

Thermal Physics (BMEGEENMWTP)

List of topics

Week	<i>Class 1</i>	<i>Class 2</i>	<i>Class 3</i>
1	Introduction, heat conduction review	Differential equation of heat conduction, boundary conditions	Basic Matlab Introduction
2	What are thermophysical properties?	Various heat conduction models	Basic Matlab Introduction
3	Finite difference method	Control volume method	Basic Matlab Introduction
4	Measurement of thermophysical properties of solids (steady-state)	Measurement of thermophysical properties of solids (transient)	Basic Matlab Introduction
5	Inverse heat conduction, sensitivity analysis	Brief overview of the solution methods	Basic Matlab Introduction
6	Midterm test 1	2D steady-state heat conduction	Calculations in Matlab
7	1D transient heat conduction	Calculations in Matlab	Calculations in Matlab
8	1D axisymmetric transient heat conduction with temp. dependent properties	Calculations in Matlab	Calculations in Matlab
9	1D transient heat conduction with 2 layers and contact resistance	Calculations in Matlab	Calculations in Matlab
10	One of the layers is treated having lumped capacitance	Calculations in Matlab	Calculations in Matlab
11	Calculation of the sensitivity coefficients for the 2-layer laser flash method	Calculations in Matlab	Calculations in Matlab
12	Midterm test 2	Midterm test 2	Homework assignment
13	Guided homework preparation	Guided homework preparation	Guided homework preparation
14	Guided homework preparation	Guided homework preparation	Homework presentation and grading

Lecture
Lab
Test
Homework