Name _____   **ECSE-2100   Spring 1999   Section** _____

Preparation Assignment

Due 19 April (2 points) Lessons 5.3,5.4 *(Note: Date is incorrect on paper copies outside the studio door)*
Reading PWN 6.3 – 6.6, 6.8.1

For what range of frequencies can seawater ($\varepsilon_r = 72$, $\sigma = 4$ S/m) be considered to be a good conductor? For what range of frequencies can it be considered to be a good dielectric?

An electromagnetic wave is propagating in the z-direction, i.e. $\mathbf{v} = v\,\mathbf{a_z}$. The electric field is $\mathbf{E} = E_x\,\mathbf{a_x}$. Draw a diagram showing the directions of $\mathbf{v}$, $\mathbf{E}$, and $\mathbf{H}$ for this wave.

21 April Class Time
Help session for Quiz 3

Due 22/23 April (2 points) Lesson 5.5
Reading PWN 5.7, 6.7

If you listen to a weak FM radio station in your car (frequency $\cong 100$ MHz), you might find that you will sometimes be in regions where the signal is very low (minimas of the standing wave pattern) and where the signal is adequate to hear clearly (maximas of the standing wave pattern). This pattern is formed by the interaction between the transmitted signal and reflections off of buildings, trees, etc. What is the approximate distance between some minimum of the standing wave pattern and the neighboring maximum for this frequency. You should notice this effect in Troy if you listen to WAMC on 90.3 MHz. If you are stopped at a traffic light and cannot hear the signal clearly, you only need to move forward or backward this distance to get a better signal. Try it sometime.

26 April (2 points) Lesson 5.6
Reading PWN 6.8 – 6.11

Write out Snell's Law and draw a diagram explaining the terms in this formula. What is the critical angle? What is Brewster's angle?

28 April Class Time
Open Shop for HW#8. Due at 5 pm.