

Course Syllabus

CBNP 5033Q Systems Neuroscience (2 credits)

Spring 2021 (Block 5): Tues/Wed 5:00 – 6:50 PM

Course Director: Kevin Beck Ph.D. (kevin.d.beck@njms.rutgers.edu)

Location/format: Lectures will be remote, with some synchronous (S) and some asynchronous (AS).

Grading: The three exams will be take-home format (equal weighting for the final grade).

Description: This Systems Neuroscience course will cover the organization and function of sensory systems, motor processing systems, central control of neuroendocrine systems, and the limbic system. By the end of the course, students should have a fundamental knowledge of the anatomy, biochemistry, physiology and function of each of the systems.

Schedule:

4/20 Introduction: basic neuroanatomy and fundamentals (S) Beck
4/21 Somatosensory System (AS/S) Levison
4/27 Pain (AS) Hu
4/28 Vision (AS) Ilyas
5/4 Auditory System (AS) Carcea
5/5 EXAM 1
5/11 Motor System (AS) Falvo
5/12 Cerebellum (AS) Feinstein
5/18 Basal Ganglia (AS) Feinstein
5/19 Limbic System (S) Beck
5/25 EXAM 2
5/26 Neuroendocrine Systems I (S) Beck
6/1 Neuroendocrine Systems II (S) Beck
6/2 Autonomic Nervous System (S) Beck
6/8 Genetic influences on neurosystems (S) Citron
6/9 EXAM 3

Suggested References:

Books

Essentials of Modern Neuroscience. Franklin R. Amthor, Anne B. Theibert, David G. Standaert, Erik D. Roberson (Part I, Sections 1 and 3)

Fundamental Neuroscience. (4th edition) Larry R. Squire.

Online Resources

Online version of Essentials of Modern Neuroscience is available online via the Rutgers Libraries:

<https://accessmedicine-mhmedical-com.proxy.libraries.rutgers.edu/book.aspx?bookid=2938#247987625>Links to an external site.

Online version of Fundamental Neuroscience (4th ed.) is available online via the Rutgers Libraries:

<https://www-clinicalkey-com.proxy.libraries.rutgers.edu/#!/browse/book/3-s2.0-C20100650358>Links to an external site.

Albany Medical College Virtual Brain. This is a series of interactive and customizable 3-D simulations of brain anatomy. It is available for free download at the following url:
www.amc.edu/academic/software/index.cfmLinks to an external site.

<http://library.med.utah.edu/WebPath/HISTHTML/NEURANAT/NEURANCA.html>Links to an external site.