

AMEV-23 CLEANER PRODUCTION

OBJECTIVES:

To introduce the importance, and different approaches of cleaner production in industries and to impart knowledge on environmental management tools applying cleaner production principle.

UNIT I INTRODUCTION

Sustainable development - Sustainability Sustainability Strategies -
Indicators of - Barriers
to Sustainability - Industrial and - Industrialization and
activities Environment sustainable
development - Industrial Ecology - Cleaner Production (CP) in Achieving Sustainability
- Prevention versus Control of Industrial Pollution - Environmental Policies and
Legislations -
Regulation to Encourage Pollution and Cleaner Production - Regulatory
Prevention versus
Market Based Approaches.

UNIT II CLEANER PRODUCTION

Definition - methodology - Historical evolution - Benefits - Promotion - Barriers - Role
of Industry, Government and Institutions - Environmental Management Hierarchy -
Relation of CP and EMS - Integrated prevention and pollution limitation - Best
Available Technology concept (BAT) - Internet information & Other CP Resources.

UNIT III CLEANER PRODUCTION PROJECT DEVELOPMENT & IMPLEMENTATION -

Overview of CP - Assessment Steps and Skills - Preparing for the Site,
Visit, Information
gathering, and Process Flow Diagram - Material Balance - CP Option Generation
Technical Environmental Feasibility analysis - Economic valuation of alternatives -
and Total
Cost Analysis - CP Financing - Program - Organizing a
Establishing a Program Preparing
Plan - Pollution Prevention and
A Program Measuring Progress Cleaner Production
Awareness
Plan.

UNIT IV SUPPORT INSTRUMENTS OF PREVENTION METHODS

Life cycle analysis - of LCA - Life Cycle Costing Labelling
The Environment - International Eco - Design for
Environmental Standards - ISO 14001 - Environmental
statement audit
Environmental .

UNIT V CASE STUDIES

Industrial Applications of CP, LCA, EMS Environmental
and Audits.

OUTCOMES:

The students completing the course will have

- ability to describe and comment the evolution of corporate environmental management strategies and its relation to the concept of sustainable development
- ability to describe Cleaner Production measures applicable to different industries
- ability to conduct energy and material balances for processes as part of a Cleaner Production assessment

TEXT BOOKS:

- Paul L. Bishop, „Pollution Prevention: Fundamentals and Practice“, McGraw Hill International, 2000.
- Prasad modak C. Visvanathan and Mandar parasnis , „Cleaner Production Audit“, Environmental System Reviews, No.38, Asian Institute of Technology, Bangkok, 1--5.

REFERENCES:

- World Bank Group „Pollution Prevention and Abatement Handbook - Towards Cleaner Production“, World Bank and UNEP, Washington D. C., 1--8.

Web Sources

- www.environmentalexpert.com.
- www.Cleaner production.com.