Lab4 - Modeling Optical Waveguides

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Figures follow on the next pages. Extra credit files are attached in the assignment submission and will also output from running the accompanying Matlab code.
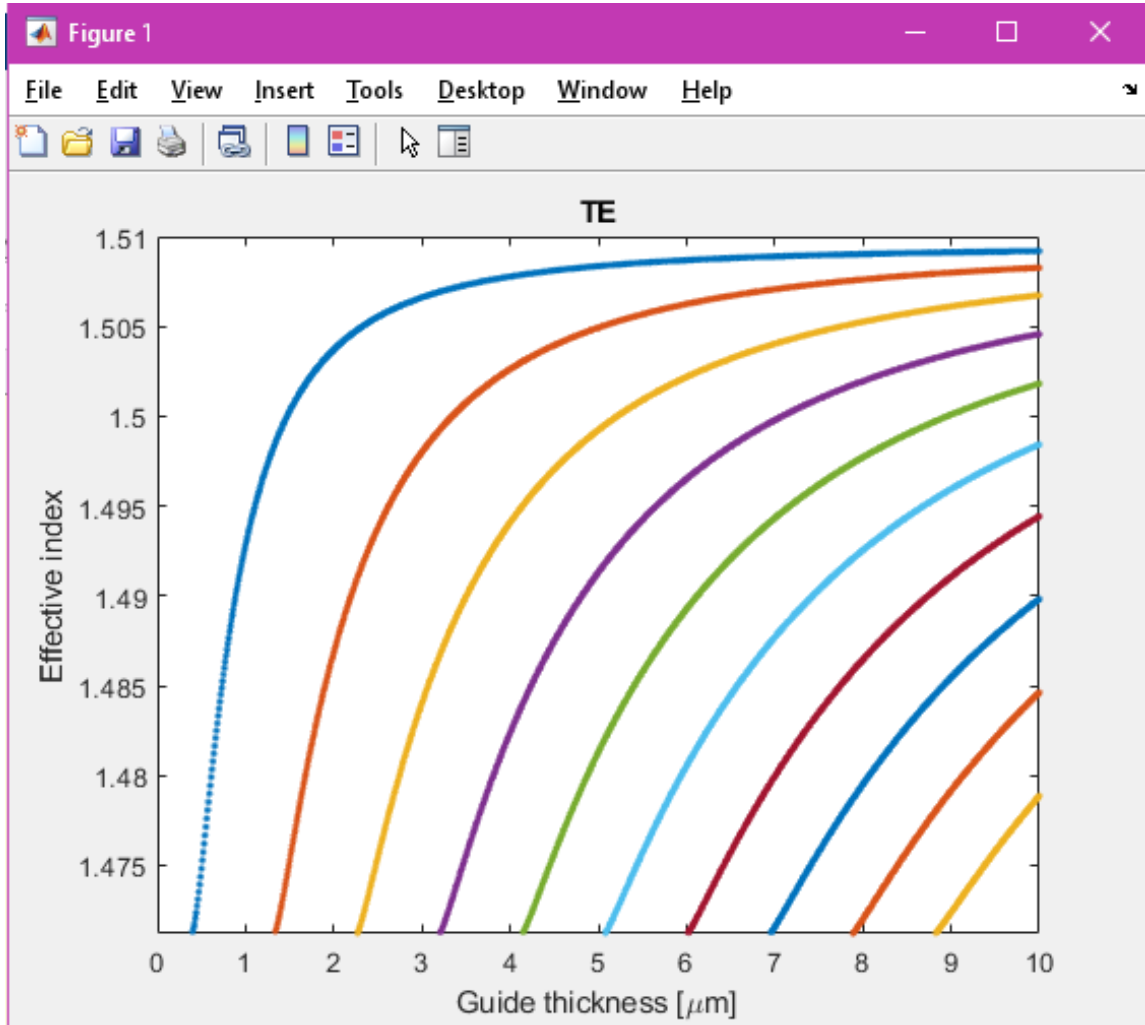
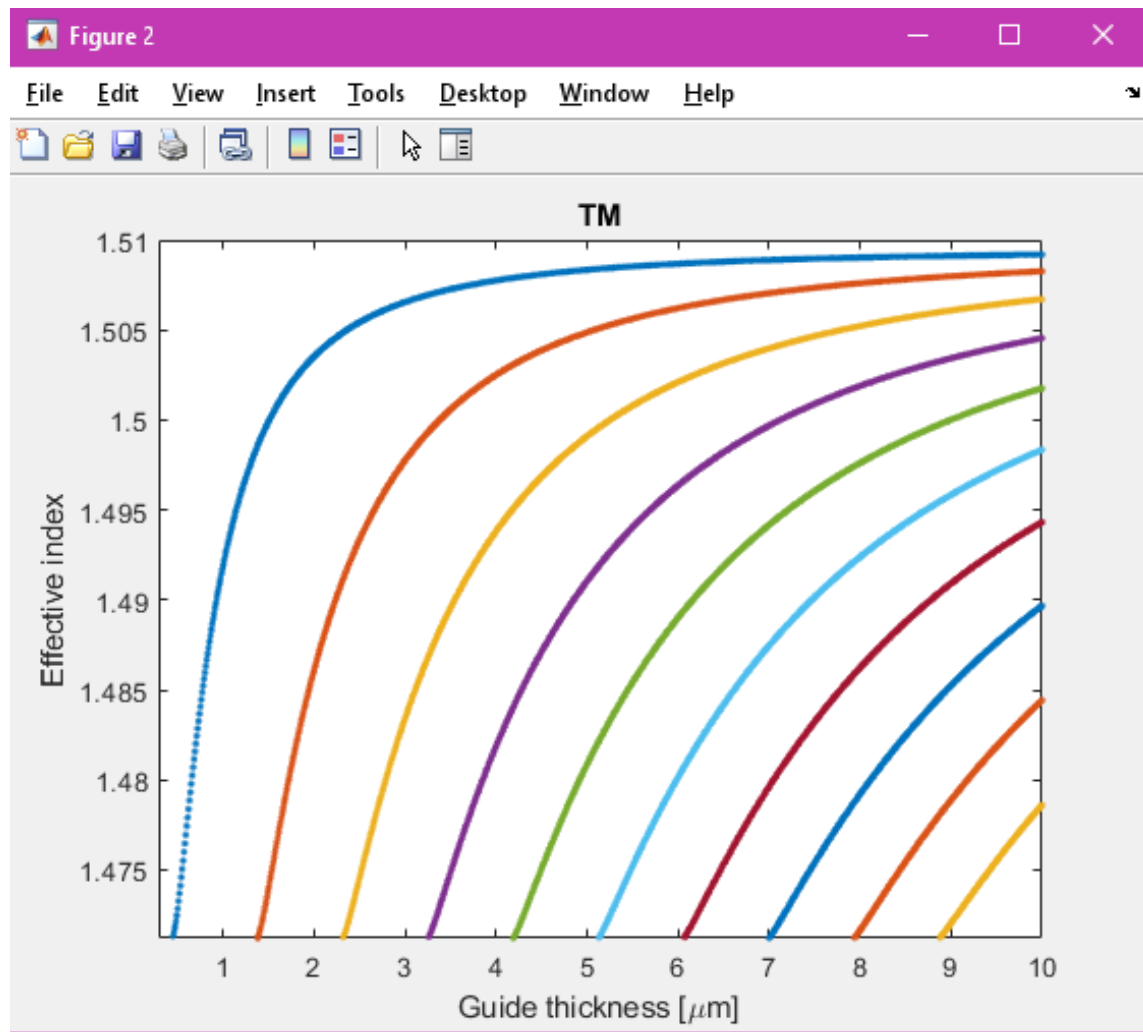Figure 1: Graph of effective index as a function of waveguide thickness from 0 to 10 microns for TE modes

Figure 2: Graph of effective index as a function of waveguide thickness from 0 to 10 microns for TM modes
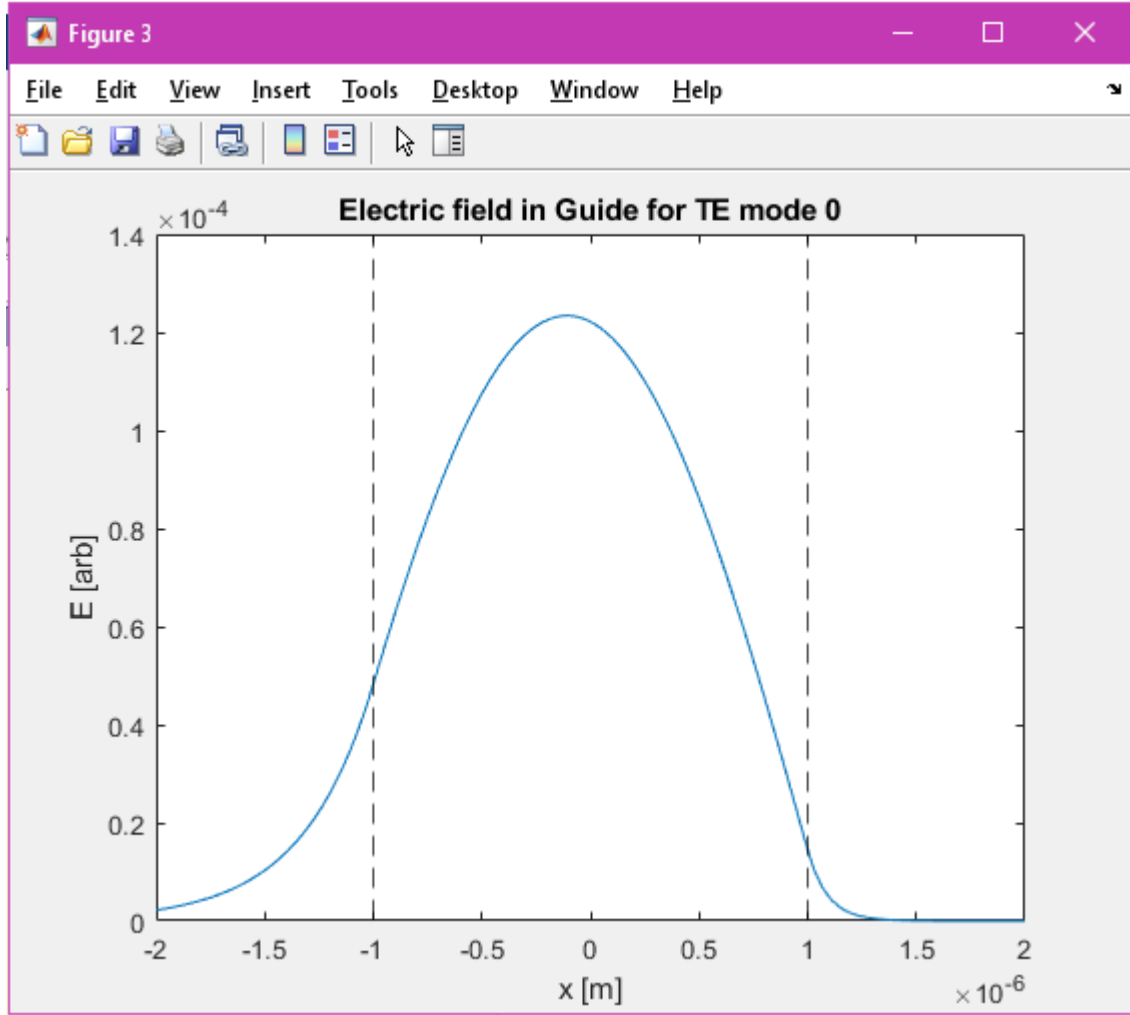
Figure 3: Plot of electric field of m = 0 mode for a 2 micron wide guide for 633 nm wavelength, cover index n1 = 1.0, guide index n2 = 1.5095, and substrate index n3 = 1.4711. The left region is n3, the middle n2, and the right region is n1
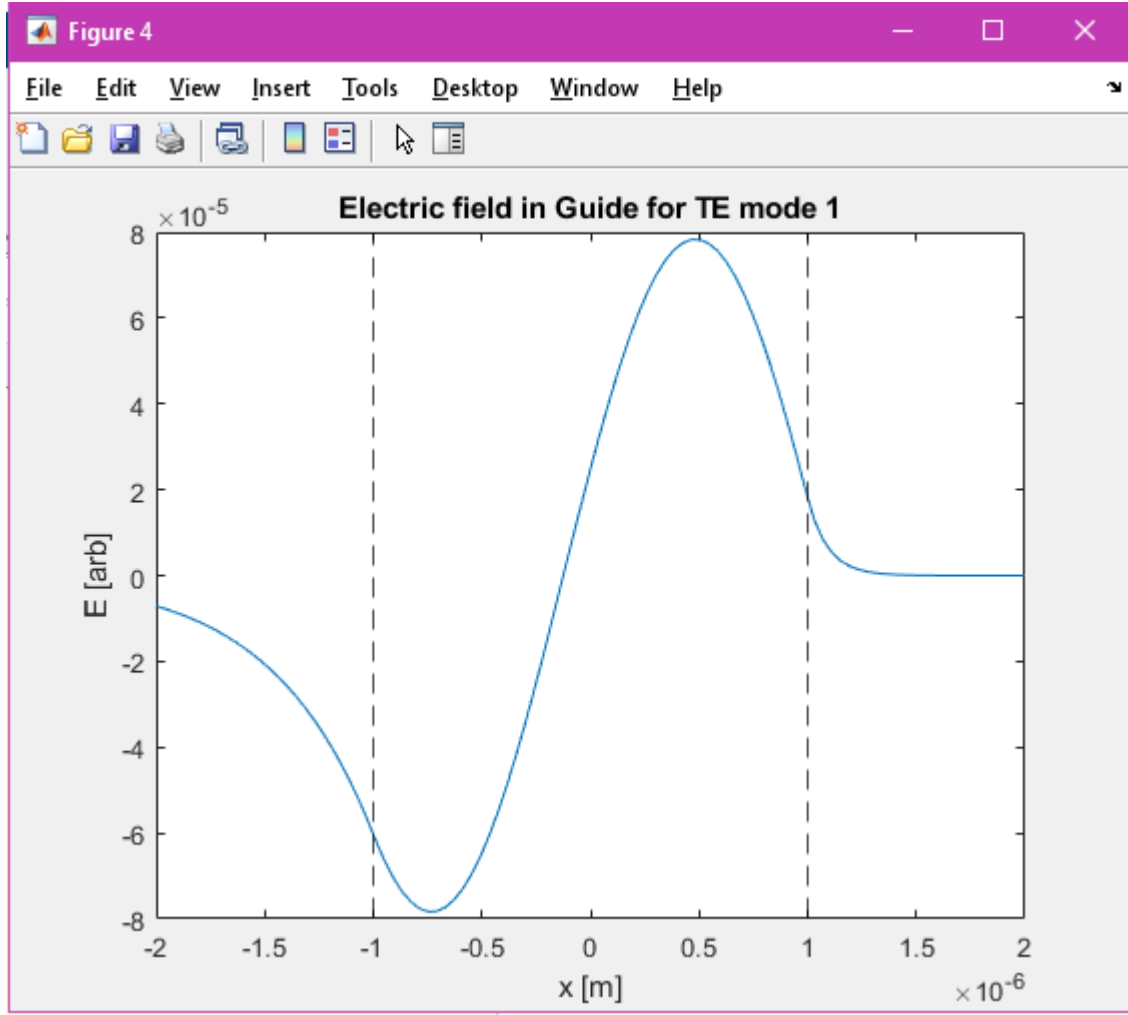
Figure 4: Plot of electric field of m = 1 mode for a 2 micron wide guide for 633 nm wavelength, cover index n1 = 1.0, guide index n2 = 1.5095, and substrate index n3 = 1.4711. The left region is n3, the middle n2, and the right region is n1