Sensory Systems - Visual system

Ziad Hafed, Andreas Bartels, Thomas Münch, Aristides Arrenberg. Wadood Haq

March 23 to March 27, 2020 // ONLINE VIDEO CONFERENCE!

	Monday March 23	Tuesday March 24	Wednesday March 25	Thursday March 26	Friday March 27
9:00 - 10:30	*Optics* (Hafed)	*Central visual pathways* (Hafed)	*Object recognition, cognition* (Hafed)	*Retinal processing* (Münch)	*Motion selectivity in pre-tectum, gaze stabilization* (Arrenberg)
10:45 - 12:15	*Introduction to the output channels of the retina* (Hafed)	*Color, motion, and depth perception* (Hafed)	*Eye movements* (Hafed)	*Retinal implants* (Haq)	*Colour and motion vision - cortical mechanisms* (Bartels)
		-------- Lunch break --------			
13:00 - 16:00	Review	Review	Review	Review	Review

This block course is intended for students of the Neural and Information Processing track of the graduate school. The course provides a basic introduction to the visual system from signal transduction to higher order processing. General principles of sensory coding across different sensory modalities will be highlighted.

The course is organized such that the first 3 days provide the bulk of the background necessary on the visual system and perception, and the remaining 2 days demonstrate state-of-the-art research related to the visual system and given by experts in each presented topic from the Tuebingen neuroscience community.

Learning targets:

Students will be able to name and identify the major brain circuitry involved in visual sensation. They will learn about the pathways for signals “entering” the brain and how they are processed to support perception and behavior. There will be a final exam.

Suggested reading:

Standard neuroscience textbooks, such as “Principles of Neural Science” by Kandel, Schwartz, & Jessell.