

Fields and Waves I, ECSE 2100

Preparation Assignment due Monday, September 18, 2000

1. On an interface between air (assume properties of vacuum) and a dielectric with $\epsilon_r = 3$ the electric field on the air side has two components. The component normal to the surface is $E_n = 20 \text{ V/m}$ and the component tangential to the surface is 10 V/m . Find E and D on the dielectric side of the boundary.

Preparation Assignment due Wednesday September 20, 2000

1. Capacitance is the ratio of what two quantities?
2. A parallel plate capacitor of $5.0 \mu\text{F}$ is filled with dielectric material of $\epsilon_r = 4$. The separation of the plates is $10 \mu\text{m}$. What is the area of the plates?