

Fakulti/Pusat Pengajian (<i>Faculty/Centre</i>) : FACULTY OF MECHANICAL AND MANUFACTURING ENGINEERING			Mukasurat (<i>Page</i>): 1/3		
Kod Kursus (<i>Course Code</i>):		Nama Kursus (<i>Course Name</i>) : MANUFACTURING AND OPERATION ANALYSIS			
Kursus Pra Syarat (<i>Prerequisite Course</i>) : NIL		Kredit (<i>Credit</i>) : 3	Kuliah (<i>Lecture</i>) : 3	Tutorial : 1	Amali (<i>Practical</i>): 0
Edisi (<i>Edition</i>) : 1		Tarikh Keluaran (<i>Published date</i>) : SEPT. 2010			
MATLAMAT (<i>GOALS</i>): The aim of the course is to provide understanding, exposure and knowledge on the concepts and analytical methods used to support operations management function in the scope of manufacturing and operations analysis.					
HASIL PEMBELAJARAN (<i>LEARNING OUTCOMES</i>): At the end of this course, the students will be able to: 1. Propose solution to manufacturing and operation problems using related theory and analytical methods. (C5, PLO4) 2. Organize in groups to study and present the application of advanced manufacturing and operation analysis methods based on given topics. (P5, PLO5) 3. Explain the main concepts and methods obtained from literatures to professionally analyze the manufacturing and operation system. (A4, PLO6)					
SINOPSIS (<i>SYNOPSIS</i>): Operations Strategy And Competition, Forecasting, Aggregate Planning, Linear Programming, Inventory Control, Supply Chain Management, Push And Pull Production Control Systems, Operations Scheduling.					
ISI KANDUNGAN (<i>CONTENT</i>): 1.0 OPERATIONS STRATEGY AND COMPETITION (3 HOURS) 1.1 A framework for operations strategy 1.2 The classical view of operations strategy 1.3 Competing in global marketplace 1.4 Strategic initiatives :Reengineering the business process (JIT, Time-based competition, Competing on quality) 1.5 Process and product lifecycle 1.6 Learning and experience curves 1.7 Capacity growth planning 2.0 FORECASTING (6 HOURS) 2.1 Introduction to characteristics of forecast, subjective forecasting methods, objective forecasting methods 2.2 Evaluating forecast error 2.3 Moving averages, exponential smoothing, and their comparisons 2.4 Trend-based methods 2.5 Methods for seasonal series					

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Edisi (Edition) : 1		Tarikh Keluaran (Published date) : SEPT. 2010		
2.6 Model identification and monitoring 2.7 Advanced topic in forecasting 3.0 AGGREGATE PLANNING (3 HOURS) 3.1 Aggregate units of production 3.2 Aggregate planning problem 3.3 Costs in aggregate planning 3.4 Prototype problem solving for aggregate planning 3.5 Disaggregating aggregate plans 4.0 LINEAR PROGRAMMING (6 HOURS) 4.1 Solving linear programming problems graphically 4.2 Solving linear programming problems with Excel 4.3 Interpreting the sensitivity report 4.4 Recognizing special problems 5.0 INVENTORY CONTROL (6 HOURS) 5.1 Review on EOQ model and extension to finite production rate 5.2 Quantity discount models 5.3 Resource-constrained multiple product system 5.4 EOQ models for production planning 5.5 Inventory control subjects to uncertain demand (Newsboy model) 5.6 ABC analysis and exchange curves 6.0 SUPPLY CHAIN MANAGEMENT (3 HOURS) 6.1 Supply chain as a strategic weapon 6.2 Solving transportation problems using linear programming 6.3 General network formulations 6.4 Determining delivery routes in supply chains 6.5 Designing products for supply chain efficiency 6.6 Role of information in the supply chain 6.7 Supply chain in global environment 7.0 PUSH AND PULL PRODUCTION CONTROL SYSTEMS (7 HOURS) 7.1 Basics of MRP and JIT 7.2 The explosion calculus 7.3 Alternative lot-sizing schemes (EOQ, Silver-meal, Least unit cost, Part period balancing) 7.4 Lot sizing with capacity constraints 7.5 Shortcoming of MRP 7.6 JIT fundamentals, advantages and disadvantages 7.7 Comparison of MRP and JIT				

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8.0 OPERATIONS SCHEDULING (8 HOURS) 8.1 Job shop scheduling terminology 8.2 Comparison of specific sequencing rules (FCFS, SPT, EDD, CR) 8.3 Sequencing theory for a single machine 8.4 Sequencing algorithms for multiple machines 8.5 Stochastic scheduling 8.6 Assembly line balancing 8.7 Queuing theory					
PENILAIAN (ASSESSMENT): Continuous Assessment 60% Final exam 40%					
RUJUKAN (REFERENCES): (1) Nahmias, S. (2009). <i>Production and Operations Analysis</i> . 6 th Edition. New York: McGraw-Hill. (2) Stevenson, W.J. (2007). <i>Operations Management</i> . 9 th Edition. Boston: McGraw-Hill. (3) Heizer, J. and Render, B. (2008). <i>Principles of Operations Management</i> . 7 th Edition. New Jersey: Pearson. (4) Krajewski, L.J., Ritzman, L.P. and Malhotra, M.K. (2007). <i>Operations Management</i> . New Delhi : Prentice Hall.					
Disediakan oleh (Prepared by): Tandatangan (Signature): Nama (Name) : Dr.Sh Salleh bin Sh Ahmad Jawatan (Post): Senior Lecturer Tarikh (Date): 1 September 2010		Disemak oleh (Checked by) : Tandatangan (Signature): Nama (Name): Prof. Dr. Sulaiman bin Hj. Hasan Jawatan (Post): Dean Tarikh (Date): 1 September 2010			