CIM (21-548)

Advanced Manufacturing Laboratory
Department of Industrial Engineering
Sharif University of Technology

Session # 20

Course Description

- *Instructor*
  - *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
  - *Email: FValilai@sharif.edu , Tel: 6616-5706*
  - *Website: Sharif.edu/~fvalilai*
- *Class time*
  - *Sunday-Tuesday   09:00-10:30*
- *Course evaluation*
  - *Mid-term   (30%)*
  - *Final exam   (50%)*
  - *Quiz   (5%)*
  - *Exercise   (15%)*

Advanced Manufacturing Laboratory, Department of Industrial Engineering, Sharif University of Technology
CIM (21548), Session # 20

2

Course Description *(Continued ...)*

- *Mid-term session:*
  - *Sunday: 16th Azar 1393, 09:00 ~ 10:30*
- *Final Exam:*
  - *Tuesday: 30th Dey 1393, 15:00 ~ 17:30*
- *Reference:*
  - *Schaefer, D., Cloud-based Design and Manufacturing (CBDM): A Service-Oriented Product Development Paradigm for the 21st Century, . London: Springer, 2014*

  - *Koren, Y., "The Global Manufacturing Revolution", Wiley, 2010*

  - *Nasr, A., "Computer-Based Design and Manufacturing An Information-Based Approach",Springer, 2007*

  - *Mitchell, F.H., "CIM Systems: An Introduction to Computer-Integrated Manufacturing", Prentice Hall College Div; 1St Edition edition (January 1991), ISBN: 978-0131332997*

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3

Course Description *(Continued..)*

- *Contents:*
  - *Globalization and Manufacturing Paradigms* *(8 sessions)*

  - *System Concepts* *(3 sessions)*

  - *Evolution of Manufacturing systems* *(2 sessions)*

  - *Manufacturing System Design* *(4 sessions)*

  - *Manufacturing Equipment Design* *(3 sessions)*

  - *Information flow in Manufacturing Systems* *(4 sessions)*

  - *Product design and Manufacturing System* *(3 sessions)*

  - *Manufacturing System Implementation* *(5 sessions)*

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CIM (21548), Session #1

5

Course Description *(Continued..)*

▪ *Contents:*
  ▪ *Information flow in Manufacturing Systems*   *(4 sessions)*
    ▪ *Evolution of computer hardware*

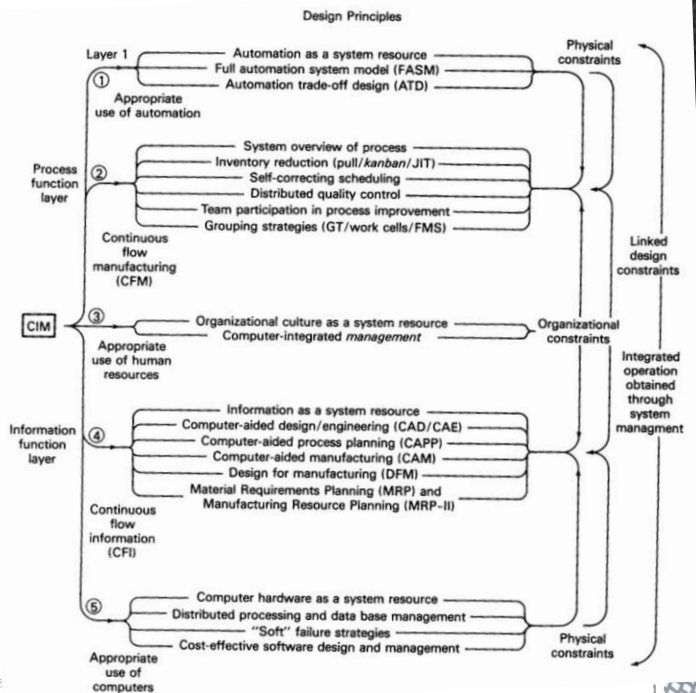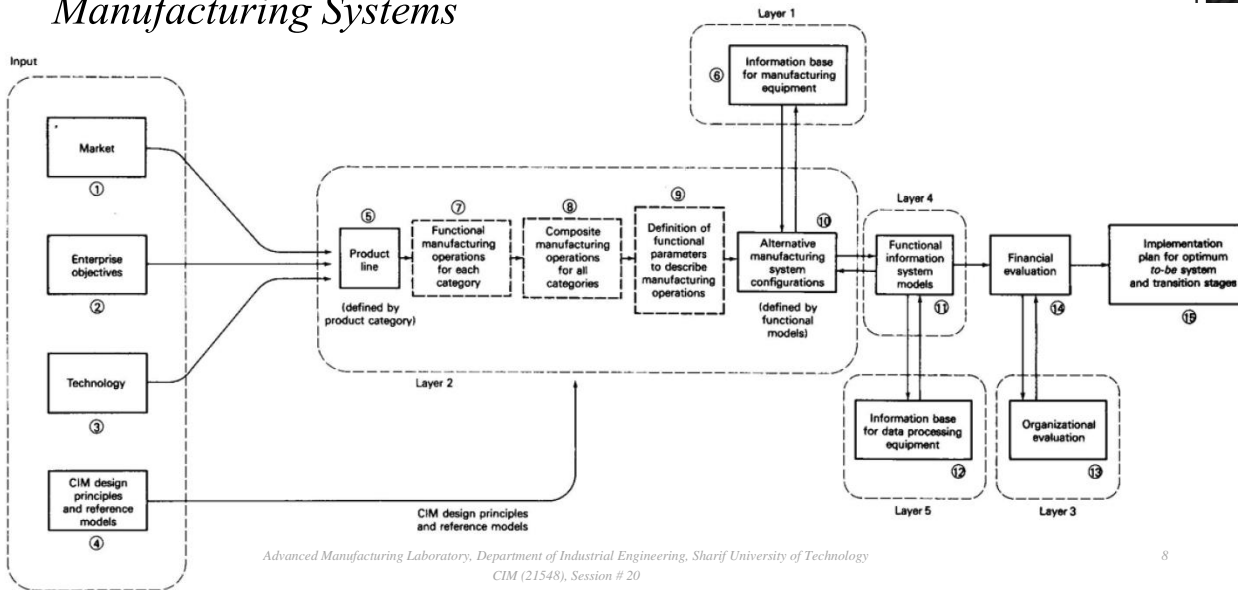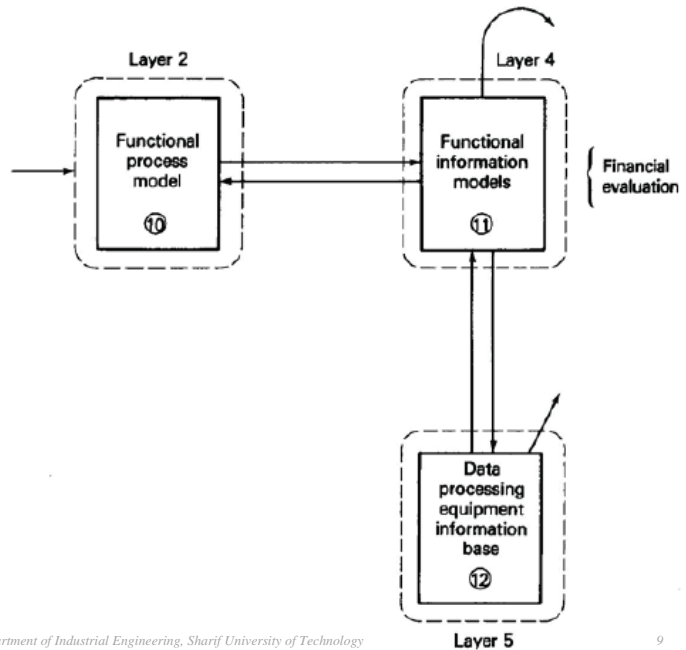   ▪ *The open system interconnect model for computer communication*

    ▪ *A strategy for comparing alternative approach to computer communications*

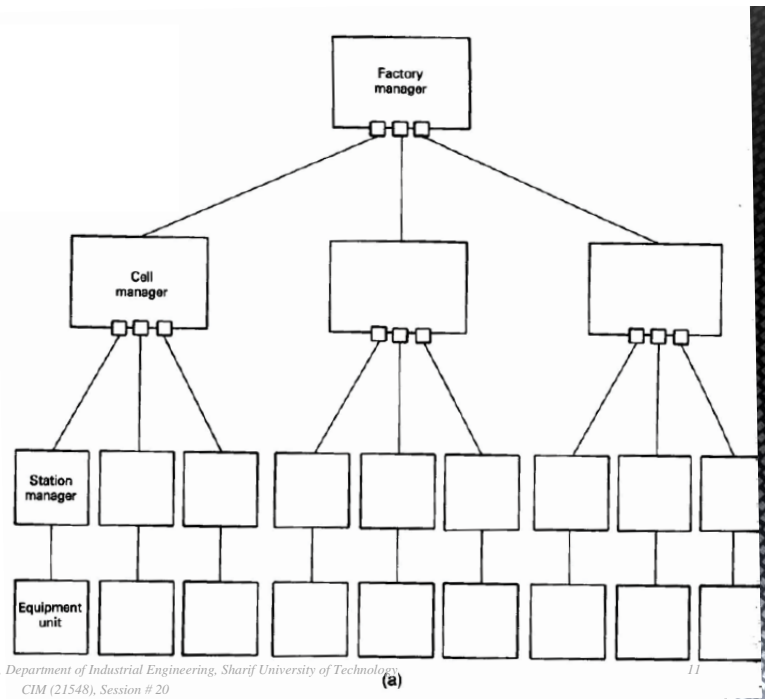   ▪ *Manufacturing Automation Protocol (MAP)*

Manufacturing System L

Information flow in Manufacturing Systems

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CIM (21548), Session # 20
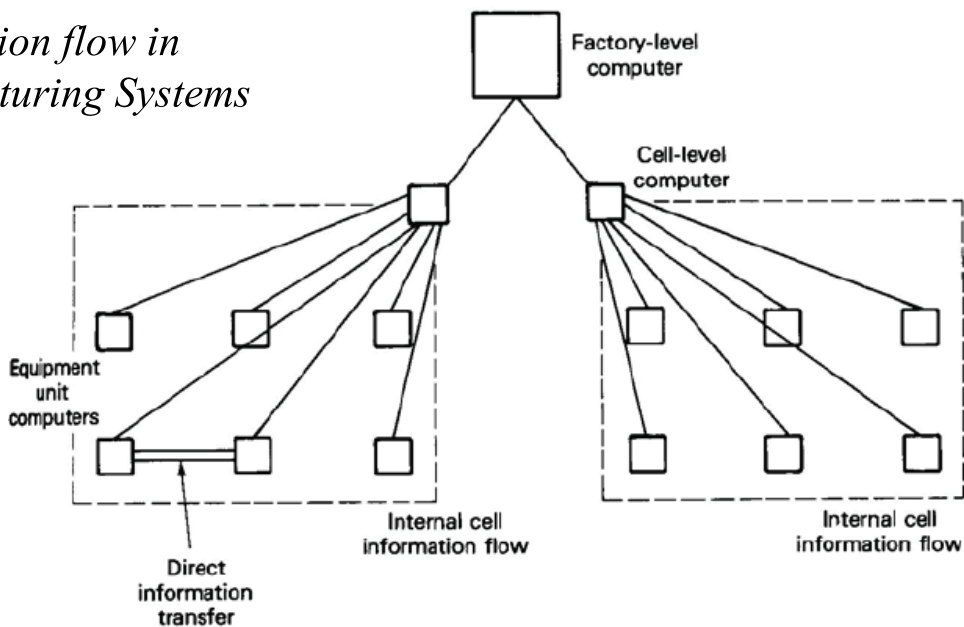
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Information flow in Manufacturing Systems

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CIM (21548), Session # 20

9

Information flow in Manufacturing Systems

Information flow in Manufacturing Systems

Information flow in Manufacturing Systems

Information flow in Manufacturing Systems

Information flow in Manufacturing Systems

| | TO | | | | |
Nodes of Work Cell	*(1)* Inspection Unit	*(2)* Assembly Unit	*(3)* Curing Oven	*(4)* Solder Reflow Unit	To Other Work Cells or Factory Information Base
(1) Inspection Unit		Product ID number; passed; variances revealed during inspection	Product ID number; passed	Product ID number; passed; variances revealed during inspection	Detailed computer record of each inspection task, by part and equipment ID number (software data log/upload)
(2) Assembly Unit			Product ID number; passed	Product ID number; exact placement of component	Detailed computer record of each assembly operation performed by part and equipment ID number (software data log/upload)
(3) Curing Oven				Product ID number; passed	Detailed computer record of time-temperature profiles by part and equipment ID number (software data log/upload)
(4) Solder Reflow Unit					Detailed computer record of each placement and reflow operation by part and equipment ID number (software data log/upload)
From Other Work Cells or Factory Information Base	Inspection criteria by product type (software download)	Components and placement by product type (software download)	Time-temperature profile by product type (software download)	Components and placement by product type (software download)	

FROM