

Course Code : ME 724

Course Title : Energy and Environmental Management

Credit Hours : 3

Course Description

Introduction: Industrial impact on environment and the concept of efficiency, Energy and Environmental Management Systems, Relationship between Energy Utilization and Production Volume, Evaluation of performance of energy and environmental management practice, Implementation of Energy and Environmental Management Systems, Industrial Steam Systems, Compressed Air Systems, Refrigeration Systems, Combined Heat and Power.

Course Objectives

The aim of this course is to introduce awareness of energy impact on environment, designing environmental management plans and its implementation. Optimization of various components of energy systems (steam generators, compressed air storage equipment, refrigeration systems and combined heat and power) for more efficient utilization of energy resources.

Course Topics

- Week no. 1: Introduction: Industrial impact on environment and the concept of efficiency
- Week no. 2: Energy and Environmental Management Systems
- Week no. 3: Relationship between Energy Utilization and Production Volume.
- Week no. 4: Evaluation of performance of energy and environmental management practice.
- Week no. 5: Implementation of Energy and Environmental Management Systems
- Week no. 6: Industrial Steam Systems.
- Week no. 7: Industrial Steam Systems. / 7th week evaluation.
- Week no. 8: Compressed Air Systems.
- Week no. 9: Compressed Air Systems.
- Week no. 10: Refrigeration Systems.
- Week no. 11: Refrigeration Systems.
- Week no. 12: Combined Heat and Power / 12th week evaluation
- Week no. 13: Combined Heat and Power
- Week no. 14: Presentation on Selected Topics

Week no. 15: Presentation on Selected Topics

Week no. 16: Final Examination

References

- Z. Morvay and D. Gvozdnac: "Energy and Environmental Management", Johan Wiley and Sons, 2008.