

A sample program of study is laid out below for a one-semester graduate course (consisting of 45 class sessions).

Graduate heat transfer class

<i>Day</i>	<i>Sections in Book</i>	<i>Topic</i>
1	1.1	Conduction heat transfer
2	1.2	1-D steady conduction, resistance concepts and circuits
3	2.8	Resistance approximations
4	1.3	1-D steady conduction with generation
5	1.4, 1.5	Numerical solutions with EES and MATLAB
6	1.6	Fin solution, fin efficiency and finned surfaces
7	1.7	Other constant cross-section extended surface problems
8	1.8	Bessel function solutions
9	2.2	2-D conduction, separation of variables
10	2.2	2-D conduction, separation of variables
11	2.4	Superposition
12	3.1	Transient, lumped capacitance problems - analytical solutions
13	3.2	Transient, lumped capacitance problems - numerical solutions
14	3.3	Semi-infinite bodies, diffusive time constant
15	3.3	Semi-infinite bodies, self-similar solutions
16	3.4	Laplace transform solutions to lumped capacitance problems
17	3.4	Laplace transform solutions to 1-D transient problems
18	3.5	Separation of variables for 1-D transient problems
19	3.8	Numerical solutions to 1-D transient problems
20	4.1	Laminar boundary layer concepts
21	4.2, 4.3	The boundary layer equations & dimensionless parameters
22	4.4	Blasius solution for flow over a flat plate
23	4.5, 4.6	Turbulent boundary layer concepts, Reynolds averaged equations
24	4.7	Mixing length models and the laws of the wall
25	4.8	Integral solutions
26	4.8, 4.9	Integral solutions, external flow correlations
27	5.1, 5.2	Internal flow concepts and correlations
28	5.3	The energy balance
29	5.4	Analytical solutions to internal flow problems
30	5.5	Numerical solutions to internal flow problems
31	6.1, 6.2	Natural convection concepts and correlations
32	8.1	Introduction to heat exchangers
33	8.2, 8.3	The LMTD and ϵ -NTU forms of the solutions
34	8.5	Heat exchangers with phase change
35	8.7	Axial conduction in heat exchangers
36	8.8, 8.10	Perforated plate heat exchangers and regenerators
37	10.1, 10.2	Introduction to radiation, Blackbody emissive power
38	10.3	View factors and the space resistance
39	10.3	Blackbody radiation exchange
40	10.4	Real surfaces, Kirchoff's law
41	10.5	Gray surface radiation exchange
42	10.5	Gray surface radiation exchange
43	10.5	Semi-gray surface radiation exchange
44	10.7	Introduction to Monte Carlo techniques
45	10.7	Introduction to Monte Carlo techniques