NEURL-UA 305 (Undergraduate course ID)

Development & Dysfunction of the Nervous System

SPRING 2018

(revised 27 February 2018)

Faculty
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Teaching Assistant
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Office hours: after class or by appointment

Schedule

Lecture & Recitation Thursday
1:30 - 4:00 p.m.
Meyer 760 (first class meeting will be displaced)

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

Journal Club

During journal club, each of us (Dan in week one, Justin in week two) will present a primary research article that falls within that week's lecture topic. Beginning in week three, students will make the presentations. Each article to be presented will be pre-selected and assigned to each student. Students are expected to carefully read each article in advance, and be prepared to actively participate in the discussion, whether or not they are presenting the paper. Students will be called on to critically evaluate any and all aspects of the article, including scientific motivation, research methodology, results, and interpretations.

Midterm Exam

The midterm exam will be comprised of short-answer and short essay questions.
The midterm exam will be a take-home exam.
The midterm exam will be posted on NYU Classes on March 6 by 5:00 p.m.
The completed midterm exam will be due on March 9 by 5:00 p.m.
The completed midterm exam should be posted to your folder on NYU Classes.
Students may **NOT** discuss the exam with one another or work on it together.

Term Paper (refer to the "Term Paper" description posted on NYU Classes)

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.

Student Lecture on Term Paper Topic
Each student will deliver a presentation on the developmental disorder covered in their term paper. The presentation should include a description of the human condition (phenotype, etiology, prevalence), and research conducted with one animal model. The presentation should be in PowerPoint (or PDF or Keynote) format, and must not exceed 20 minutes. Questions will be encouraged and accepted throughout the presentation. You will be able to submit a preliminary version of your presentation and get feedback from Dan and Justin.
Students may **NOT** work together when preparing their lectures, but may deliver the lectures to one another for feedback on the format.

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

20%	Class participation & Journal Club participation
25%	Midterm Exam
10%	Outline for Term Paper
20%	Term Paper
25%	Student Lecture

Extra credit assignments are not available. Extensions are granted for documented health issues or personal emergencies.

Summary of Important Due Dates:

Feb 8	Term paper topic & 2 primary research articles
Feb 15	Term paper outline
Feb 22	First paragraph of term paper
Mar 5	Term paper
Mar 9	Midterm
1 week before presentation	Preliminary PPTX of Lecture
scheduled	Lecture

Attendance
Attendance is compulsory. If you miss a class without a legitimate excuse, then the highest grade that you can obtain for the course is a B+. If you miss two classes without a legitimate excuse, then the highest grade that you can obtain for the course is a B. And so forth.

SCHEDULE OF LECTURES & RECITATIONS

DATE	TOPIC	READINGS
	Nervous System Development	
Jan 25	**Lecture: Behavioral development**	Chapter 10: pgs 302-325
	Journal Club: (Dan) Recitation (Justin): Assign and schedule student Journal Club presentations; How to choose a topic for your term paper and lecture	Assigned: Harlow and Zimmerman (1959) Optional: Blair (2013); Kahn (2012) PDF file at NYU Classes
Feb 1	**Lecture: Birth & Migration**	Chapter 3: pgs 49-66
	Journal Club: (Justin) Recitation: Selecting references for term paper and lecture; Scheduling student lectures for second half of course	Assigned: Wichterle et al. (2001) PDF files at NYU Classes
Feb 8	**Lecture: Growth Cones & Pathfinding**	Chapter 5
	Journal Club: 4 student presentations at 10 mins each Recitation: Drafting term paper outline Due date: Term paper topic & 2 primary research articles	PDF file at NYU Classes
Online	**Lecture: Target Recognition & Topographic Maps**	Chapter 6
Feb 15	Journal Club: 4 student presentations Recitation: Writing your term paper (first paragraph) Due date: Term paper outline	PDF file at NYU Classes
Feb 22	**Lecture: Synapse Formation**	Chapter 8
	Journal Club: 4 student presentations at 10 mins each Recitation: Peer-to-peer editing of term paper Due date: First paragraph of term paper	PDF file at NYU Classes
Mar 1	**Lecture: Naturally Occurring Cell Death (Justin Yao)**	Chapter 7
	Journal Club: 4 student presentations at 10 mins each Recitation: Peer-to-peer editing of term paper	PDF files at NYU Classes (both main text and supplementary text)
Mar 5	Due date: Term paper	Post file to NYU Classes
Mar 6	Midterm take home exam available on NYU Classes	PDF file at NYU Classes
Mar 8	**Lecture: Plasticity**	Chapter 9
	Journal Club: 4 student presentations at 10 mins each Recitation: Preparing your student lecture	PDF file at NYU Classes

Mar 9	Due date: Completed Midterm Exam due by 5:00 p.m.	Post file to NYU Classes

(Spring Break: March 10 - 18)

Developmental Disorders

Mar 22	**Lecture: Cerebral Palsy**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
Mar 29	**Lecture: Fetal alcohol syndrome**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
Apr 5	**Lecture: Traumatic Brain Injury & Axon Regeneration**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
Apr 12	**Lecture: Attention Deficit Hyperactivity Disorder**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
Apr 19	**Lecture: Autism**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
Apr 26	**Lecture: Schizophrenia**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	
May 3	**Lecture: Developmental Hearing Loss**	PDF files at NYU Classes
	Recitation: Student Lectures Individual help with lectures (office appointment)	

Final Exam Week: May 9 - 15

NO FINAL EXAM