

REFERENCE BOOKS:

1. **'Smart Materials and Structures'**, Banks HT, RC Smith, Y Wang, Massow S A, Paris 1996
2. **G P Gibss' Adaptive Structres'**, Clark R L, W R Saunolers, Jhon Wiles and Sons, New York, 1998
3. **An introduction for scientists and Engineers'**, Esic Udd, Optic Sensors : Jhon Wiley & Sons, New York, 1991 (ISBN : 0471830070)

AGILE MANUFACTURING

Subject Code	: 10ME765	IA Marks	: 25
Hours/Week	: 04	Exam Hours	: 03
Total Hours	: 52	Exam Marks	: 100

PART – A**UNIT - 1**

Agile Manufacturing: Definition, business need, conceptual frame work, characteristics, generic features.

06 Hours

UNIT - 2

Developing Agile Manufacturing: Enterprise, Strategies, integration of organization, workforce and technology, reference models, examples.

07 Hours

UNIT - 3

Integration Of Product /Process Development: Principles, Robust design approach, Approaches to enhance ability in manufacturing, Role of QFD, Managing people in Agile organization, Approaches.

06 Hours

UNIT - 4

Application Of It/Is Concepts In Agile Manufacturing: Strategies, Management of complexities and information. flow, approaches,

applications of multimedia to improve agility in manufacturing, system concepts.

07 Hours

PART – B

UNIT - 5

Agile Supply Chain Management: Principles, IT/IS concepts in supply chain management, enterprise integration and management in agile manufacturing, concepts, Agility, Adaptability and learners – comparison of concepts.

07 Hours

UNIT - 6

Computer Control Of Agile Manufacturing: CAPP for Agile Manufacturing, Aggregate capacity planning and production line design / redesign in Agile manufacturing, Cellular manufacturing, concepts, examples.

07 Hours

UNIT - 7

Corporate Knowledge Management In Agile Manufacturing: Strategies, strategic options in Agile manufacturing, Role of standards.

06 Hours

UNIT - 8

Design Of Skill & Knowledge: Enhancing technology for Machine tool system, Resumption of design requirement geometry, definition, methods, decision support for selection of cutting parameters, design enhancements, parametric approach only.

06 Hours

TEXT BOOKS:

1. **‘Agile Manufacturing-** Forging New Frontiers’, **Poul T Kidd**, Amagow Co. UK, ISBN-0-201-63163-6, 1994
2. **“Agile Manufacturing”**, A Gunasekharan, the 21st Century Competitive strategy, ISBN -13 978-0-08-04 3567-1, Elsevier Press, India

REFERENCE BOOKS:

1. **O Levine Transitions to Agile Manufacturing**, Joseph C Moutigomery and Lawrurence – Staying Flexible for competitive advantage, ASQC quality press, Milwaukee. Wisconsin, USA 1996
2. **Agile Development for Mass Customization**, David M Andeson and B Joseph Pine, Irwin Professional Publishing, Chicago USA 1997

ROBOTICS

Subject Code	: 10ME766	IA Marks	: 25
Hours/Week	: 04	Exam Hours	: 03
Total Hours	: 52	Exam Marks	: 100

PART – A**UNIT - 1**

Introduction and Mathematical Representation of Robots: History of Robots, Types of Robots, Notation, Position and Orientation of a Rigid Body, Some Properties of Rotation Matrices, Successive Rotations, Euler Angles For fixed frames X- Y -Z and moving frame ZYZ. Transformation between coordinate system, Homogeneous coordinates, Properties of A/BT, Types of Joints: Rotary, Prismatic joint, Cylindrical joint, Spherical joint, Representation of Links using Denvit - Hartenberg Parameters: Link parameters for intermediate, first and last links, Link transformation matrices, Transformation matrices of 3R manipulator, PUMA560 manipulator, SCARA manipulator

07 Hours**UNIT - 2**

Kinematics of Serial Manipulators: Direct kinematics of 2R, 3R, RRP, RPR manipulator, puma560 manipulator, SCARA manipulator, Stanford arm, Inverse kinematics of 2R, 3R manipulator, puma560 manipulator.

06 Hours