Biology 241
PNS-Sensory Review

1. Pathway of general senses
   a. 3 neurons involved
   b. Where are their cell bodies located?
   c. What branches would they use to enter the spinal nerve?
   d. What root do they use to enter the spinal cord?

2. Be able to determine whether a receptor is an extero- or an entero- receptor.

3. Know what type of stimulus each specific receptor responds to (extreme stimuli, hot, cold, pressure, chemicals, light, etc.).

4. Which areas of the brain are involved in perception of sensation (thalamus vs. primary somatosensory cortex?)

5. Define adaptation and understand adaptation times of different receptors.

6. Know abnormalities of perception (referred pain, phantom pain), and their possible causes.

7. Know the external and internal parts of the eye along with their functions.
   a. Know which cranial nerves supply all extrinsic and intrinsic muscles.
   b. Know how the sympathetic vs. parasympathetic stimulates the ciliary muscle and the iris muscles. How do they alter the structures? What neurotransmitters are used? Receptors?

8. Know the differences between rods and cones.
   a. Which see in color, which require bright light, what pigments do they use?

9. Know the pathway for vision from the eye to area 17.

10. Know abnormalities of vision and their possible causes and cures (myopia, hyperopia, astigmatism, strabismus, amblyopia).

11. Know all the reflex pathways for the eyes (convergence, accommodation reflex, pupillary reflex)
    a. Be able to go from the photoreceptor to the brainstem and back out to a skeletal muscle or intrinsic muscle.

12. Know the parts of the ear (outer, middle, inner) and their functions.

13. Which parts are responsible for hearing, static equilibrium and dynamic equilibrium?
14. Know the sensory pathway for hearing and the cranial nerve involved.

15. Be able to identify the receptors for taste and smell and the cranial nerves that supply them. Also identify the brain areas responsible for these sensations (uncus, gustatory cortex (area 43)). Does the thalamus play a role?
   a. Does the sense have basal cells to replace neurons?