ME 303 M.M. Yovanovich

Week 8

Lecture 1

• Section 1.2: 1D Diffusion equation (Heat equation) with homogeneous Neumann BCs.
• Section 1.3: 2D Laplace equation (conduction problem) in a semi-infinite plate with homogeneous Dirichlet BCs.
• Demonstration of the use of Maple.
• Demonstration of the use of Mathcad. Colin Campbell

Lecture 2

• Section 1.3: 2D Laplace equation (conduction problem) in a semi-infinite plate with homogeneous Dirichlet BCs.
• Section 1.4: 1D Mass diffusion in a rod with homogeneous Neumann BCs.

Lecture 3

Makeup Lecture 3

• Section 1.4: 1D Mass diffusion in a rod with homogeneous Neumann BCs. Characteristic equation. Its roots. Orthogonality of sines. See Maple worksheets.
• Section 1.3: 2D Laplace in a semi-infinite strip rotated through 90 degrees. Re-examination of the possible solutions. Selection of appropriate solution by means of the homogeneous BCs along $y = 0$ and $y = L$.

Lecture 4

• Section 2.1: Vibrating String with fixed ends and initial velocity.
• See illustrative example on page 589. Initial displacement is a plucked string.
• Section 2.2: Vibrating String with damping and initial velocity.
