

## *ERP (21-550)*

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

*Session #19*



### *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*
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#### ▪ *Class time*

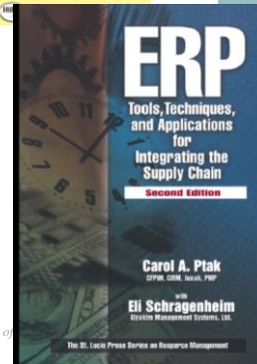
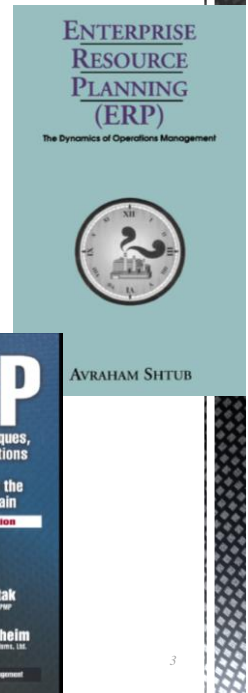
- *Sunday-Tuesday*                      *16:30-18:30*
- *Wednesday*                              *09:00-12:00*

#### ▪ *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



Advanced Manufacturing Laboratory, Department of Industrial Engineering, Sharif University of Technology  
ERP (21-550), Session #19

3

## Course Description (Continued ...)

- **Mid-term session:**
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- **Final Exam:**
  - Sunday: 27<sup>th</sup> Dey 1394, 09:00 ~ 10:30
- **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

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ERP (21-550), Session #19

4

## *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:*
  - *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*

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ERP (21-550), Session #1*

8

## *ERP selection and implementation*

- *ERP System Requirements*
  - *Most enterprises can expect to change their computer information system either to a new system or have a major upgrade at least every 3 to 5 years.*
  - *With rapidly developing technology and the advent of new features and functions, it is essential that the company makes the best choice possible in a new system.*
  - *This includes the hardware platform, database tool, and the overall philosophy of the Enterprise Resource Planning (ERP) system.*
  - *Some ERP systems are well designed for the entrepreneurial business with decentralized controls, while others offer an excellent fit for corporate standardized business processes.*

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ERP (21-550), Session #19*

9

## *ERP selection and implementation*

- *ERP System Requirements*
  - *Type of business*
  - *The first step of any successful system selection is to decide what kind of business you are and what kind of business you would like to be.*
    - *A make-to-order company producing high variety and low volume, selling production capability and competing in the market on lead-time response*
    - *Conversely, A make-to-stock company with all the difficulties of forecasting demand as internal production times exceed the time the customer is willing to wait for your product*
    - *A process industry producing a commodity product competing on price and needing to optimize capacity utilization*

## *ERP selection and implementation*

- *ERP System Requirements*
  - *What is the main power of the technology?*
  - *What limitation does it diminish?*
  - *What rules help us to accommodate the limitation?*
  - *What rules should we use now?*
  - *Do the new rules require any change in the way we use the technology?*
  - *How should we implement the change?*

## *ERP selection and implementation*

- *ERP System Requirements*
  - *Information Technology Infrastructure Selection Strategy*
    - *Control*
    - *Structure*
    - *Database*
    - *Customization*
    - *Best practice*

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ERP (21-550), Session #19

12

## *ERP selection and implementation*

- *ERP System Requirements*
  - *Feature/Function Selection Strategy*
    - *Forecasting*
    - *Master production scheduling*
    - *Planning*
    - *Inventory*
    - *BOMs*
    - *Routings*
    - *Material requirements planning*
    - *Purchasing and receiving*
    - *Capacity requirements planning*
    - *Shop floor control*
    - *Product costing*
    - *Order entry and sales management*

Advanced Manufacturing Laboratory, Department of Industrial Engineering, Sharif University of Technology  
ERP (21-550), Session #19

13

## *ERP selection and implementation*

- *ERP System Requirements*
  - *Feature/Function Selection Strategy*
    - *Distribution requirements planning*
    - *Accounts payable*
    - *Accounts receivable*
    - *Payroll*
    - *Personnel*
    - *Fixed assets*
    - *General ledger*
    - *Service dispatch*
    - *Computer integrated manufacturing/product life cycle management*
    - *Supplier and customer collaboration and self service*
    - *Telemarketing and catalog management*
    - *User interfaces*
    - *Information system strategy and general environmental questions.*