Microwave Engineering

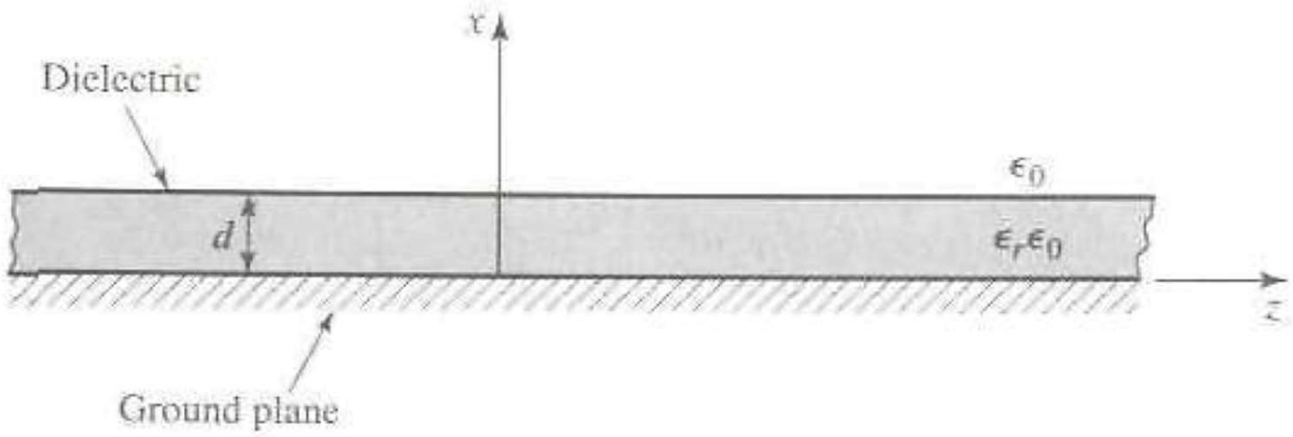
10/04/17

Last name:	First name:

Exercise 1

Grounded dielectric sheet:

- Derive the cut-off condition for TE and TM modes.
- Calculate and plot the propagation constants of the first three propagating surface wave modes for $\varepsilon_r=2.55$ and $0<d/\lambda_0<1.2$.



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Exercise 2

Consider a plane wave normally incident on a half space of copper. If the wave frequency is f=5 GHz, compute the propagation constant, the intrinsic impedance, and the skin depth for the conductor. Also compute the reflection and transmission coefficients.

Hint: for copper, $\sigma=5.813 \times 10^7$ S/m.