COURSE GUIDE

HST 130/Neurobiology 200
Neuroscience FALL 2019

Course Description

HST 130/Neuro 200 is a comprehensive course in Neuroscience for HST Medical Students and HMS Graduate Students. We hope to provide physician/scientists and basic scientists with knowledge of the scientific fundamentals of basic and clinical neuroscience, and the experimental process from which they are derived. Basic principles of organization and function of the nervous system will be discussed and will be illustrated by reference to the pathophysiology of neurological and psychiatric disorders.

The course will span modern neuroscience from molecular neurobiology to perception and cognition, including the following major topics:

- cell biology of neurons and glia
- ion channels and electrical signaling
- anatomy and development of the brain
- synaptic transmission, integration
- chemical systems of the brain
- sensory systems, from transduction to perception
- motor systems
- higher brain function (memory, language, affective disorders)

The class meets three days a week (M,W,F), beginning at 8:30AM. Class runs from 8:30AM-12:00PM on MW, and all lectures on Fridays end by 10:00AM. On some days, a 1-2 hour lecture will be followed by 1.5 hours of laboratories or small group conferences. Three midterms and one final exam will be given. Enrollment is limited to 60 students.

Recommended Texts

• Johnston's and Wu's Foundations of Cellular Neurophysiology
• Nolte's The Human Brain
• Kandel's Principles of Neural Science

Notes

Lecture Notes and PPTs

Many lecturers have provided advance lecture notes/outlines, which are included in the syllabus and separately under the 'Files' tab in Canvas. These notes are intended to complement the lectures. They should not be considered to be comprehensive, nor will they perfectly match the lectures, as lecturers often adapt their presentation as dictated by the class response, either during the lecture or from year to year. To facilitate students, last year's PPTs will be placed on 'Canvas if available. When an updated/new version is created, every attempt will be made to have it uploaded to 'Canvas' in a timely fashion prior to the lecture. However, in some instances, an updated PPT may not be available until right after the lecture.

Patient Presentations

A series of patient presentations form an integral part of the course. Students and faculty are reminded of the physical effort required for some of these patients to meet with us, of the courage they show in opening their conditions and emotions to us, and of the consideration and gratitude due to them. Please apply appropriate "bedside manner" during patient presentations; for example, do not eat or drink in class during patient presentations, please be sure to turn off cell phones and laptops and -- most of all -- please come to presentations ON TIME.

Problem Sets & Labs

Physiology problem sets and Anatomy exercises are due on the day of the conference or lab. Please be ready to hand in a paper copy.

Grading

Final grades in the course will be determined by exams and problem sets in Blocks I – III (20% each) and the final exam (40%). Problem sets will be graded for completeness rather than complete accuracy, though students are encouraged to correct their problem sets through the discussion sections, as the concepts in the problem sets are critical to success on exams. The instructors of the course reserve the right to adjust grades based on active participation and engagement in the course. Please refer to the course schedule for exam dates. The final exam will be cumulative, covering Blocks I-IV. A copy of the HMS/HST policy on absences from examinations follows.

HMS Policy on Examinations

- Nature, frequency, content and scoring of examinations are under the discretion of the course director. All formally designated exams are required of all students registered in the course.
- Midcourse exams should take place no later than approximately halfway through a course with timely feedback to the students about their academic performance.
- Grounds for excuse from an examination include:

    - Illness confirmed by written notice from UHS/MIT or a private physician, dated on or before the examination date.
    - Family emergency requiring the student to leave Boston, in which case the student shall contact the course director (or Patty Cunningham in the HST Office, 432-1738) as soon as possible and later provide a written account of the circumstances to be given to the course director and HST master.
    - The student is scheduled to present his/her work at a national meeting on the day the exam is scheduled. In this case, the excuse is not automatic but must be approved in advance by the course director.
- Final examinations and reexaminations can be deferred only with permission of the course instructor; a temporary grade of Incomplete is recorded and the student must complete the course by a specified time. If a student without permission does not take an examination, a grade of unsatisfactory is recorded for the examination and if applicable, for the course.
- Make-up exams shall be provided at a single time for students who have been excused from an exam; a make-up exam should be equivalent to the original exam, but NOT the same exam.
- Students who fail a single course or clerkship are required to take a reexamination or do remedial work. If there is a failure on reexamination, a grade of Unsatisfactory is reported to the Registrar and the Academic Societies Promotion and Review Board. The Board may require the student to retake the same or equivalent course as approved by the course director, society master, and Promotion Board. Any Unsatisfactory grade must be made up before graduation.
- If a student has two examinations simultaneously, the student should notify both course directors in writing; the course directors should consult with the student and arrange the times at which respective exams will be taken.
- Course directors agree to be sensitive and avoid scheduling hour, midterm and final examinations on religious holidays.

Block Leaders

Block 1 – Cellular Neurophysiology

Jeffrey Holt, Ph.D.
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Block 2 – Neuroanatomy

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Block 3 – Systems Neurophysiology

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Block 4 – Neurobiology of Disease

Ziv Williams, M.D.
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Additional Lecturers

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Teaching Assistants

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