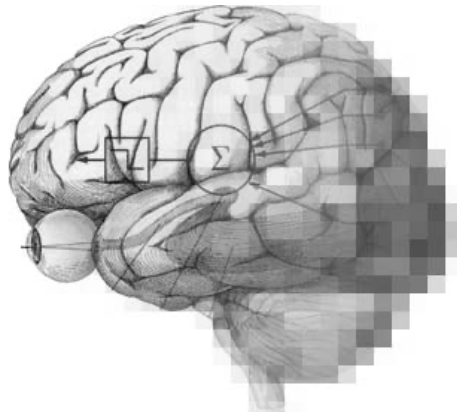# COURSE ANNOUNCEMENT
HARVARD GSAS: Neuro/MCB/Physics 131
(cross-listed in SEAS)

Computational Neuroscience
Prof. Haim Sompolinsky, Hebrew University/Harvard

canvas.harvard.edu/courses/49249

Mondays and Wednesdays, 3-4:15 PM

Questions? Email:
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Haim Sompolinsky: hsompolinsky@mcb.harvard.edu

Description: Follows trends in modern brain theory, focusing on local recurrent circuits and deep neural architectures. Explores the relation between network structure, dynamics, and function. Introduces tools from information theory, dynamical systems, statistics, statistical physics, AI and machine learning in the study of experience-dependent neural computation. Specific topics include: computational principles of early sensory systems; unsupervised, supervised and reinforcement learning; attractor computation and memory in recurrent cortical circuits; noise, chaos, and coding in neuronal systems; learning computation in deep neural networks in the brain and in AI systems.

Prerequisites: Basic knowledge of multivariate calculus, differential equations, linear algebra, and elementary probability theory. This course is aimed at graduate students and advanced undergraduates.