

## Course Syllabus

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### Course Information

Course Title: **Neurology of Cognition**  
Catalog #: NSC 4380.001  
Class Schedule: Monday/Wednesday 11:30 am-12:45pm  
Class Location: CR 1.202



Image source: The blue brain project

Term: Spring 2022

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### Professor Contact Information

Ana Solodkin, Ph.D.  
Office: BSB 13.609  
Office Hours: Monday/Wednesday: 8:30:00 -11:00 AM

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### Course Pre-requisites, Co-requisites, and/or Other Restrictions

NSC 3361 (Introduction to Neuroscience)

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### Course Description

The emphasis of this course will be on the basic sciences underlying our understanding of clinical disorders. The learning process will emphasize clinically based problem-solving skills associated with pathology of the human cerebral cortex. We will focus on higher order functions associated with neurological and psychiatric syndromes as they relate to dysfunction of the cerebral cortex and other brain regions. The course is primarily targeting students interested in a future career in health fields (clinical or research), from medicine, nursing, pharmacology, PT/OT, speech therapy and psychology to biomedical engineering.

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### Student Learning Objectives/Outcomes

At the end of the course, students will be able to:

- explain fundamental elements of functional neuroanatomy associated with cognitive functions
  - identify and explain the physiological and anatomical basis of neurological deficits.
  - apply fundamental neuroscience concepts to clinical scenarios.
  - interpret neurologic exam findings.
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### Suggested Textbook

Oxford Textbook of Cognitive Neurology and Dementia. Edited by M Husain and JM Schott  
Oxford University Press  
UK, 2019

### Additional Course Materials

The Neurobiology of Cognition and Behavior  
John Hart  
Oxford University Press  
UK, 2016

Cognitive Neurology: A clinical textbook  
Edited by: SF Cappa, J Abutaleb, J-F Demonet, PC Fletcher and P Garrard  
Oxford University Press  
UK, 2008

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### Web Sites

There are numerous websites with excellent graphics for visualizing human brain anatomy and neuropathology. Several of these are listed below.

- 2-D and 3-D Atlases from University of Washington (virtual images, some movies):  
<http://da.biostr.washington.edu/da.html>
  - The Whole Brain Atlas from Harvard University (MRI images):  
[www.med.harvard.edu/AANLIB/home.html](http://www.med.harvard.edu/AANLIB/home.html)
  - An extensive guide to Neuroscience related resources can be found at:  
<http://www.neuroguide.com/bestbets.html>
  - An excellent website for CNS pathology (under systemic pathology):  
<http://librarymed.utah.edu/WebPath/webpath.html>
  - Neurosyllabus (Basic Neuroanatomy):  
<http://www9.biostr.washington.edu/cgi-bin/DA/PageMaster?atlas:NeuroSyllabus+ffpathIndex:Splash^Page^Syllabus+2>
  - A nice, succinct summary of basic neuroscience concepts can be found at:  
<https://www.dropbox.com/s/98scik28702lehe/NeuroReview.ppt?dl=0>
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## Assignments & Academic Calendar

Topic	Week	Date	Reading	Activity
	<b>January</b>			
<b>Syllabus</b>	Syllabus	19		Overview
<b>Normal Cognitive Function</b>	Review of Neuroanatomy	24	Chapter 1	Lecture
	Neurological Examination	26	Ch. 10	Lecture
	Neuropsychology	31	Ch. 11	Lecture
	<b>February</b>			
	Medical Imaging	2	Slides	Lecture
	Artificial Intelligence	7	Slides	Lecture
	The Mighty Cerebral Cortex	9	Ch. 3-6	Lecture
	Basal Ganglia	14	Ch. 7	Lecture
	Review	16		
	Exam	21		<i>Partial 1</i>
<b>Localized Lesions</b>	Language Disorders	23	Podcast. Ch 12	Flipped
	Apraxia, Agnosia, Neglect	28	Ch. 16	
	<b>March</b>			
	Memory	1	Ch. 13	Lecture
	Space-occupying lesions	6	Slides	Lecture
	Stroke: Behavioral disorders	8	Slides	Lecture
	Parkinson's disease	13	Slides	Lecture
	<b>SPRING BREAK</b>	<b>14-20</b>		<b>Oh Bliss!</b>
	Review	22		
	Exam	27		<i>Partial 2</i>
	Individual Reports setup	29		Discussion
	<b>April</b>			
<b>Systemic lesions</b>	Neuropsychiatry	4	Slides	Lecture
	Depression	6	Slides	Lecture
	Traumatic Brain Injury	11	Ch. 41	Flipped
	Aging: Developmental disorders	13		TBD
	Aging: Dementia	18	Ch. 21, 32	Lecture
	Sleep	20	Slides	Lecture
	Conscious States	25	Podcast	Flipped
	Treatments	27	Slides	Lecture
	<b>May</b>			
	Review	2		
	Exam	4		<i>Partial 3</i>
	<b>SUMMER BREAK</b>			<b>Oh Bliss!</b>

## Course structure

The course will have the following:

- Online lectures: Will take place from January 18 to February 4. All will be accessible in Microsoft Teams at the same time on Mondays and Wednesdays as regular lectures. That is, from 11:30 am till 12:45 pm. As the size of the class is small, this approach will provide the opportunity for everybody to participate amply. It will be iterative with the inclusion of practice questions along the presentation (graded).
- Classic lectures: After February 4<sup>th</sup>, Dr Solodkin will give a presentation in person on the topics at the allotted times on Monday and Wednesdays. They will follow similar format to that of the online lectures (aka. Will include daily quizzes). Students are expected to attend these lectures in person.
- Flipped class: In three of the sessions, students will have access to a podcast to study basic material for each lecture prior to the corresponding session (Mon or Wed). The actual class time will be divided in 2 parts: 1) Pre-lecture flash quiz (graded) to assess general understanding of the material. It will take 10 min. 2) Instead of a formal lecture, a clinician with expertise in the particular topic will lead a discussion with clinical examples. These sessions will be either online or in person depending on the time constraints of the participating clinicians.
- Individual reports: students will set up a clinical case on the topic of their choice.

## Grading Policy

The final grade for this course is based on performance on the three examinations, the performance in the report and the daily quizzes. As the examinations are cumulative, there will not be a final examination.

All examinations will include information from any and all aspects of material presented, and will be comprehensive. The course builds day by day on what has already been presented, hence the need for **comprehensive** and **cumulative** understanding, reflected in the testing policy. Questions are predominantly multiple choice or short answer; many of the multiple-choice questions will use case vignettes. The quizzes in contrast to the exams, will focus on the specific material associated with the lecture at hand (mostly avoiding problem-based questions).

While we encourage students to work with each other and utilize a wide range of notes and resources in their studying, *a notable exception to this will be during exams*. All exams will be closed book exams and will be given via LockDown. There will be review sessions before and after each exam (the latter by appointment).

Grading for this course is based on our absolute expectations as well as some comparative considerations. Your performance on the three examinations of the course will count for 60% of the grade (equal weight). The report will count for 10% of your grade and the in-class quizzes

(weekly participation) will account for 30%. Any student who achieves an average score of 60% will pass. Final grades: A 90 -100%; B 80 – 89.9; C 70 – 79.9; D 60 – 69.9

Note that the final grades will depend on the above metrics only. There is no extra credits in this course.

Absence on any of the exams or case report will give you a “**zero**” score unless there is **documented** authorization for the absence.

Do not let the daily work slip. Both knowledge and ignorance in the course content can be cumulative. You must keep up on a daily basis, and not be tempted to slip into intermittent periods of cramming. Most students who have gotten into serious academic trouble tried to do just that, or showed up so infrequently at lectures as to render the course a ghost course. We urge you to stay in contact with your TA and Prof. Solodkin and bring your difficulties to their attention. We cannot be of assistance if we are unaware of the areas of difficulty.

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### Course & Instructor Policies

Class lecture slides will be posted on *elearning* prior to each lecture. No portion of these slides may be sold, retransmitted, reposted, duplicated or otherwise used without the express written approval of the author. Podcasts associated with the flipped lectures will also be posted several days prior to the discussion dates. All material will be accessible in the course’s site in eLearning.

*All students are expected to attend all lectures, and will be responsible for any and all information presented in lectures.*

*Special assignment: Report case study:* An integral part of this course is a PBL case study, which is prepared to illustrate the crucial application of the basic sciences to problems in clinical cognitive neurology. CT or MR images of the nervous system accompany this case. There will be 2 possible cases where you will need to choose one. They will be available on April 14. You will have 5 days to upload your responses not later than April 21. Immediately after the deadline, you will have access to the answer sheets for your case and the other case. These cases will be available in *elearning*. This also means that late uploads will not be accepted.

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### Comet Creed

*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

*“As a Comet, I pledge honesty, integrity, and service in all that I do.”*

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### UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***