

AMCT-19 PROCESS ECONOMICS AND INDUSTRIAL MANAGEMENT

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

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

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

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

UNIT IV ANNUAL REPORTS AND ANALYSIS OF PERFORMANCE

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

UNIT V ECONOMIC BALANCE AND QUALITY AND QUALITY CONTROL

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.

TEXT BOOKS

1. Peters, M. S. and Timmerhaus, C. D., “ Plant Design and Economics for Chemical Engineers ”, 5th Edn., McGraw Hill, 2002.
2. Holand, F.A., Watson, F.A. and Wilkinson, J.K., “ Introduction to process Economics “, 2nd 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 ", 7th Edn., McGraw