours

Unit - 4

**Minimum rational work element:** Work station process time, Cycle time, precedence constraints. Precedence diagram, Balance delay methods of line balancing-largest Candidate rule, Kilbridge and Westers method, Ranked positional weight method, Numerical problems coverin g above methods and computerized line balancing.

6 Hours

PART - B



Written by Administrator

Wednesday, 04 November 2009 07:13 -CNC Machining Centers: Introduction to CNC, elements of CNC, CNC machining centers, part programming, fundamental steps involved in development of part programming for milling and turning. 6 Hours Unit - 8 Robotics: Introduction to Robot configuration, Robot motion, programming of Robots end effectors, Robot sensors and Robot applications. [This is required for CIM automation lab 06MEL77] 6 Hours **Text Books:** Automation, Production system & Computer Integrated manufacturing, M. P. Groover" Person India, 2007 2 edition.

CAD/CAM by Zeid, Tata McGraw Hill.

2.

