

## **AMCT-19 PROCESS ECONOMICS AND INDUSTRIAL MANAGEMENT L T P C 3 0 0 3**

### **OBJECTIVE**

To introduce process economics and industrial management principles to chemical engineers.

### **OUTCOME**

- The objective of this course is to teach principles of cost estimation, feasibility analysis, management, organization and quality control that will enable the students to perform as efficient managers.

### **UNIT I PRINCIPLES OF PRODUCTION MANAGEMENT AND ORGANISATION 15**

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.

### **UNIT II ENGINEERING ECONOMICS FOR PROCESS ENGINEERS - INTEREST, INVESTMENT COSTS AND COST ESTIMATION 10**

Time Value of money; capital costs and depreciation, estimation of capital cost, manufacturing costs and working capital, invested capital and profitability.

### **UNIT III PROFITABILITY, INVESTMENT ALTERNATIVE AND REPLACEMENT 8**

Estimation of project profitability, sensitivity analysis; investment alternatives; replacement policy; forecasting sales; inflation and its impact.

### **UNIT IV ANNUAL REPORTS AND ANALYSIS OF PERFORMANCE 4**

Principles of accounting; balance sheet; income statement; financial ratios; analysis of performance and growth.

### **UNIT V ECONOMIC BALANCE AND QUALITY AND QUALITY CONTROL 8**

Essentials of economic balance – Economic balance approach, economic balance for insulation, evaporation, heat transfer.

Elements of quality control, role of control charts in production and quality control.

**TOTAL : 45 PERIODS**

### **TEXT BOOKS**

1. Peters, M. S. and Timmerhaus, C. D., “ Plant Design and Economics for Chemical Engineers ”, 5<sup>th</sup> Edn., McGraw Hill, 2002.
2. Holand, F.A., Watson, F.A. and Wilkinson, J.K., “ Introduction to process Economics “, 2<sup>nd</sup> Edn., John Wiley, 1983.
3. Narang, G.B.S. and Kumar, V., “ Production and Costing ”, Khanna Publishers, New Delhi, 1988.

## REFERENCES

1. Allen, L.A., "Management and Organization", McGraw Hill. Perry, R. H. and Green, D., "Chemical Engineer's Handbook", 7<sup>th</sup> Edn., McGraw