

Computers in Manufacturing Enterprises (MEL 423) (July 2015 - Dec 2015)

By,
Vandana Srivastava

Myself!

Education

- ▶ MBA
Pace University, New York, USA
- ▶ Masters in Computational Mathematics
Arizona State University, Arizona, USA

Work

- ▶ **2nd year @IITD, taught MEL 423 and MEL 423**
- ▶ IBM Corporate HQ at Armonk, NY, USA
- ▶ 4 years in leading Engineering Colleges in India
- ▶ Arizona State University, USA

Overview of class

- ▶ 4 credit hours - Core Course
- ▶ Theory(3 hrs)+ Lab (2 hrs)
 - timing: Morning ? Default (2:00 - 4:00 pm, Mon/Thur)
- ▶ Assignments:
 - Quizzes / Lab assignments / Term Paper / Team Presentation / Exams - Minor 1&2, Major - 1
- ▶ 28 classes
 - Monday & Thursday (5:00 pm - 6:20 pm)

Distribution of Marks

- ▶ Minor 1, Minor 2: 10% each
- ▶ Major: 20%
- ▶ Quizzes - 25%
- ▶ Presentation / Term Paper - 10%
- ▶ Lab assignments- 20%
- ▶ (Lab + Class)Attendance - 5%

Overview of the class

- ▶ Email id : vsrivas.iit@gmail.com (for questions or comments)
- ▶ Course site: cime-mel423.weebly.com
 - Lecture slides
 - Course details
 - Quizzes / deadlines / other info / grading policy etc

(a student discussion forum will be encouraged for meaningful discussion and idea sharing)

Reference Material

- ▶ *Automation, production systems, and computer integrated manufacturing*
By Groover, Mikell P., Publisher : Prentice-Hall
- ▶ Any book on "Operations Research"
- ▶ *Concurrent engineering fundamentals: integrated product and process organisation* by Prasad, Biren
- ▶ *Computer simulation and modelling* by Neelamkavil, Francis

Introduction to syllabus

<http://www.youtube.com/watch?v=W-CINMO2JWo>

Evolution in manufacturing: staying ahead in a dynamic world)

Syllabus

Background

- Introduction to Manufacturing Enterprise
- Evolution
- Role of IT

Computers in Manufacturing

- Automation and its types with examples

Manufacturing Systems

- Introduction
- Examples of CIMs: CAD , CAM etc

Planning

- Enterprise Resource Planning (ERP)
- Supply Chains , e-business

Syllabus continued....

Advanced
concepts

- E-manufacturing
- Artificial Intelligence in Manufacturing
- Concurrent Engineering

Applications

- Simulation
- Modelling

Importance of the course!

<http://www.youtube.com/watch?v=R8K2ZIAjg8s>

(Reimagining Traditional Manufacturing)

Discuss!

By the end of this course....

- ▶ Role and importance of computers in ME
- ▶ Why and how computers are used in manufacturing
- ▶ Get introduced to different techniques and software used in CIM
- ▶ Get familiar with resource planning and steps till product delivery
- ▶ Use of modern concepts in manufacturing like AI, simulation and modelling

Open Questions ?

- ▶ Class timing and day
- ▶ Any other suggestions?

Next Class!

- ▶ Monday
- ▶ Topic 1:
 - Introduction to manufacturing enterprise

Thank you!