

PD673 Design and Selection of Heat Exchangers

Days 1 & 2

- Conduction of heat through a plane wall
- Conduction of heat through a cylindrical wall
- Convection heat transfer-general problem
- Convection heat transfer-problem: formulation and solution
- Optimum thickness of pipe insulation
- Double pipe heat exchangers
 - Analysis of double pipe heat exchangers
 - Temperature profiles
 - Effectiveness-NTU analysis
 - Design Considerations
- Shell and tube heat exchangers
 - Analysis of shell and tube heat exchangers
 - Effectiveness-NTU analysis
 - Increased Heat recovery in shell and tube heat exchangers
 - Design considerations
 - Optimum outlet water temperature analysis
- Plate and frame heat exchangers
 - Analysis of plate and frame heat exchangers
 - Effectiveness-NTU method
- Cross flow heat exchangers
 - Analysis of cross flow heat exchangers
- Exercises involving the use of provided spreadsheets