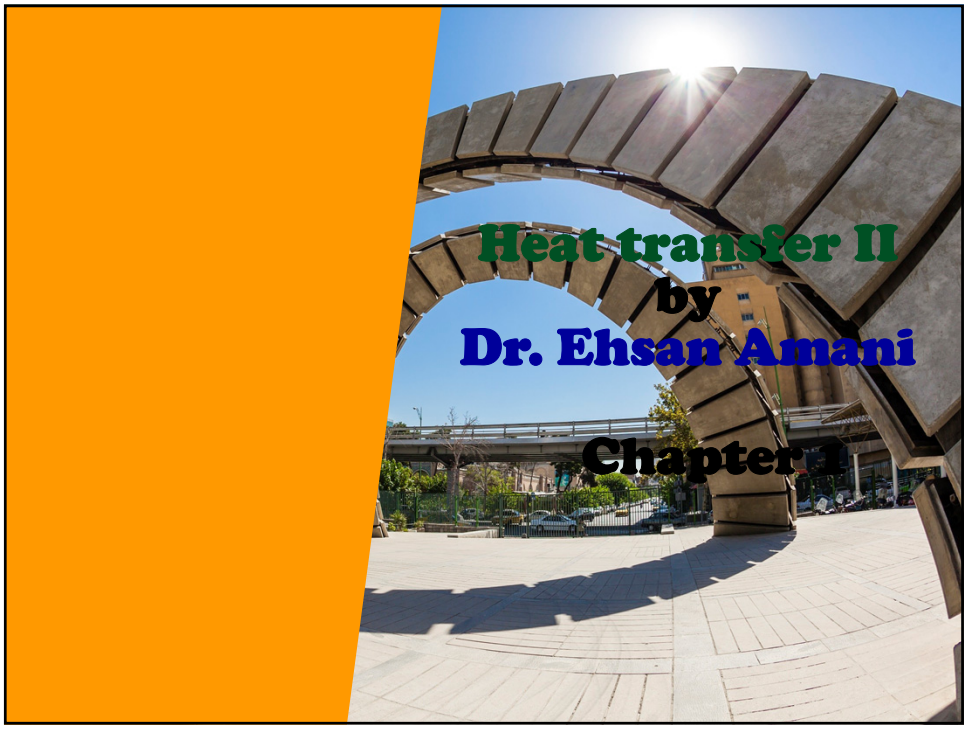


Course Overview

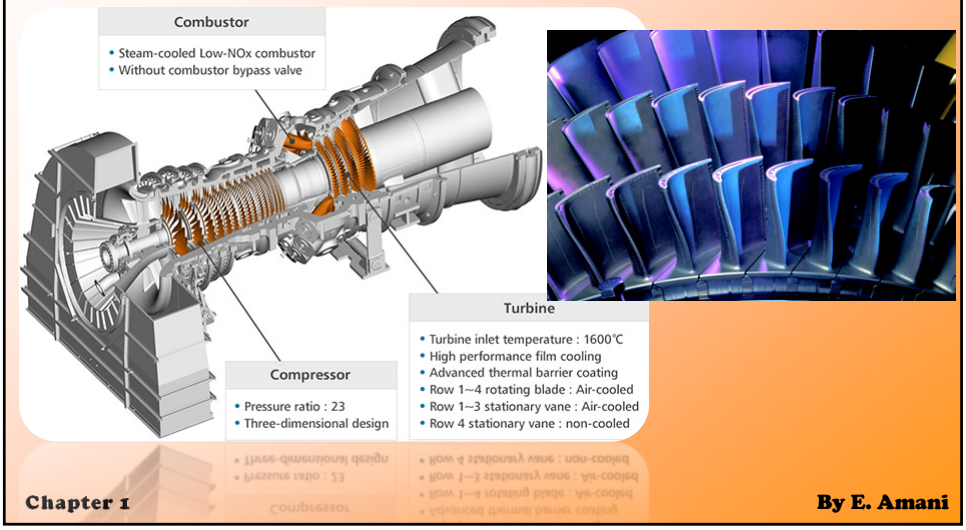
I. **Introduction**

II. **Two-dimensional steady conduction**

- Analytical solution: The separation of variables method
- Numerical solution: Finite Difference (FD) and Finite Volume (FV)

Multi-dimensional conduction: Applications

Temperature distribution for thermal stress analysis



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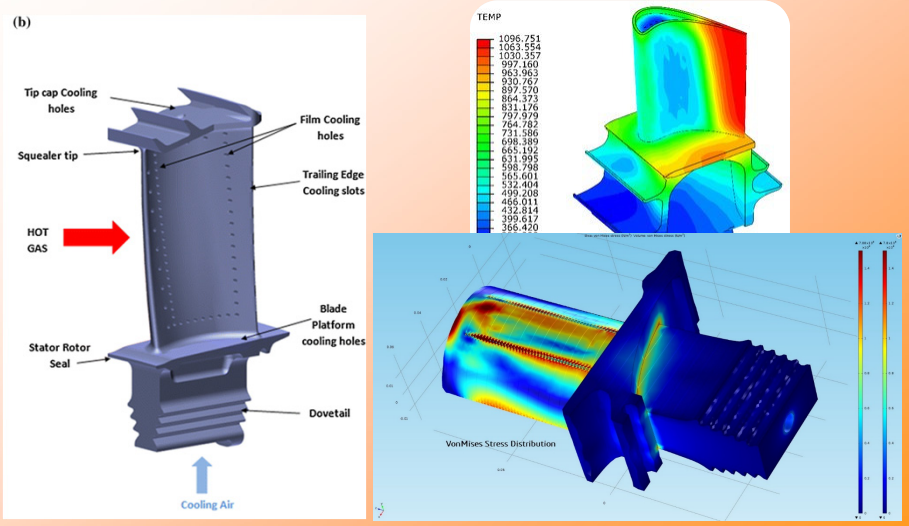
Multi-dimensional conduction: Applications

Temperature distribution for thermal stress analysis



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Course Overview

I. Introduction

II. Two-dimensional steady conduction

III. **Transient conduction**

- Lumped method
- Spatial effects

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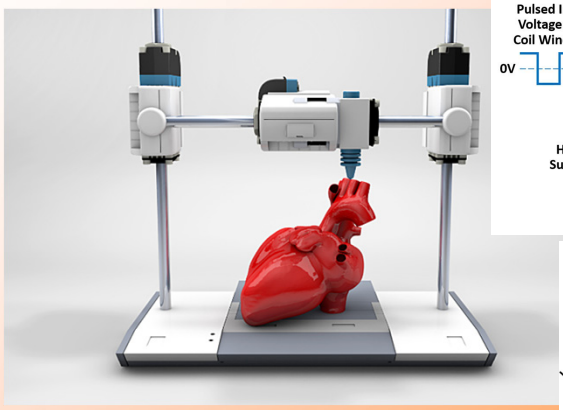
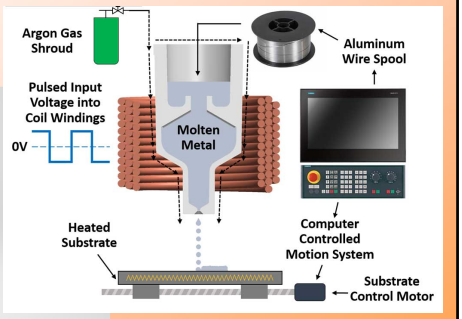
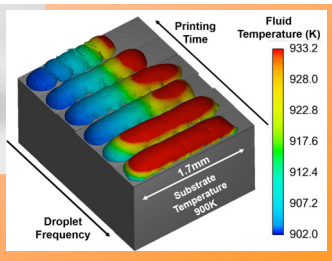
Transient conduction: Applications

3D Printing







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Course Overview

I. Introduction
II. Two-dimensional steady conduction
III. Transient conduction
IV. **Natural convection**

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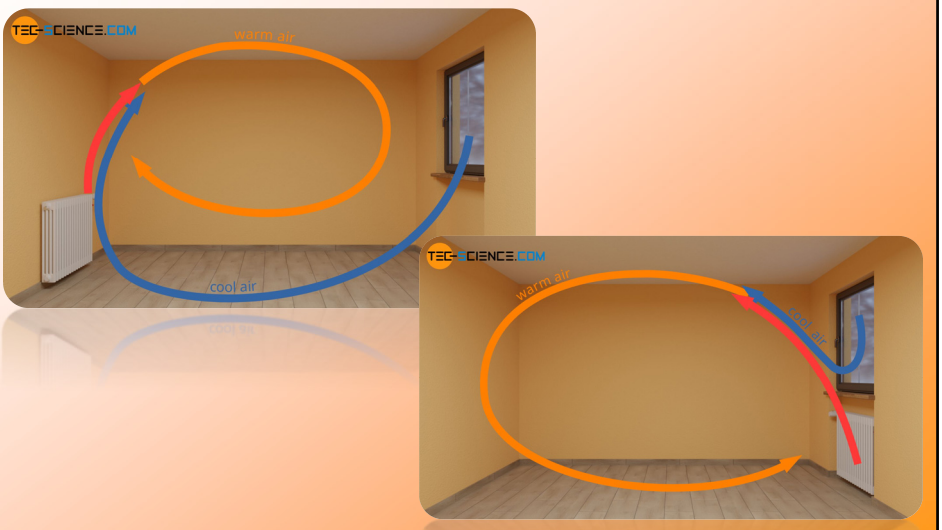
Natural convection: Applications

Air conditioning



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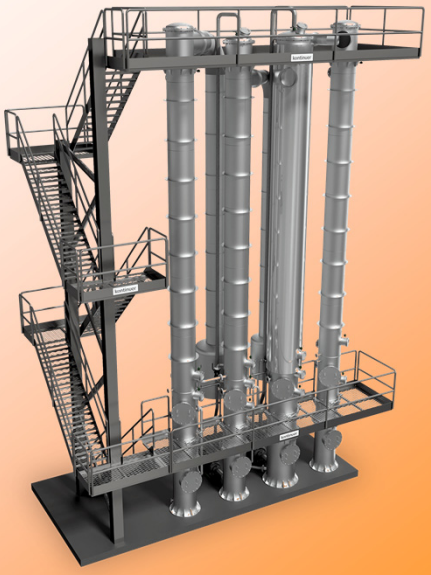
Course Overview

I. Introduction
II. Two-dimensional steady conduction
III. Transient conduction
IV. Natural convection
V. **Boiling and condensation**

Boiling and condensation: Applications

Evaporators



Boiling and condensation: Applications

Condensers

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Course Overview

I. Introduction
II. Two-dimensional steady conduction
III. Transient conduction
IV. Natural convection
V. Boiling and condensation
VI. **Volumetric radiation**

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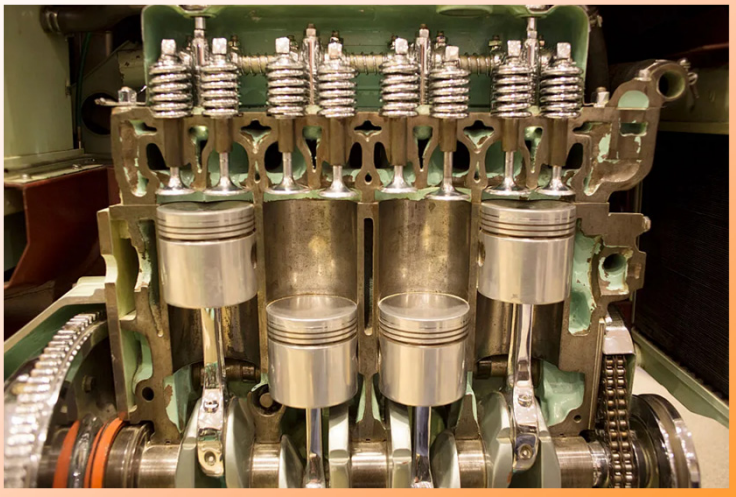
Volumetric radiation: Applications

Internal combustion engines



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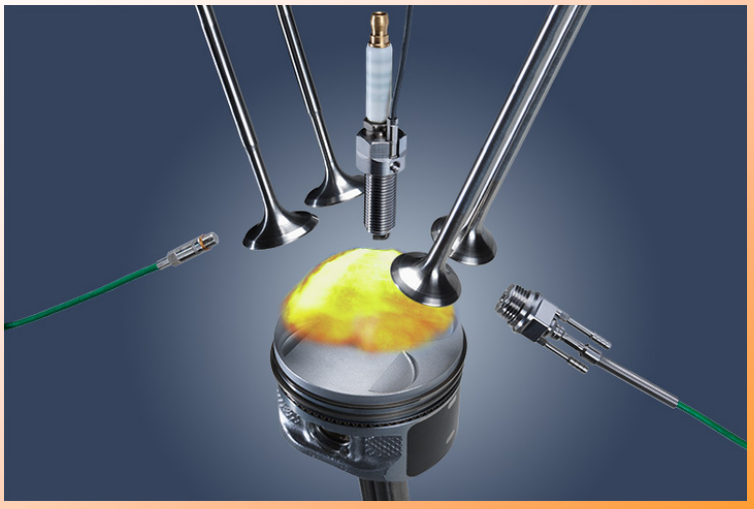
Volumetric radiation: Applications

Internal combustion engines



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Volumetric radiation: Applications

Internal combustion engines

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The end of chapter 1

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