Research Topics – IE 515

Fall 1999

1. Comparisons of Kanban and CONWIP
2. Shop floor control
3. Different CONWIP configurations
4. Shop floor control with shared resources
5. Shop floor control with multiple product families
6. CONWIP Assembly lines
7. Pull from the bottleneck methods
8. Finite capacity scheduling
9. Integrated MRP planning with pull execution
10. Visibility improvement in managing raw materials
11. Setting safety stocks, lead times, and order frequencies for purchased components
12. Managing spare parts
13. Traditional and modern views of capacity management
14. Designing new production lines
15. Capacity allocation and line balancing
16. Supply chain management
17. Scheduling cellular manufacturing systems
18. Designing cellular manufacturing systems
19. Scheduling FMS systems
20. Two-level master production scheduling
21. Methods for constructing planning bills of material
22. Advanced Planning Systems

23. CONWIP and Point of Use material Storage

24. Commonality of parts and bill of material depth

25. Distribution requirements in manufacturing planning and control systems

26. Manufacturing execution systems

27. Enterprise Resources Planning systems

28. Manufacturing planning and control for the process industries

29. Designing distribution systems

30. Impact of engineering design on manufacturing system complexity

31. Reducing lead time of engineering design

32. Six sigma methodologies