

# THE UNIVERSITY OF BRITISH COLUMBIA

# PSYC 301-002 Brain Dysfunction and Recovery Winter 2021 Term 2

# **Syllabus Summary**

Instructor



Dr. Silverberg

Subject



**Brain dysfunction** 

Structure



1 live Zoom class/week + asynchronous online

Assessments

Discussion board posts (10%) Groupwork participation (10%) 3 multiple choice exams (55%) 1 review paper (25%)

# Instructor

Noah Silverberg, PhD, R.Psych (<a href="https://psych.ubc.ca/profile/noah-silverberg/">https://psych.ubc.ca/profile/noah-silverberg/</a>). My pronouns are he, him, and his. Complete Lesson 1.2: Meet your instructor on our course Canvas page to learn more.

# Acknowledgement

I am teaching on the unceded territory of the Musqueam people. UBC was built on this land without permission or compensation. As a White settler, I am deeply grateful for the opportunity to carry on the tradition of teaching on these beautiful lands. I also wish to acknowledge that I am a psychologist, a profession that has not always done more good than harm for Indigenous people in Canada. I am committed to being mindful of this history and contributing to repairing harm.

#### **Email communication**

If you have questions about the course content, please post your questions to your learning group's discussion board (described below) for your peers to answer or ask me in our weekly live class (also described below) before emailing the Teaching Assistant, Caroline (cmiller@psych.ubc.ca). If you have questions about the deadlines, expectations, grading, or other course administration details, email the TA. Use your UBC email account and include PSYC 301 in the subject line. For academic concession requests, see the Missed Exams or Deadlines section below (pg. 9).

#### Office hours

Caroline (TA) will hold office hours by appointment. Contact her at <a href="mailto:cmiller@psych.ubc.ca">cmiller@psych.ubc.ca</a> to arrange an appointment if you would like to discuss course content or study strategies, or to review your exam. I will hold office hours on Zoom at 3:00-4:00 pm on Fridays or by appointment. Click here <a href="mailto:calendly.com/psyc301\_silverberg/">calendly.com/psyc301\_silverberg/</a> to book a 1:1 appointment with me. Drop in to my office hours if you would like to discuss course content or anything else in the field of neuropsychology.

## Location

Canvas (<a href="https://canvas.ubc.ca/courses/62392">https://canvas.ubc.ca/courses/62392</a>). Lectures, readings, videos, links to live Zoom sessions, exams, and discussion boards are available on our Canvas course site. For help navigating the site, watch the video in Lesson 1.3: Orientation to Canvas, in the Week 1 module.

## **Course Description**

This course is about when things go wrong with the human brain. The content spans 3 modules:

- 1. Consequences of brain dysfunction (Weeks 2-5). We will survey clinical syndromes and their neuroanatomical correlates. We will explore what happens when various brain regions/networks get damaged or stop working properly.
- 2. Causes of brain dysfunction (Weeks 7-10). We will examine the most common neurological conditions, specifically, the kinds of injuries, illnesses, and diseases that impair brain function.
- 3. Assessment and rehabilitation of brain dysfunction (Weeks 11-14). We will focus on how clinicians assess what damage has been done and treat (or lessen the impact of) impairments associated with brain dysfunction.

Understanding causes and consequences of brain dysfunction will also help you understand how the healthy brain works.

Covering these topics adequately means having to exclude other relevant topics. This course will <u>not</u> cover typical brain development, neurodevelopment disorders, the neuroscience of psychiatric disorders (e.g., schizophrenia), headache disorders, spinal cord injury, or diseases primarily affecting the peripheral nervous system (e.g., Guillain Barré syndrome). We will only minimally cover sensorymotor pathways and deficits, and their rehabilitation (e.g., gait training, vestibular rehabilitation, spasticity management, etc.). Our focus will be on cognitive, behavioural, and affective changes associated with acquired brain injury or disease.

# **Prerequisites**

PSYC 100 or any two of PSYC 101, 102, 205, 207, 208, 216, 217, or 277 Strongly recommended: PSYC 217 or 277, PSYC 304

You are expected to have basic knowledge of human neuroanatomy before starting this course. If you feel that it would be helpful, complete the UBC Psychology Neuroanatomy Refresher online module and/or the "Basic neuroanatomy review" chapter (Hart, 2020) available on our PSYC 301 Canvas site (<a href="https://canvas.ubc.ca/courses/62392">https://canvas.ubc.ca/courses/62392</a>). We have allotted time for this in Week 1.

# **Learning Objectives**

By the end of this course, you will be able to:

- 1. Classify and localize the 7 A's (agnosia, ataxia, apraxia, amnesia, aphasia, anosognosia, apathy) and frontal-subcortical dysfunction syndromes.
- 2. Describe the phenomenology of neurobehavioural impairments, that is, what they "look" like from the clinician's perspective and how they are experienced by the patient.
- 3. Summarize the epidemiology, clinical presentation, pathophysiology, and first-line treatments for the most common brain diseases in adulthood.
- 4. Recognize diagnostic and assessment techniques for detecting changes in brain structure and function.
- 5. Compare evidence-based approaches to brain injury rehabilitation and to slowing cognitive decline associated with aging and neurodegenerative disorders.
- 6. Apply knowledge of brain-behaviour relationships to analyze clinical cases (e.g., recognize possible lesion locations and diagnoses given a pattern of clinical signs and symptoms).

## **Teaching Philosophy**

I believe that studying clinical cases is the best way to learn about brain dysfunction. I will not expect you to memorize functional neuroanatomy before learning about brain disorders and diseases, but rather to develop working knowledge of functional neuroanatomy over the term by examining brain

disorders and diseases, illustrated through clinical cases. We will spend time with "textbook" cases with typical features, seminal historical cases, patients from my own clinical practice, and case stories reported in media. I believe that clinical cases make learning more meaningful and memorable. They also help the learner to develop compassion for people living with neurological disability and their loved ones, to see a person's suffering and resilience, and not just their diagnosis, pathology, or deficits.

## **Required Readings and Equipment**

I have not assigned a textbook for this course. Instead, there will be assigned readings and videos each week. The readings include a mix of book chapters, journal articles, and magazine and newspaper articles. The videos range from instructional demonstrations to mini-documentaries about people living with brain injury. The readings and videos are intended to deepen your understanding of material covered in prerecorded lectures, provide first-person accounts of what it is like to live with neurological disability, or for you to apply knowledge (e.g., critique a study).

## **Online Learning Format**

Online learning can be challenging for both students and professors. Let's try to make the best of it. I recognize that you may be facing unique challenges during this pandemic (e.g., different time zones, added responsibilities, etc.). For these reasons, we will have one live session each week and a variety of other learning activities that you can complete when you are most able. We will use a virtual discussion board in place of usual discussions that take place in the classroom.

Learning groups: To facilitate learning and promote connectedness with your peers, I will divide the class into to 10 learning groups of ~15 students each. You will remain in your learning group for the whole term. Each learning group will have their own discussion board and time within each live session to interact with just their learning group peers.

**Exam changes for the online environment:** Exams will be "open-book." To accommodate this change, more multiple-choice questions will all require analysis rather than memorization of facts. There will also be tighter time limits. Before starting an exam, you will be prompted to sign an integrity pledge stating that you will work alone and not share the questions or answers with anyone.

## **Learning Activities**

A typical week will include a combination of asynchronous and synchronous activities:

- 2-4 prerecorded lectures (15-45 minutes each)
- 2-3 assigned readings or videos (described above)
- Discussion board participation (details below)
- 1 live class at 2:00-3:00 pm PST on Fridays, except for exam weeks. Part of each session will be dedicated to Q&A about the prerecorded lectures. We will spend part of the live session together as a class and part in breakrooms rooms for each learning group to do groupwork (e.g., create concept maps and exam questions). These synchronous sessions may also include discussions of clinical cases and practice exam questions (ungraded).
- Self-directed learning. You are expected to work independently on your written assignment (details below).

## **Assessments of Learning**

Activity	Contribution	Deadline/Date
	towards final grade	
Discussion board posts	10%	Each Wednesday and Sunday by 11:59 pm PST
Participation in groupwork	10%	End of classes with groupwork
Midterm Exam 1	15%	Feb. 12, 2020 @ 2:00 pm PST
Midterm Exam 2	15%	Mar 19, 2020 @ 2:00 pm PST
Written assignment	25%	Apr 11, 2020 @ 11:59 pm PST
Final Exam	25%	TBD

Details on how each activity will be graded are provided below.

Discussion board posts: The goal of the asynchronous discussion board is to facilitate dialogue that would normally take place in a classroom. The discussion board provides an online place for students within each learning group (~15 students) to meet and digest, evaluate, and reflect on the course material, helping each other to achieve the course learning objectives. I will post new discussion prompts each week. Each group will have their own discussion board. The TA and I will monitor and periodically contribute to group discussions. We will not respond to every post. Here are some expectations and guidelines for discussion board posts:

- Content: A post to the discussion may include a response to the instructor's questions of the week, an attempt to answer a classmate's question or a question your classmate asked, an elaboration on an existing post, a reflection, an evaluative comment, or sharing a helpful external resource. Posts must relate to the assigned reading or video for that week, or the material covered in the lectures for that week. Please clearly state if your post is a reply or if it is an original post. This will prevent any confusion when grading. For example, a reply could be mistaken for an original post if it is not clearly labeled, and if you have already made one original post, the second would not be graded (see below for grading), resulting in a loss of marks.
- Timing and frequency: Post at least one new comment and at least one reply to a classmate's post each week. To facilitate active dialogue between students, your first post (original or reply) will be due at 11:59 pm PST each Wednesday and your second post will be due at 11:59 pm PST each Sunday.
- Length: Generally, between 20 and 200 words per post.
- Etiquette: Be supportive and respectful. Write in complete sentences with proper grammar. Avoid abbreviations and texting shorthand. Before posting, read existing posts to ensure that you are not merely repeating what has already been said. Off-topic, inappropriate, or potentially offensive posts will be removed.

There are 11 weeks of learning group discussion boards. Posts that enrich the discussion by providing a unique perspective, a helpful answer to or elaboration on a classmate's post, deepen classmates' understanding, or thoughtful reflection will earn a point, equivalent to 0.5% of your final grade. Posts that are very brief (<10 words), superficial, and/or do not substantively add to the discussion (e.g., "I agree") will not earn points. You can earn a maximum of 1% per week (for two quality posts), or 11% over the 11 weekly discussion boards (10% + 1% bonus).

**Participation in groupwork:** Most weeks, the live class (2:00-3:00 pm PST on Fridays) will include groupwork, done in Zoom breakout rooms with your learning group. At the end of each class, you will complete a brief peer evaluation of participation for each member of your learning group (instructions will be provided). **You must enter a rating for all of your group members within 24** 

hours of the live class in order to receive participation credit yourself. Your peers' ratings of your attendance and participation over the full term will be worth 10% of your final grade. *Exams:* Midterm exam 1 will be a multiple-choice assessment of learning objectives #1 and #2. Midterm exam 2 will be a multiple-choice assessment of learning objective #3. The Final Exam will be a cumulative multiple-choice assessment of all learning objectives, but will disproportionately focus on learning objectives #4 and #5. Applying knowledge of brain-behaviour relationships to analyze clinical cases (objective #6) will be assessed in all exams.

Written assignment: The purpose of the written assignment is to learn about a contemporary topic not covered in detail in the lectures or readings. It is intended to (1) offer you the chance to explore a topic of your choice in greater depth than the lecture and readings can offer, (2) expose you to primary literature (i.e., empirical studies) in the field of brain dysfunction, (3) assess your ability to think both critically and creatively, and (4) offer you another way show what you have learned in this course. The contemporary topics for Winter 2021 you may choose from are:

- 1. Black Lives Matter: Racial disparities in neurorehabilitation outcomes
- 2. COVID-19: Neuropathological and neuropsychiatric complications of COVID-19
- 3. Opiate crisis: What does chronic opioid use do to the brain?
- 4. CTE: Is chronic traumatic encephalopathy a real disease?

Alternatively, you may propose a different topic that it is of particular interest to you. If you wish to propose an alternative topic, email the TA to request confirmation that your topic is appropriate. You must request and receive permission prior to Midterm 2, or else will need to choose one of the contemporary topics above. If you choose one of the contemporary topics, you do not need to email the TA to indicate your choice.

The paper should review and synthesize available evidence ("what is known") in 2,000 words or less. Cite at least 5 empirical studies that were published in the last 10 years. Follow American Psychological Association (APA) style formatting. Written assignments must be **submitted to Canvas** before the deadline.

Written assignments will be graded on the criteria listed below.

- Spelling and grammar (5 points)
- Adherence to APA style (5 points)
- Readability (10 points). More points are assigned for papers that demonstrate clear explanations, logical flow, succinctness, and consistency.
- Evidence of research and scholarship (30 points). More points are assigned for papers that demonstrate appropriate selection studies for review, thoughtful synthesis and analysis of cited studies, and balanced conclusions that accurately characterize the best available evidence.
- Reflection (10 points). Thoughtful comments about methodological limitations, evidence gaps, and directions for future research ("what we need to know").

Late assignments will lose 10% per 24-hour period, including weekends.

Bonus 2% available: Attend a hospital-based teaching rounds presentation and submit (on Canvas) a description of 3 things you learned or had questions about. Eligible rounds include BC Neuropsychiatry Grant Rounds (<a href="https://www.bcnp.ca/">https://www.bcnp.ca/</a>) and Neuroscience Grand Rounds (<a href="https://neurology.med.ubc.ca/">https://www.bcnp.ca/</a>) and Neuroscience Grand Rounds (<a href="https://neurology.med.ubc.ca/">https://neurology.med.ubc.ca/</a>). These rounds typically take place weekly in a live virtual format, for now. Other clinical neuroscience educational offerings on the Centre for Brain Health's calendar (<a href="https://www.centreforbrainhealth.ca/events">https://www.centreforbrainhealth.ca/events</a>). Alternatively, you may earn your bonus points by registering for and participating in at 60 minutes of the 5<sup>th</sup> annual Neuroscience Undergraduate

Research Conference, hosted by the UBC Neuroscience Club on January 28, 20201 (see <a href="https://ubcneuroscienceclub.wixsite.com/uncweb">https://ubcneuroscienceclub.wixsite.com/uncweb</a>).

Departmental policy on grade scaling: In order to manage grade inflation and maintain equity across course sections, all psychology courses are required to comply with departmental norms for grade distributions. According to departmental norms, the mean grade in a 300-level class is 68%. I may be required to scaled up or down your final grade to achieve a class average of 63-73%.

**Grade ranges:** Grades are not official until they appear on your transcript. You will receive both a percent and a letter grade for this course. At UBC, your course percentage is converted to a letter grade according to the following key:

A+: 90-100%B: 72-75%C-: 55-59%A: 85-89%B-: 68-71%D: 50-54%A-: 80-84%C+: 64-67%F: 0-49%

B+: 76-79% C: 60-63%

Because you are earning a degree at a highly reputable post-secondary institution, the criteria for success are high. The Faculty of Arts considers a C to reflect adequate performance and recommends that A's be reserved for the few students who achieve a superior grasp of the subject matter, as demonstrated by exceptional performance on exams and assignments.

Detailed course agenda				
Week	Asynchronous activities	Synchronous events & deadlines		
Jan 11	Prerecorded lecture: Welcome to PSYC 301 (Course introduction)	Jan 15 @ 2:00- 3:00 pm PST: Live		
	Reading: This syllabus	class		
	Optional on-line module: TFF UBC Psychology Neuroanatomy Refresher	Jan 17 @ 11:59 pm PST: Discussion board for Week 1		
	Reading: Hart Jr (2020). Chapter 6: Basic neuroanatomy review. From book title: Oxford Textbook of Neuropsychiatry.	closes		
Jan 18	Prerecorded lecture: Disorders of visual and spatial perception	Jan 22 @ 2:00- 3:00 pm PST: Live		
	Reading: Hart Jr (2015). Chapter 7: Higher-order visual processing. From book title: The Neurobiology of Cognition and Behavior.	class		
	Reading: Sacks (1985). Chapter 1: The man who mistook his wife for hat. From book title: The man who mistook his wife for a hat.	Jan 24 @ 11:59 pm PST: Discussion board for Week 2 closes		
	Prerecorded lecture: Motor pathways and movement disorders	closes		
Jan 25	Prerecorded lecture: Aphasia and communication disorders	Jan 29 @ 2:00- 3:00 pm PST: Live		
	Video: Aphasia case study (Alfred).	class		
	Prerecorded lecture: Memory disorders	Jan 31 @ 11:59 pm PST: Discussion		

	Reading: Squire (2009). Legacy of Patient H.M. Neuron, 61(1): 6-9.	board for Week 3 closes
	Video: Clive Wearing, the "man with no memory" ( <a href="https://youtu.be/Vwigmktix2Y">https://youtu.be/Vwigmktix2Y</a> )	Closes
Feb 1	Prerecorded lecture: Frontal-subcortical circuits and syndromes	Feb 5 @ 2:00-3:00 pm PST: Live class
	Reading: Licther (2013). Chapter 5: Frontal-subcortical circuits. From book title: Behavioral Neurology & Neuropsychiatry.  Reading: Harlow (1869). Recovery from the passage of an iron bar through the head. History of Psychiatry, 4(14):274-281.	Feb 7 @11:59 pm PST: Discussion board for Week 4 closes
	Prerecorded lecture: Anosognosia	
	Prerecorded lecture: Disorders of affect	
Feb 8	Prerecorded lecture: Transient alterations in mental status (Delirium and seizures)	Feb 12 @ 2:00- 3:00: <b>Exam 1</b>
	Prerecorded lecture: Disorders of consciousness	(No live class this
	Reading: Owen (2014). Is anybody in there? Scientific American, 310(5):52-7.	week)
Feb 15	Break	
Feb 22	Prerecorded lecture: Stroke  Video: Jill Bolte Taylor TED Talk "My stroke of insight"  https://www.ted.com/talks/jill_bolte_taylor_my_stroke_of_insight	Feb 26 @ 2:00- 3:00 pm PST: Live class
	Reading: Blumenfeld (2010). Chapter 10: Cerebral Hemispheres and Vascular Supply. From book title: Neuroanatomy through Clinical Cases, Second Edition.	Feb 28 @11:59 pm PST: Discussion board for Week 7 closes
	Prerecorded lecture: Anoxia	
	Prerecorded lecture: Brain tumours	
Mar 1	Prerecorded lecture: Concussion and traumatic brain injury	Mar 5 @ 2:00-
	Video: Mild TBI case study (Mei)	3:00 pm PST: Live class
	Prerecorded lecture: Multiple sclerosis and other autoimmune conditions	Mar 7 @ 11:59 pm PST: Discussion board for Week 8
	Prerecorded lecture: Infectious and toxic causes of brain disease	closes

Mar 8	Prerecorded lecture: Normal brain aging and MCI  Prerecorded lecture: Alzheimer's disease and frontotemporal dementia  Reading: Largent et al (2021). The Future Is P-Tau-Anticipating Direct-to-Consumer Alzheimer Disease Blood Tests. JAMA Neurol. Epub ahead of print.	Mar 12 @ 2:00- 3:00 pm PST: Live class Mar 14 @11:59 pm PST: Discussion board for Week 9 closes
	Prerecorded lecture: Parkinson's disease, Lewy Body, and related conditions	
Mar 15	Prerecorded lecture: Functional neurological disorder  Video: My functional neurological disorder recovery story <a href="https://www.youtube.com/watch?v=9USepwToLqk&amp;list=PLvZN1a">https://www.youtube.com/watch?v=9USepwToLqk&amp;list=PLvZN1a</a> n-ri_3skekxlfqRHXaXVIt2SkW4&index=2	March 19 @ 2:00- 3:00: Exam 2
	Prerecorded lecture: Acute care and interdisciplinary neurorehabilitation	
	Video: Dylan Rizzo's story <a href="https://www.cbsnews.com/news/just-keep-going/">https://www.cbsnews.com/news/just-keep-going/</a>	
Mar 22	Prerecorded lecture: Neurological exam, mental status exams, bedside cognitive tests  Video: Neurological examination by Dr. Jeff Beckman, UBC	Mar 26 @ 2:00- 3:00 pm PST: Live class
	Neurology ( <a href="https://vimeo.com/148644856">https://vimeo.com/148644856</a> )  Prerecorded lecture: Neuropsychological testing	Mar 28 @11:59 pm PST: Discussion board for Week 11
	Prerecorded lecture: Clinical neuroimaging and other biomarkers	closes
Mar 29	Prerecorded lecture: Biological mechanisms of recovery from brain injury	Apr 3 @ 2:00-3:00 pm PST: Live class
	Reading: Cramer et al (2011). Harnessing neuroplasticity for clinical applications. Brain, 134; 1591–1609.	Apr 4 @ 11:59 pm PST: Discussion
	Prerecorded lecture: Medications and medical devices for cognitive and neurobehavioural disorders	board for Week 12 closes
Apr 5	Prerecorded lecture: Cognitive rehabilitation  Prerecorded lecture: Music, dance, and art in neurorehabilitation	April 9 @ 2:00- 3:00 pm PST: Live class

	Prerecorded lecture: Exercise, diets, and supplements for brain health Reading: Keightly et al (2011). Brain injury from a First Nations' perspective: Teachings from elders and traditional healers. Canadian Journal of Occupational Therapy, 78(4), 237-245.	April 11 @ 11:59 pm PST: Discussion board for Week 13 closes Written assignment due on April 11 @ 11:59 pm
Apr 12	Reading: Astell et al (2019). Technology and dementia: The future is now. Dement Geriatr Cogn Disord 2019;47:131-139.  Prerecorded lecture: Psychological consequences of brain injury and approaches to treatment.  Videos: Interviews with neurologist, neurosurgeon, neuropsychologist, physiatrist, speech-language pathologist, and occupational therapist.	April 16 @ 2:00- 3:00 pm PST: Live class April 18 @11:59 pm PST: Discussion board for Week 14 closes

## Missed Exams or Deadlines

If you need to miss an exam, deadline, or required assignment because of unanticipated events or circumstances, you may request an academic concession. To do so, follow these steps: (1) read UBC's policy: <a href="https://www.arts.ubc.ca/degree-planning/academic-performance/academic-concession/">https://www.arts.ubc.ca/degree-planning/academic-performance/academic-concession/</a>, (2) complete a Student Self-Declaration Form, and (3) send your request to <a href="mailto:noah.silverberg@ubc.ca">noah.silverberg@ubc.ca</a> or Arts Academic Advising as early as possible. Please <a href="mailto:use-your UBC">use-your UBC</a> email <a href="mailto:account-and-include">account-and-include</a> PSYC 301 in the <a href="mailto:subject-line">ubject line</a> when emailing me. If your request for academic concession for an exam is approved, the weight from the missed exam will be redistributed to the other exams. Make-up exams will not be available.

## Support from UBC

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. Details of the policies and how to access support are available here: <a href="https://senate.ubc.ca/policies-resources-support-student-success">https://senate.ubc.ca/policies-resources-support-student-success</a>

If you have approved accommodations from the UBC Centre for Accessibility for graded learning assessments, please inform me by January 25, 2021.

## Statement on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. For example, the Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript.

All graded work in this course is to be original work done independently by individuals. For example, working together in an exam is not allowed. If you have any questions as to whether or not what you are doing is even a borderline case of academic misconduct, please consult your instructor. For UBC policies and procedures, please see:

http://www.calendar.ubc.ca/vancouver/?tree=3,54,111,959. For tips on how to avoid unintentional plagiarism, see here: https://learningcommons.ubc.ca/resource-guides/understand-academic-integrity/

Do not share materials provided for you to use in this course, including exam questions. Please respect our intellectual property and the enormous efforts that went into making this class. All assignment instructions, exam questions and answers, discussion questions, announcements, PowerPoint slides, audio/video recordings, Canvas modules, and any other materials provided to you by myself or the TA are for use in this course by students currently enrolled in this course. It is unacceptable to share any of these materials beyond our course, including by posting on file-sharing websites (e.g., CourseHero).