****sommaire pertinent**** du livre ***Engineering Heat Transfer*** de **Mahesh M. Rathore** :

1. **Introduction to Heat Transfer**

* Basic concepts and definitions

* Modes of heat transfer

* Thermal properties of materials

* Heat transfer applications in engineering

2. **Heat Conduction**

* Fourier’s law of heat conduction

* One-dimensional steady-state conduction

* Multidimensional conduction

* Transient heat conduction

* Thermal resistance networks

* Numerical methods in conduction

3. **Heat Convection**

* Fundamentals of convection

* Forced convection

* Natural convection

* Boundary layer theory

* Dimensionless numbers: Reynolds, Prandtl, Nusselt

* Convective heat transfer correlations

4. **Boiling and Condensation**

* Pool boiling

* Flow boiling

* Film and dropwise condensation

* Heat transfer coefficients

* Industrial applications

5. **Thermal Radiation**

* Radiation fundamentals

* Blackbody radiation

* Radiation laws: Planck, Wien, Stefan-Boltzmann

* Radiation exchange between surfaces

* Radiation shields and enclosures

6. **Heat Exchangers**

* Types of heat exchangers

* LMTD method

* Effectiveness–NTU method

* Design and performance analysis

* Fouling factors

7. **Mass Transfer and Heat Transfer Analogy**

* Diffusion mechanisms

* Convective mass transfer

* Heat and mass transfer analogy

* Simultaneous heat and mass transfer

8. **Numerical and Experimental Methods**

* Finite difference methods

* Finite element methods

* Experimental techniques in heat transfer

* Error analysis

9. **Industrial Applications**

* Power plants

* Refrigeration and air conditioning

* Chemical process industries

* Thermal systems design

10. **Solved Problems and Case Studies**

* Step-by-step solved examples

* Engineering applications

* Practice exercises with solutions