

## *ERP (21-550)*

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

*Session #10*



## *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*

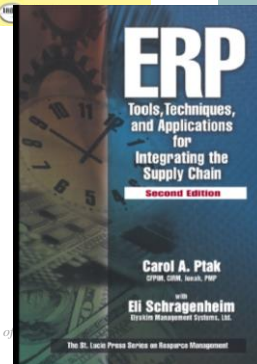
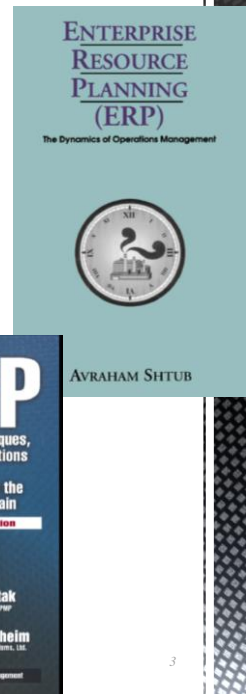
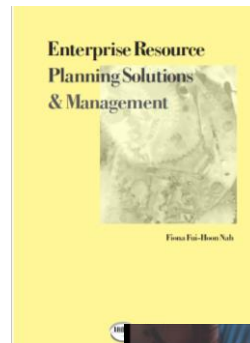
### ▪ *Course evaluation*

- *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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- **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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## *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*

## *Enterprise Management*

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Sales and Operations Planning is implemented in three phases:*
      - *Developing the foundation*
      - *Integrating and streamlining*
      - *Competitive advantage*
  - *These three phases normally can be expected to take 12 to 18 months to complete.*

## *Enterprise Management*

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Integrating and streamlining*
    - *Phase II of the Sales and Operations Plan is integrating and streamlining the process into the everyday management of the enterprise.*
    - *Management learns by doing and learns by using the Sales and Operations Planning process as an integral part of managing the business.*
    - *During Phase II the company learns that S&OP is a process that should be continuously improved.*
    - *This improvement includes restructuring the timing of the meeting and refining the meeting agenda.*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Integrating and streamlining*
    - *The important thing to remember during this phase of Sales and Operations Planning is that S&OP is a process that must have built-in continuous improvement.*
  - *During the initial critique of the process the following questions should be addressed:*
    - *Was everyone prepared?*
    - *Were the steps on the process appropriate?*
    - *Did we have the right level of detail?*
    - *Were needed decisions made?*
    - *Were we efficient with our time?*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Sales and Operations Planning is implemented in three phases:*
      - *Developing the foundation*
      - *Integrating and streamlining*
      - *Competitive advantage*
  - *These three phases normally can be expected to take 12 to 18 months to complete.*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Competitive advantage*
    - *Phase III is when the company internalizes the Sales and Operations Planning process and utilizes it for competitive advantage.*
  - *A company that has successfully implemented Sales and Operations Planning is customer driven.*
  - *This company drives the execution of the business plan by ensuring that plans are integrated and realistic rather than allowing chance to play a large role.*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *Competitive advantage*
    - *Phase III is when the company internalizes the Sales and Operations Planning process and utilizes it for competitive advantage.*
  - *A Sales and Operations Planning company embraces change as a competitive strategy and drives internal change through continuous improvement.*
  - *The underlying advantage is that strategies and tactics have been integrated into one plan that everyone drives toward.*

## Enterprise Management

- *Contents:*
  - *Sales and Operations Planning implementation*
    - *The most basic performance measure that is maximized during the S&OP process is profitability.*
    - *To optimize profitability, one must truly understand costs.*
    - *This is where the TOC approach again provides unique insights into real bottom line returns.*
    - *TOC operates from the goal that the enterprise desires to make more money now and into the future.*
      - *The performance of the weakest link (constraint) limits the degree to which the organization can accomplish its purpose (goal).*

## Enterprise Management

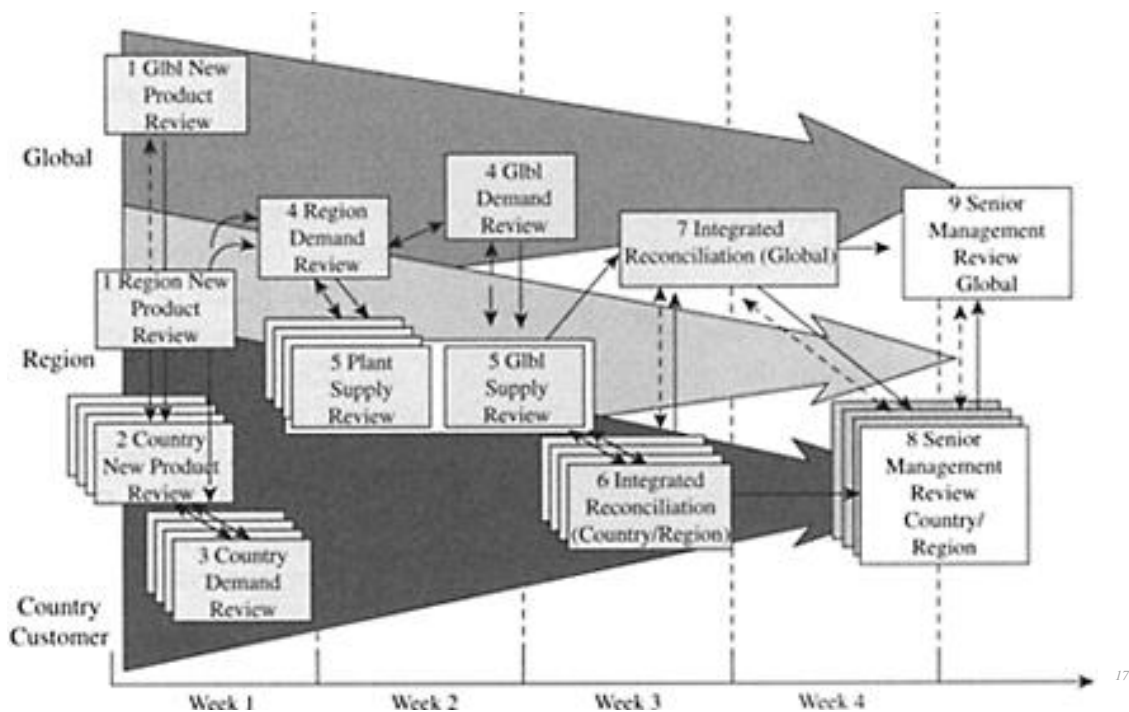
- *Contents:*
  - *Sales and Operations Planning implementation*
    - *The classic theory of constraints problem is referred to as the P/Q problem.*
    - *The assumption of this problem is that the company has limited capacity and that there is no other impact on sales if customers do not receive the entire product they ordered. The other assumptions are:*
      - *There are only two products: P and Q*
      - *There is a well trained and productive workforce.*
      - *The quality defect rate is zero.*
      - *Selling prices are fixed.*
      - *The weekly market demand is fixed.*
      - *Labor content is known.*
      - *The raw material cost is fixed.*

## Enterprise Management

- **Contents:**
  - *Global Sales and Operations Planning*
    - *As more companies are competing on a global basis, the Sales and Operations Planning process must also span the globe.*
  - *The information from each country or region flows to a final review on an enterprise level by senior management.*
  - *Having integrated information systems becomes even more important to the effective management of the company as the operating scope of the company gets broader.*

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