

## *ERP (21-550)*

*Advanced Manufacturing Laboratory  
Department of Industrial Engineering  
Sharif University of Technology*

*Session # 1*



## *Course Description*

### ▪ *Instructor*

- *Omid Fatahi Valilai, Ph.D. Industrial Engineering Department, Sharif University of Technology*
- *Email: [FValilai@sharif.edu](mailto:FValilai@sharif.edu), Tel: 6616-5706*
- *Website: [Sharif.edu/~fvalilai](http://Sharif.edu/~fvalilai)*

### ▪ *Class time*

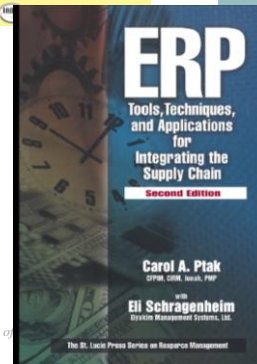
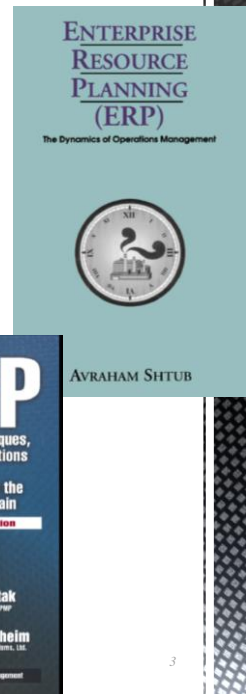
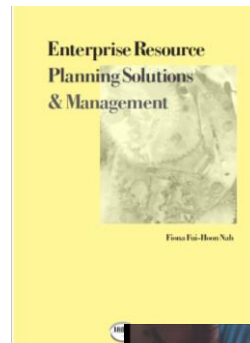
- *Sunday-Tuesday*                      *16:30-18:30*
- *Wednesday*                              *09:00-12:00*

### ▪ *Course evaluation*

- *Mid-term*                                      *(30%)*
- *Final exam*                                      *(40%)*
- *Quiz*    *(5%)*
- *Exercise*                                        *(10%)*
- *ERP Lab*                                        *(15%)*

## Course Description (Continued ...)

- **Mid-term session:**
  - Sunday : 8<sup>th</sup> Azar 1394, 16:30 ~ 18:00
- **Final Exam:**
  - Sunday: 27<sup>th</sup> Dey 1394, 09:00 ~ 10:30
- **Reference:**
  - Shtub, A., "Enterprise Resource Planning (ERP)- The dynamics of operations management", 2002, Kluwer Academic Publishers
  - Ptak, Carol A., "ERP Tools, Techniques, and Applications for Integrating the Supply Chain", 2004, The CRC Press
  - Fui, F., Nah, H., "Enterprise Resource Planning", 2002, IRM Press



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- **Final Exam:**
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- **Reference:**
  - Daniel E. O'leary, "Enterprise Resource Planning Systems Systems, Life Cycle, Electronic Commerce, and Risk", 2000, Cambridge University Press

### Enterprise Resource Planning Systems

Systems, Life Cycle, Electronic Commerce, and Risk



Daniel E. O'Leary

CAMBRIDGE [www.cambridge.org/978052179152](http://www.cambridge.org/978052179152)

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## *Course Description (Continued..)*

- *Contents:*
  - *Enterprise Management*
  - *Operations Management*
  - *The Evolution of ERP Systems: A Historical*
  - *Organizations and organizational structures*
  - *Scheduling*
  - *Purchasing and inventory management*
  - *Marketing considerations*
  - *ERP selection and implementation*

## *Course Description (Continued..)*

- *Contents:*
  - *Enterprise Management*
    - *History of Enterprise Resource Planning*
    - *The Theory of Constraints and ERP*
    - *Sales and Operations Planning*
    - *Buffer Resource Strategy*
    - *Enterprise Resource Management*
    - *Integrating the Supply Chain to Reap the Rewards*
    - *Strategic Sourcing and Procurement*

## *Course Description (Continued..)*

- *Contents:*
  - *Operations Management*
    - *Operations Planning (Material and Capacity Requirements Planning)*
  - *Product Life Cycle Management*
  - *Manufacturing Execution System*
  - *Distribution*

## *Course Description (Continued..)*

- *Contents:*
  - *Organizations and organizational structures*
    - *Functional and project organizations, typical goals and performance measures*
  - *The job shop, flow shop and group technology*
  - *Operations Management and its interface with other functional areas: restructuring the order fulfillment process*
  - *Functions and scenarios in the Operations Trainer Problems*

## Course Description (Continued..)

- *Contents:*
  - *Scheduling*
    - *The job shop, implementing priority rules*
    - *Scheduling the flow shop*
    - *The just in time approach (JIT)*
    - *The dynamic shop - expediting and changing priorities*
    - *The drum buffer rope approach (DBR)*
    - *Scheduling in the Operations Trainer*

## Course Description (Continued..)

- *Contents:*
  - *Purchasing and inventory management*
    - *The need for outsourcing*
    - *Outsourcing and make or buy decisions*
    - *Suppliers management*
    - *Inventory management - benefit and cost considerations*
    - *Inventory management - models and their assumptions*
    - *The dynamics of the order fulfillment process - early studies and the Operations Trainer*
    - *The purchasing function in the Operations Trainer*

## Course Description (Continued..)

- *Contents:*
  - *Marketing considerations*
    - *Make to stock, make to order, assemble to order policies*
    - *The Master Production Schedule*
    - *Lead time and time based competition*
    - *Quality and its management - quality based competition*
    - *Cost considerations and cost based competition*
    - *Dynamic aspects - marketing in the Operations Trainer*

## Course Description (Continued..)

- *Contents:*
  - *ERP selection and implementation*
    - *ERP System Requirements*
  - *Selecting the Right ERP System*
  - *Data Record Accuracy*
  - *Implementation—Generalized Industry Application*
  - *Repetitive Manufacturing Application*
  - *Process Industry Application*
  - *Remanufacturing*
  - *Project Manufacturing*
  - *Customer Relationship and Service*