OPTICS (PHYSIOLOGICAL): Perceptual Function / Color Vision

A. Anomalies Secondary to Acquired Neurological Impairment
   1. Adaptations to clinical techniques and tests to allow the assessment of the visual abilities of patients with acquired systemic conditions (CVA, multiple sclerosis, etc.) and traumatic brain injury (TBI) which result in neurological impairment and subsequent vision perceptual dysfunction
      a. Noncomitancy
      b. Field loss and neglect
      c. Loss of accommodation
      d. Loss of fusion
      e. Vision perception-motor deficiencies
   2. Modification of optometric management for the patient with acquired neurological impairment

B. Space Perception
   1. Direction and depth discrimination (monocular and binocular cues, oculocentric and egocentric localization)
   2. Characteristics of sensory function (binocular interactions including summation, binocular suppression and rivalry; corresponding points including horopter criteria)
   3. Disturbances of perceived direction and distance (aniseikonia and amblyopia)
   4. Sensory-motor interactions (fixation disparity, past pointing, visually guided behavior, body posture and perceived orientation, and self-motion)

C. Form Perception
   1. Static visual acuity (including test configurations, various acuity tasks, and factors influencing acuity including blur, intensity and contrast); specification of visual acuity
   2. Spatial contrast sensitivity function (including factors influencing the function)
   3. Illusions, constancies, and figure-ground relations
   4. Simultaneous contrast and spatial interactions (Mach bands)

D. Light Perception
   1. Detection characteristics at the absolute light threshold (including spectral, spatial, and temporal aspects)
   2. Brightness-difference thresholds at various adaptation levels (Weber's and DeVries-Rose laws); specification of contrast
   3. Dark and light adaptation processes and theories
   4. Spatial and temporal summation characteristics (Ricco's, Piper's and Bloch's laws)

E. Motion Perception
   1. Factors involved in the detection of real and apparent motion, detection of displacements
   2. Motion after-effects
   3. Dynamic visual acuity, visual performances with a moving object, and visual performances with a moving observer

F. Temporal Perception
   1. Critical flicker fusion frequency, including factors influencing test object (size, location and adaptation level)
   2. Subfusional flicker phenomena (Bartley brightness enhancement)
   3. Successive contrast and masking
   4. Temporal contrast sensitivity function
   5. Stabilized retinal images and monocular suppression (Troxler effect)
   6. Saccadic suppression

G. Color Perception
   1. Chromatic discrimination (hue and saturation) for normal and defective color vision
   2. Color mixture and appearance
   3. Color contrast, constancy, and adaptation
   4. Color specification and colorimetry (CIE)
5. Spectral sensitivity of normal and defective color vision
6. Mechanisms of color deficiencies
7. Inherited anomalies of color vision
   a. Classification
   b. Inheritance patterns
   c. Color vision tests (e.g., pseudoisochromatic tests, arrangement tests, anomaloscope)
8. Acquired anomalies of color vision
   a. Classification
   b. Etiology
   c. Color vision tests
9. Conditions for color vision testing
10. Societal implications of color vision anomalies
    a. School
    b. Vocational requirements
    c. Patient interest
11. Patient management strategies
    a. Counseling
    b. Special aids

H. Basic Psychophysical Methods and Theory
   1. Measurement of absolute and difference thresholds
   2. Threshold determination (e.g., limits, adjustment, constant stimuli, forced choice, yes/no)

I. Psychophysical Scaling Methods and Theory

J. Signal Detection Methods and Theory