

# OS7201 Electromagnetic Optics Analysis Using FDTD Method

## Homework #4 Due: 11/08/2022 at 2:00 p.m.

1. (100%) Repeat the results of the example “the invisible slab” given in Lecture 9. Your code should be able to show
  - the propagation of  $E_y$  and  $H_x$  fields across the entire 1D grid, and
  - the *real-time* reflectance, transmittance, and normalized total power spectra.

Put the field plots and the spectra in the same MATLAB figure using the command “subplot”. When running your code, you should see the plots identical (or similar) to those shown on p. 49 of video lecture 8.

*Make sure your code is clean and well-commented and the figure(s) look professional.*

### **Note:**

Follow exactly the block diagram (i.e. flow chart) given in the lecture notes of lecture 8, pp. 39 – 40.