DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT
MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY, JAMSHORO

Title of subject	:	**Advanced Manufacturing Technology** INM-705 (3+0)
Disciplines	:	Industrial Engineering and Management
Semester	:	(2nd Semester 1st Year)
Effective	:	21S -Batch and onwards
Credit Hours	:	Th=03 & Pr=00
Marks	:	Th: 100 & Pr: 00
Minimum Credit Hours	:	42 (For Theory)

Aims: The aim of the course is to give the awareness to students about s about scope of subject.

Objectives:

- To expose the students to Advanced Manufacturing Techniques in general and SME in specific.
- The course would make students apply latest technologies to the local environment and establish strategic alliance in top management support.

Contents:

Introduction to Advanced Manufacturing
Introduction to Advanced Manufacturing, History of Manufacturing, Manufacturing processes, Computers in Manufacturing, Automation in Manufacturing.
Advanced Manufacturing Technologies & Small Medium Enterprises: Computer integrated manufacturing. Characteristics of CIM. Small and medium enterprises. The ability to obtain and use appropriate scientific and technological information, Characteristics of SMEs,
Criteria for the Implementation of manufacturing techniques in SMES: Implementation issues of CIM. Implementation methodology. The implementation team (the project manager, manufacturing technology suppliers, information technology suppliers)
Flexible Manufacturing system
Introduction to FMS, Automated Manufacturing Systems, Automated Materials Handling System, Software and Design for FMS, Advantages of FMS, FMS System Components, CNC System Safety.
Structure characteristics, Number of products produced. Improvements in product development. Improvement in shop floor operation. Marketing objectives of the companies, market size of the companies, Impact on market share, lead time improvement, decrease in direct labor, improvements in planed delivery schedule, increased productivity, automated purchasing. Employee empowerment. Training and education. Incentive and rewards,
System Integration, Internet. Fax. E-mails. Multimedia. Electronic Data Interchange (EDI). Computer Aided Design/Manufacturing (CAD/CAM). Computer Aided Process Planning (CAPP). Automated Guided Vehicles (AGVs). Business Process Re-engineering (BPR). Material Requirement Planning (MRP-I). Manufacturing Resources Management (MRP-II).

Recommended Books:

1. Automation, Production systems, and Computer Integrated Manufacturing. By:Mikell P.Groover, Latest Edition
2. PHI Learning, New Delhi, Latest Edition
3. Computer Integrated Manufacturing. 3rd Edition By: James A.Rehag & Henry W. Kraebber Pearson Prentice Hall, New Jersey, Latest Edition
4. Production and operations management, By: Martin K.Starr.Biztantra, New Delhi, Latest Edition.
5. Management Policies of Computer Integrated Manufacturing Robotics, By: A. Gunasegaram, Latest Edition

Approval:	Board of Studies:	Res. No. 3.1	Dated: 27.08.2019
	Advanced Study & Research Board	Res. No. 171.20a	Dated: 15.02.2021
	Academic Council	Res. No. _____	Dated: _____