Cortical Sunburst: Greg Dunn

Neurobiology of Disease

Psych 318B/HLTH 318B

Spring Semester, 2017

Monday and Wednesday: 11:15-12:45 (Sharpless 416)

Professor: Mary Ellen Kelly, Ph.D

Contact: mkelly@haverford.edu

Office Hours: Mon/Wed 1:30-2:30 or by appointment; (S414)

Location: Sharpless 416

Course Overview:

- Throughout this course we will survey several disorders of the central nervous system, providing students with both a clinical perspective on the disease as well as an understanding of the pathophysiological mechanisms that underlie the disease state. Throughout the course, the relationship between advances in basic science and advances in understanding neurological disease states will be highlighted. As disorders of the nervous system provide a unique opportunity to better understand normal brain function, readings for each disorder will focus on a particular theme such as neuroplasticity or mechanisms of cells death. The course will be organized into three modules: disorders of an acquired nature (cerebrovascular disease, head injury, epilepsy), neurodegenerative disorders (Alzheimer's, Parkinson's disease), and disorders with a defined genetic underpinning (Huntington's). In each of these modules we will discuss normal function of an affected circuit and, if appropriate, how or why these brain structures are susceptible to a particular inherited genetic defect or an acquired disease state. We will also

highlight the importance of appropriate animal models to our understanding of these diseases and how state-of-the art advances in all facets of neuroscience are leading to novel therapeutic approaches to treating these diseases. The course will involve both formal (interactive) lectures, as disorders are introduced and potential mechanisms discussed, as well as a seminar style classes highlighting promising research via primary research papers to be presented by students. *Prerequisite: One 200-level course Behavioral Neuroscience, such as HC PSYC 217, 260, or BMC PSYC 218*.

Readings:

- Though there is no assigned text for this course, access to an introductory level textbook on Brain and Behavior is recommended. Readings from primary research and clinical journals will be assigned for each class and will be the main resource for this course. **Assigned readings for each class will be listed on the moodle site and should be read prior to class**.

Course Requirements and Grading:

Given that the majority of course content can only be garnered from the lectures and class discussions of journal articles, attendance is mandatory and will count towards your participation grade. **It is expected that all students will come to class having read the assigned reading and be willing to share your thoughts in an interactive way.**

Grading:

Participation/Attendance (Readings are essential)	15 %
Mini-Assignments (4 mini assignments worth 5 marks each)	20 %
Student Presentation	20 %
Research Paper: **Due April 24th**	25 %
Final Exam (Take-home during Exam Period)	20 %

Participation/Attendance: (15%)

- Overall participation marks will be dependent on class participation, completion of class assignments/activities (not graded) and attendance. Should you need to miss a class due to illness or other circumstance please e-mail me prior to class if possible.

Mini-Assignments: (20%)

- This component of your grade will take the place of a mid-term exam. These assignments will be take-home and open book and require you to integrate and understand the material and readings discussed during class. There will be 4 of these mini-assignments worth 5 marks each.

Student Presentations: (20%)

- In groups of 2 (tentative), students will introduce the general neuroscience theme under discussion followed by a more in-depth discussion of this topic through presentation of 1 or 2 relevant journal articles. It is expected that students not presenting will have read the journal article prior to class and have prepared questions/comments to enhance class discussion.

Research Paper: (25%)

- Each student will write an 8-10 page research paper (not including references) focused on a neurological disorder of their choosing. Disorders can include those covered in class, in addition to diseases that were not discussed. Further details as to this aspect of course curriculum will be elaborated on during class.

Final Examination: (20%)

- This exam will assess course material covered throughout the semester and will require integration and review of the various themes discussed. The exam will be **take-home** and will include both a closed book and open book section (majority open-book).

Letter Grade Determination:

94.0% and above- A	75.0 – 79.99----- B-
90.0 - 93.99---- A^-	70.0-74.99------ C+
85.0-89.99----- B+	65.0 – 69.99----- C
80.0 – 84.99----- B	60.0 – 64.99---- C-

Note: Audio recording of class lectures requires permission of instructor.