SENSATION

The basics

- Sensation vs. perception
  - Bottom-up processing
  - Top-down processing
    - Prosopagnosia
- Thresholds
  - Psychophysics
    - Absolute threshold
    - Signal detection theory
    - Subliminal messages
    - Difference threshold (JND)
      - Weber's Law/Fechner's Law
- Sensory adaptation
- Transduction
- Receptors

Other senses

- Touch
  - Pressure, temperature, pain
    - Nociceptors
  - Gate-control theory
- Taste (gustatory sense - chemical)
  - Sweet, sour, salty, bitter, umami
  - Taste buds
  - Sensory interaction
    - McGurk effect
- Smell (olfactory sense - chemical)
  - Does not go through the thalamus
  - Direct route to limbic system
- Kinesthesis
- Vestibular sense
  - semicircular canals
- Synaesthesia

Vision

- Light energy
  - Wavelength (color)
  - Amplitude (brightness)
- Parts of the eye
  - Cornea
  - Pupil
  - Lens
    - Accommodation
  - Retina (transduction here)
    - Rods (120 million)
    - Cones (6 million)
    - Fovea
  - Bipolar cells
  - Ganglion cells
  - Optic nerve to occipital lobe
    - Blind spot
- Visual acuity
  - Nearsightedness/farsightedness
- Feature detectors
- Parallel processing
- Blindsight
- Change blindness

- Retina to thalamus to cortex

- Color interpretation
  - Young-Helmholtz theory
    - Subtractive color mixing
    - Additive color mixing
  - Opponent-process theory
    - Afterimages
- Color constancy

Audition (hearing)

- Sound energy
  - Frequency (pitch)
  - Amplitude (loudness)
    - Measured in dB (decibels)
      - Every 10 dB = 10 times louder
- Parts of the ear
  - Outer ear
    - Pinna (visible part)
    - Auditory canal
  - Middle ear
    - Tympanic membrane (eardrum)
    - Ossicles (hammer, anvil, stirrup)
  - Inner ear
    - Oval window
    - Cochlea
      - Basilar membrane
      - Hair cells (transduction here)
      - Organ of Corti
    - Semicircular canals (NOT for hearing)
    - Auditory nerve to temporal lobe
- Perceiving sound
  - Place theory
  - Frequency theory
    - Volley principle
- Sound localization
- Hearing loss
  - Sensorineural hearing loss
    - Cochlear implant
  - Conduction hearing loss