

Development & Dysfunction of the Nervous System

SPRING 2013

(revised 16 May 2013)

Faculty

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Teaching Assistant

Office hours: after class or by appointment

Writing Consultant

Schedule

LECTURES	Tuesday & Thursday 12:30 - 1:45 PM Meyer 815	RECITATION	Wednesday 12:30 - 1:45 PM Meyer 815
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Readings

Assigned:

- (1) *Development of the Nervous System, Third Edition* (Academic Press, 2012)
DH Sanes, TA Reh, WA Harris
- (2) *PDF files of primary research and review articles will be posted on NYU Classes*

Supplemental:

- (1) *Developmental Biology, Ninth Edition* (2010) Sinauer Associates, Gilbert SF
- (2) *Neurobiology of Disease* (2007) Elsevier Academic Press, Gilman S
- (3) *Diseases of the Nervous System in Childhood* (1992) Mac Keith Press, Aicardi A

Attendance

The lectures and recitations are compulsory. If you miss more than one class without a legitimate excuse, then the highest grade that you can obtain for the course is a B+.

Recitation

The recitation serves two purposes. First, contemporary research articles will be presented and discussed, both by the instructor and by the students. Second, some sessions will be set aside to obtain advice and direction on the term paper topic and the final oral presentation. Students may work together when preparing a presentation for Recitation section.

Midterm Exam Questions

There will be one midterm exam covering the lectures and readings through 7 March ("*Naturally Occurring Neuron Cell Death*" will be on the exam).

One week before the exam (March 6), each student will submit 2 short answer questions & answers for each of the first 5 lecture topics that we cover during the period, Jan 29 through Feb-28 (Early development, FAS, Pathfinding, Axon regeneration, Target recognition). This is a total of 10 questions per student. The correct answer to each question must be explained, and the source for this answer cited (including page number for written sources or lecture date for presented information).

Students may **NOT** work together when preparing exam questions and answers.

Midterm Exam

The midterm exam will be comprised of student-generated short-answer questions, and an instructor-generated short essay question.

The midterm exam will be given in-class on March 13.

Students may **NOT** work together when taking the midterm exam.

Term Paper (For complete information, please refer to the "Term Paper" description)

The purpose of the term paper is to learn how to read and evaluate primary research. The term paper will critically evaluate 2 primary research articles that address one **hypothesis** related to a developmental disorder of the nervous system.

Students may discuss their paper topic with one another, but may **NOT** work together when writing any portion of the term paper outline or text.

Final Presentation

Each student will deliver a presentation based upon the term paper topic. The presentation should be in PowerPoint format (or PDF or Keynote), and it must not exceed 15 mins; there will be a brief question period after each talk. I strongly encourage you to practice the talk in advance so that you remain within the time limit. A preliminary PPT must be submitted on April 24 for pre-review.

Students may **NOT** work together when preparing the Final presentation.

Grading

The final grade will be determined from your performance on the following assignments:

10%	midterm exam questions & answers
20%	midterm exam
40%	term paper
15%	oral presentation of your term paper topic
15%	participation and performance in recitation

Oral participation during the lectures is strongly encouraged and those who play an active role throughout the semester will get an increase of 0.3 on their final grade (on the 0-4 scale). Extra credit assignments are not available. Extensions are granted for documented health issues or personal emergencies.

Summary of Important Due Dates:

Feb 14	Term paper topic & 2 references
Feb 27	Term paper outline
Mar 6	Questions & answers for midterm
Mar 13	Midterm exam (in class)
Mar 27	First page of term paper
April 17	Term paper
April 24	Preliminary PPT
May 1 to 14	Final presentations

SCHEDULE OF LECTURES & RECITATIONS

DATE	TOPIC	READINGS
Jan 29	Early Development of the CNS: Induction & Polarity	Ch 1: pgs 1-15 & 17-21 Ch 2: pgs 23-32
Jan 30	RECITATION "Journal Club" (Thu Huynh will present a basic research article that employs and experimental model of a developmental disorder)	PDF files (NYU Classes)
Jan 31	Early Development of the CNS: Birth & Migration	Ch 3: pgs 49-64 & Box: Neural crest cells
Feb 5	Fetal alcohol syndrome	PDF files (NYU Classes)
Feb 6	RECITATION Discussion and help with choosing a topic for your term paper and presentation (Submit a tentative topic)	
Feb 7	Fetal alcohol syndrome	PDF files (NYU Classes)
Feb 12	Growth Cones & Pathfinding	Chapter 5
Feb 13	Growth Cones & Pathfinding	Chapter 5
Feb 14	RECITATION "Journal Club" (Thu Huynh will present a basic research article that employs and experimental model of a developmental disorder) ** Term paper topic & 2 references due **	PDF files (NYU Classes)
Feb 19	Traumatic Brain Injury & Axon Regeneration	PDF files (NYU Classes)
Feb 20	RECITATION Feedback on Term Paper topics & advice on the Outline	
Feb 21	Traumatic Brain Injury & Axon Regeneration	PDF files (NYU Classes)
Feb 26	Target Recognition & Topographic Maps	Chapter 6
Feb 27	RECITATION Student-led Journal Club 1 ** Term paper outline due ** ** Place document (rtf or doc) in NYU Classes File Drop by 5:00pm **	PDF files (NYU Classes)
Feb 28	Target Recognition & Topographic Maps	Chapter 6
Mar 5	Naturally Occurring Neuron Cell Death	Chapter 7
Mar 6	RECITATION Student-led Journal Club 2	PDF files (NYU Classes)
Mar 7	Naturally Occurring Neuron Cell Death ** Midterm Exam questions & answers due ** ** Place document (rtf or doc) in NYUClasses File Drop by 5:00pm **	Chapter 7
Mar 12	Cerebral Palsy	PDF files (NYU Classes)
Mar 13	MIDTERM EXAM	PDF files (NYU

Mar 14	Cerebral Palsy	Classes)
(SPRING BREAK - March 16-24)		
Mar 26	Synapse Formation & Plasticity	Chapters 8-9
Mar 27	RECITATION Student-led Journal Club 4 ** First page of term paper due ** ** Place document (rtf or doc) in NYUClasses File Drop by 5:00pm **	PDF files (NYU Classes)
Mar 28	Synapse Formation & Plasticity	Chapters 8-9
Apr 2	Attention Deficit Hyperactivity Disorder	PDF files (NYU Classes)
Apr 3	RECITATION Student-led Journal Club 5	PDF files (NYU Classes)
Apr 4	Attention Deficit Hyperactivity Disorder	PDF files (NYU Classes)
Apr 9	Fragile X & Mental Retardation	PDF files (NYU Classes)
Apr 10	RECITATION Student-led Journal Club 6	PDF files (NYU Classes)
Apr 11	Fragile X & Mental Retardation	PDF files (NYU Classes)
Apr 16	Schizophrenia	PDF files (NYU Classes)
Apr 17	RECITATION Turning your Term Paper into a presentation ** Term paper due ** ** Place document (rtf or doc) in NYUClasses File Drop by 5:00pm **	
Apr 18	Schizophrenia	PDF files (NYU Classes)
Apr 23	Autism & Williams Syndrome	PDF files (NYU Classes)
Apr 24	RECITATION Student-led Journal Club 7 ** Preliminary presentation due ** ** Place document (ppt or pdf) in NYUClasses File Drop by 5:00pm **	PDF files (NYU Classes)
Apr 25	Autism & Williams Syndrome	PDF files (NYU Classes)
Apr 30	Sensory Development & Deprivation (e.g., Hearing Loss)	Chapter 10 & PDF files
May 1	STUDENT PRESENTATIONS	
May 2	STUDENT PRESENTATIONS	
May 7	STUDENT PRESENTATIONS	
May 8	STUDENT PRESENTATIONS	
May 9	STUDENT PRESENTATIONS	
May ?	STUDENT PRESENTATIONS (to be scheduled)	

(Exam Week - May 15-21)

Course ends / **NO** FINAL EXAM
