

CH2404 Process Economics

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# Introduction to the Course

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# Questionnaire

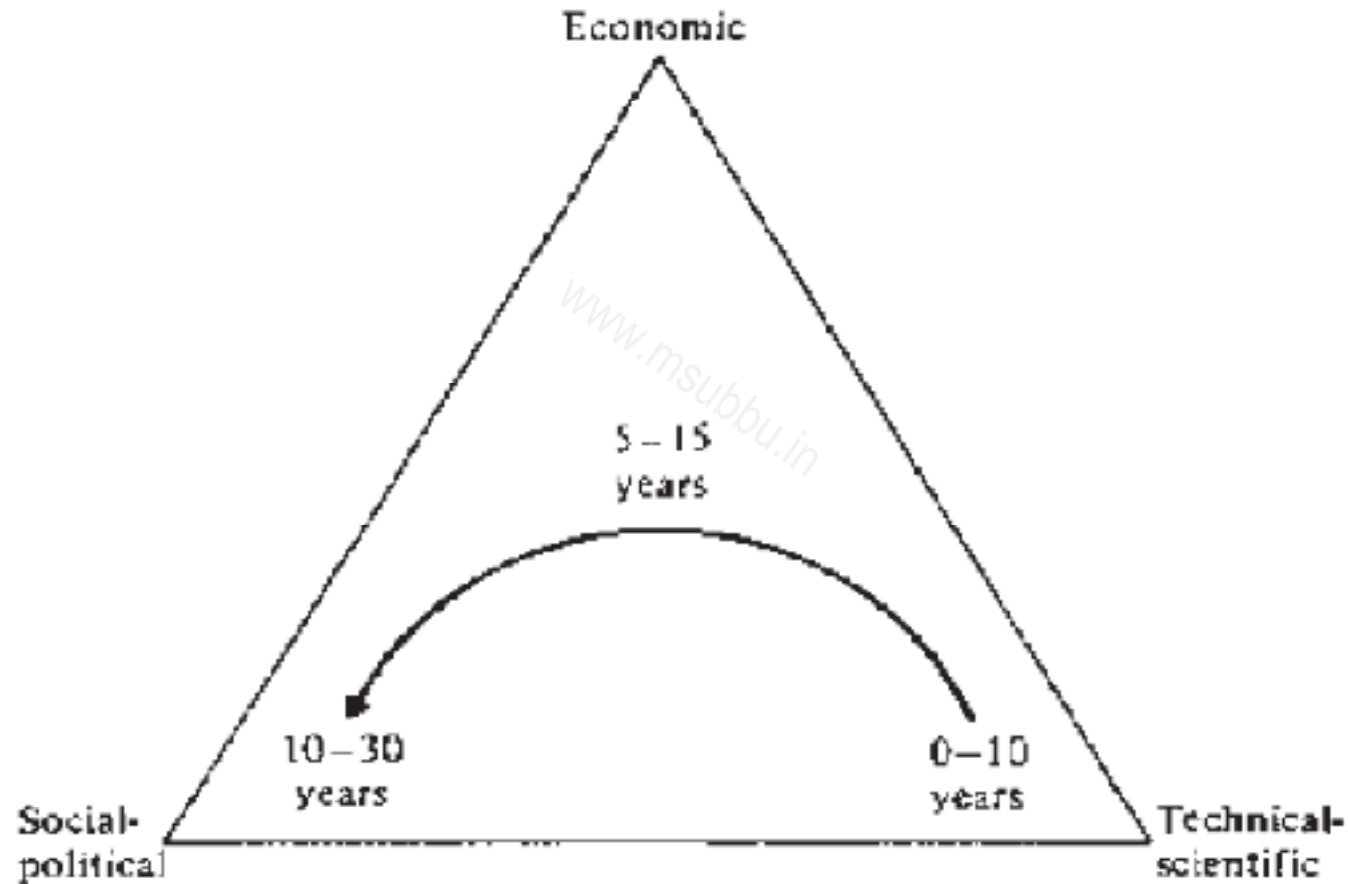
1. What do you mean by '*interest*' in the context of economics?
2. What do mean by (i) simple interest, (ii) compound interest ?
3. What is meant by EMI ?
4. What is the present interest rates (of nationalized banks) on (i) deposits (ii) loans ?
5. With increase in diameter of pipe, pressure drop for a given flow rate \_\_\_\_\_ (decreases / increases).
6. With multiple effects evaporation, total steam requirement \_\_\_\_\_ (decreases / increases), in comparison to single effect evaporation.

# Need for this Course

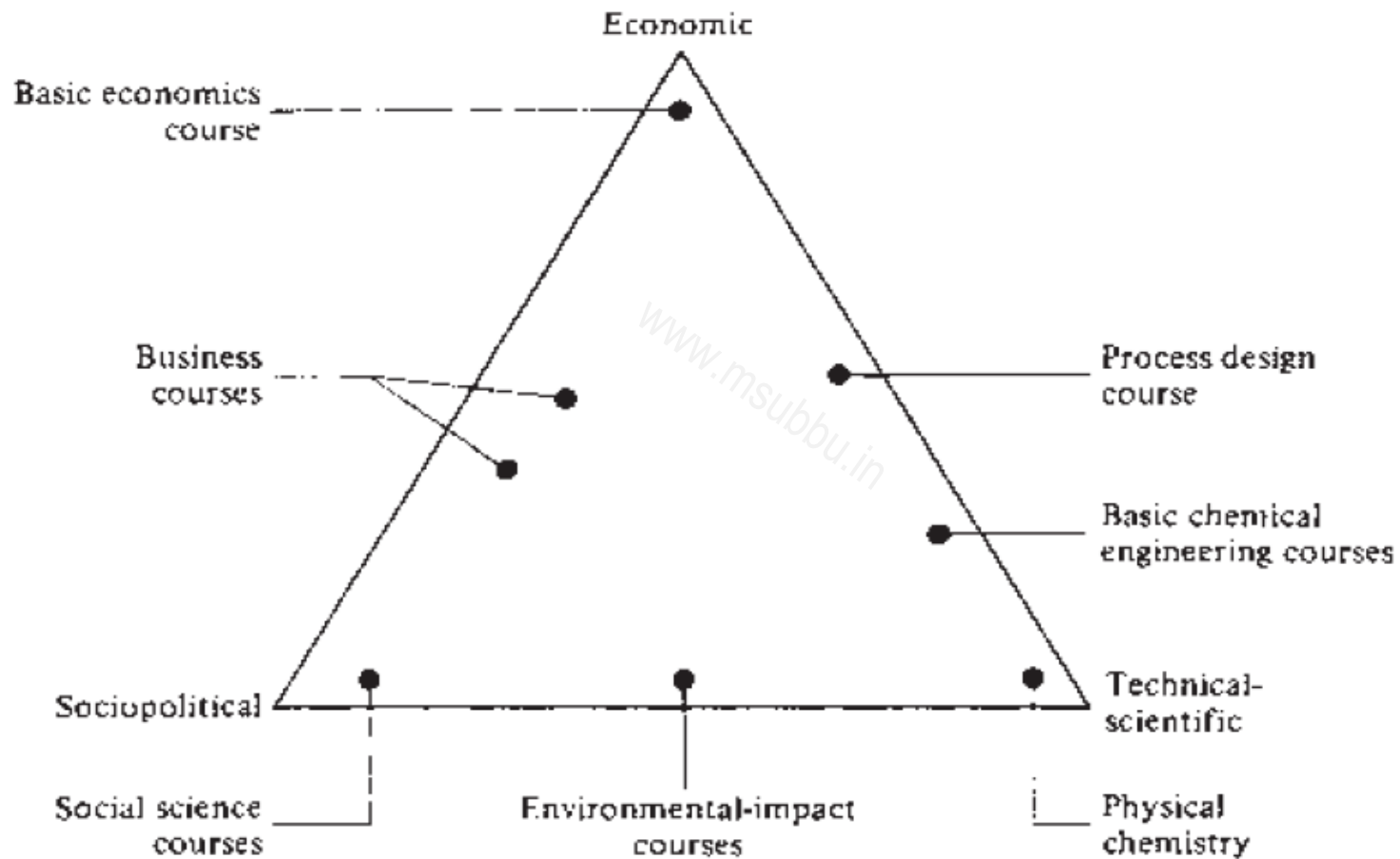
- For the successful design and operation of any industry, economics plays a key role.
- Every person entering a industry acquires managerial position, sooner. The manager has to evaluate design changes, procurement alternatives, based on economic principles.

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# Typical Career Path of an Engineering Professional



# Chemical Engineering Courses



# Syllabus Topics

- 1. Principles of Management and Organisation:** Planning, organization, staffing, coordination, directing, controlling, communicating, organization as a process and a structure; types of organizations. Method study; work measurement techniques; basic procedure; motion study; motion economy; principles of time study; elements of production control; forecasting; planning; routing; scheduling; dispatching; costs and costs control, inventory and inventory control.
- 2. Investment Costs and Cost Estimation:** Time value of money, Capital costs, Depreciation, Estimation of capital cost, manufacturing costs, and working capital, invested capital and profitability
- 3. Profitability, Investment alternative and Replacement:** Estimation of project profitability, sensitivity analysis, investment alternatives, Investment alternatives, Replacement policies, Forecasting sales, Inflation and its impact
- 4. Annual Reports and Analysis of Performance:** Principles of accounting, balance sheet, income statement, financial ratios, analysis of performance and growth
- 5. Economic Balance:** Essentials of economic balance – Economic balance approach, economic balance for insulation, evaporation, heat transfer.

# Text Books

## Economics:

- Peters, M. S. and Timmerhaus, C. D. RE West , "Plant Design and Economics for Chemical Engineers", 3<sup>rd</sup> Edn, McGraw-Hill, 2003.
- Couper, J.R., Process Engineering Economics, Marcel Dekker, Inc., New York, 2003.
- Holand, F.A., Watson, F.A. and Wilkinson, J.K., "Introduction to process Economics", 2<sup>nd</sup> Edn, John Wiley, 1983.

## Management:

Anil Kumar, S., Suresh, N., Production and Operations Management, 2<sup>nd</sup> Edition, 2008, New Age International Publishers, India



# Instructor's Expertise

- Teaching this subject for the fourth time:
  - Handled three times here at SSN: 2010-11, 2011-12, 2012-13

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# Learning Process

- Class Time Table:  
Mon: 5; Tue: 1, Wed: 4; Fri: 6

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