

**University of Alberta**  
**Biological Aspects of Psychiatry - PSYCHIATRY 511 Section B1**  
**TR 8:00-9:20 AM**

**Remote delivery (Zoom) at least until Feb 28 (if in-person, ECHA L1-420)**  
**Winter Semester 2022**

**Course-coordinator:** Dr. Esther Fujiwara  
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**E-mail:** [efujiwara@ualberta.ca](mailto:efujiwara@ualberta.ca)  
**Office Hours:** Per appointment  
**Course-website:** eclass - use your CCID and password to access the course page

**Course Description:** Classification, description and measurement of major psychiatric disorders; biological theories of psychiatric disorders, and discussions of how the actions of the therapeutics used to treat these disorders relate to these theories; practical aspects of treatment of neuropsychiatric disorders.

**Technology requirements (minimum):** Computer with online access and camera/microphone, Zoom access (see <https://tinyurl.com/y9z2syoz>), PDF reader, media player (e.g. VLC). It is your responsibility as a student to ensure that you have the appropriate technology for (the online portion of) this course.

**Course Objectives:** TO GAIN KNOWLEDGE OF:  
 a) The biological aspects of major psychiatric disorders  
 b) The mechanisms of action and side effects of drugs and other therapeutics used to treat these disorders.

**Important Dates:** A total of **nine assignments** of “lecture questions” related to the lectures in the course are due throughout the course, deadlines are:  
**January 14, January 28, February 4, February 11, February 18, March 11, March 25, April 1, April 8** (all are due on 11:00 pm MT)  
**February 11<sup>th</sup>** Paper/presentation topic due 11:00 pm, MT  
**March 14<sup>th</sup>** Presentation slides due 11:00 pm, MT  
**March 15<sup>th</sup>** In-class presentations  
**March 17<sup>th</sup>** In-class presentations  
**April 8<sup>th</sup>** Term paper due 11:00 pm, MT  
**April 29<sup>th</sup>** Last date for any late submissions (paper, slides, questions)

**Grading:** Lecture questions: 30%  
 In-class presentations 30%  
 Term paper 40%

**Course materials:** Lecture slides will be posted on the course website, usually shortly before or after the lecture has been taught. Please direct questions about the content of these slides to the individual instructor of each lecture. General course-related questions (presentations, paper, etc.) are answered by me (Dr. Esther Fujiwara [efujiwara@ualberta.ca](mailto:efujiwara@ualberta.ca)).

**Attendance:** **Remote delivery Tue/Thur 8:00-9:20 am until at least Feb 28. As permitted, classes will take place in-person at ECHA L1-420 afterwards.**

## Lecture schedule & Topics

DATE	#	TOPIC	INSTRUCTOR	DEADLINES (time: 11:00 pm)
Jan. 5	1	Introduction	E. Fujiwara	January 14: Question 1
Jan. 11	2	History of psychiatric diagnosis	E. Fujiwara	
Jan. 13	3	Research Domain Criteria	E. Fujiwara	
Jan. 18	4	Neuropsychology	E. Fujiwara	January 28: Question 2
Jan. 20	5	Structural neuroimaging	N. Malykhin	
Jan. 25	6	Functional neuroimaging	N. Malykhin	
Jan. 27	7	Neurotransmitters &	S. Kar	February 4: Question 3
Feb. 01	8	neuromodulators 1 & 2	S. Kar	
Feb. 03	9	Schizophrenia	M. Mackay	February 11: Question 4 and term paper topic due
Feb. 08	10	Anxiety disorders	E. Fujiwara	
Feb. 10	11	Mood disorders	P. Silverstone	
Feb. 15	12	Addictions	K. Balachandra	February 18: Question 5
Feb. 17	13	Eating disorders	E. Fujiwara	
<b>READING WEEK Feb 21-25</b>				
Mar. 01	14	Neurobiology of stress	N. Malykhin	March 11: Question 6
Mar. 03	15	Animal models 1 & 2	I. Winship	
Mar. 08	16		I. Winship	
Mar. 10	17	Optical imaging	A. Chan	Mar. 14: Presentation slides due
Mar. 15	18	In-class 5-minute presentations	E. Fujiwara	
Mar. 17	19			
Mar. 22	20	Pharmacological interventions	N. Malykhin	March 25: Question 7
Mar. 24	21	Non-pharmacological interventions	E. Fujiwara	
Mar. 29	22	Inflammation in psychiatric disorders	M. Churchward	April 1: Question 8
Mar. 31	23	Novel interventions in mood disorders	Y. Zhang	
Apr. 05	24	Pharmacogenomics	K. Aitchison	April 8: Question 9
Apr. 07	25	Big data in psychiatry	B. Cao	
April 8: Term paper due				

**Psychiatry 511 – Instructors 2022**

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## 1. Lecture questions (30% of final grade)

Please submit **one (1) lecture question** regarding the materials in the taught lectures included in the assignment submission date (see lecture schedule). For example, question 2 is due January 28 and can address any topic from lectures taught between January 18 – January 25:

Neuropsychology, Structural Neuroimaging, Functional Neuroimaging.

- Lecture questions are meant to be scientific inquiries related to but not already covered in the lecture itself. Each question should also be attempted to be answered, with a total **length of 300 words max. (can be shorter)** for both question and answer.

*Example:* “There is evidence for immune system dysfunction in depression, as mentioned in today’s lecture “ABC” (slide 15 or minute 6:46). As we have also heard in the earlier lecture on “DEF”, certain antidepressant drugs have direct immune system effects (e.g., drugs like bupropion also have anti-inflammatory properties, slide 42 or minute 46:15). QUESTION: Do these drugs have the same or different effects on mood (or other symptoms) in people with immune system disorders like multiple sclerosis? – ANSWER: I assume they have similar mood-altering functions, but their side-effect profile may involve more involuntary movements in movement-related immune disorders like multiple sclerosis because of the increased dopaminergic transmission with bupropion” (grade range: 83%-88%).

- Questions are to be submitted online through eclass. Please do not email questions to me. Questions handed in late will be deducted 5% plus 1% for each additional day late.
- Your lecture questions may be graded by any of the instructors teaching in this course
- The question with the lowest grade will be dropped from the grading. Each of the 8 included questions will account for 3.75% towards the overall course grade, for a total of 30% of the course grade from all 8 lecture questions.
- The detailed grading guidelines for lecture questions are provided below:

Grade	% range	Criteria
A+	95% - 100%	A well-developed question that transcends several topics in this course and that is either exceptionally original, addresses current research and/or a current scientific debate in this area on a fundamental level or shows substantial background knowledge beyond this course. The provided answer shows a deeper understanding of the area.
A	89% - 94%	A well-reasoned question based on several topics covered in this course, pointing to specific details in the lecture slides to motivate the reasoning. The answer to the question provides substantial detail to justify the answer.
A-	83% - 88%	A question and answer based on the several topics covered in this course, pointing to details in the lecture slides to motivate them. The question and answer are technically sound but may not be fully developed, with some missing or erroneous details.

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<b>Grade</b>	<b>% range</b>	<b>Criteria</b>
B+	76% - 82%	A question and answer based on the chosen lecture topic, pointing to details in the lecture slides to motivate them. The question and answer are technically sound but may remain broad/general and have missing or erroneous details.
B	75%	A question and answer that are complete, coherent, and related to the lecture, with some limitations to originality, depth, and broader understanding.
B-	70%	A question that is complete and coherent, but either unrelated to the lecture and/or missing an answer.
C+	65%	Incomplete or incoherent questions
F	0%	Unsubmitted questions

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## 2. Term paper (40% of final grade)

The first lecture will provide a detailed overview on the term paper, including the grading rubric. Graded and commented examples of previous papers are posted on eclass. The topic of your term paper and your presentation (see below) **need to be the same**.

- Length: 10 pages (excluding Figures and reference list), double-spaced, font-size no smaller than 10 pt and margins no smaller than 1/2 inch. No hand-written papers will be accepted. I will not read any pages exceeding the 10 text-pages limit.
- Due date: **The term paper is due on April 8<sup>th</sup>**, at 11:00 p.m. Term papers are to be submitted online through eclass. Please do not email term papers to me.
- Term papers handed in late will be deducted 10% plus 2% for each additional day late.
- Process:
  - **Email me early in the term to discuss your topic.** You can request review of a one-page overview to outline your paper, but no pre-review of entire draft papers.
  - Once mutually agreed, write down the **title** of your term paper/presentation topic and submit the title by the **deadline February 11<sup>th</sup> 2021**, 11:00 pm through eclass. This is a mandatory, but non-graded assignment.
  - The below list of topics only provides examples, you may choose any other topic related to the course, **after I approve it**.
- Your final paper may be graded by any of the instructors teaching in this course.

Some tips (see also lecture on January 4):

- Be as concise as possible in the choice of topic. A topic like “Mood Disorders” is too broad.
- Have an introduction that clearly indicates the topic of the paper and make sure you follow your indicated topic.
- Use references that are current. Some of the references may be books or reviews, but make sure to refer to some up-to-date original articles. Do not just provide a summary of a chapter or a review, but demonstrate your ability to read and interpret the current literature.
- References in text and bibliography should use a non-numbered style (e.g., APA).
- Make sure the references in your text match with your bibliography.
- If you use published figures or tables, clearly indicate the source.
- End your paper with a bang/brief summary of your main conclusions.
- Independent study, honours, and graduate students: As you are already dealing with a research topic in the context of your thesis or research study, it is recommended that you write your term paper about a related topic, if it is relevant to the course.
- **DO NOT PLAGIARIZE.** Evidence of plagiarism will result in a grade of ‘F’ and will be pursued under the Code of Student Conduct (i.e., disciplinary consequences as appropriate).

### 3. **In-class presentations (30% of final grade)**

The in-class presentation is intended to be the oral format of your term paper topic. Thus, your in-class presentation **needs to have the same topic as your term paper**.

- Date: In-class presentations will take place on **March 15 and 17 in-class time (8:00 – 9:20 am, MT)**.
- Length: 5 minutes presentation time, 10 slides maximum (excluding reference list if you have one).
- Due date: Slides are **due March 14<sup>th</sup>**, at 11:00 pm in eclass.
- Slides handed in late will be deducted 10% plus 2% for each additional day late.
- **Asynchronous option:** If you cannot attend the class during regular class time, record an audio or video of yourself presenting your slides and submit both, your voice-over/video and your slides by **March 14<sup>th</sup>**, at 11:00 p.m. We will attempt to show your asynchronous submission in-class either on March 15 or 17, as time permits.
- Grading:
  - Presentation grades will be for the slides, the oral presentation, and any discussion/Q&A that may result after the presentation
  - Key points:
    - Organization of the topic
    - Flow of narrative/thought process
    - Clarity of oral expression
    - Style and organization of the slides

#### **Example Topics (term paper and presentation)**

The below examples are not “ready-to-go” topics, but past examples. Your topic **has to be discussed, approved and submitted first (by February 11<sup>th</sup>)**.

- Effects of electroconvulsive therapy on cognitive functions.
- Hormonal treatment of stress-related memory symptoms.
- Antidepressants as neuroprotective agents.
- Nitric oxide – a role in CNS regulation?
- Neuropsychiatric consequences of cortical lesions.
- Neuroimaging in psychotherapy – can therapy change brain functions?
- Dopamine receptor subtypes and the actions of antipsychotic drugs.
- Glutamate and schizophrenia.
- The role of allopregnanolone in anxiety and depression.
- Gender issues in the etiology of depression/anxiety disorders.
- Biochemical theories of Alzheimer dementia.

- Neurosurgical management for refractory obsessive-compulsive disorder
- Commonalities of resting state network changes across psychiatric conditions
- Prediction and classification of psychiatric disorders with machine learning.
- Psychiatric symptoms in neuroimmunological conditions.
- Hereditary and non-hereditary aspects of substance addictions.
- Epigenetic changes in schizophrenia.



#### 4. Course grades

As this is a team-taught course, grading may be shared among several instructors as necessary, including second readers for term papers.

##### Grading

Final course grades will be based on the letter grading system. Grading is not curved. The expected distribution of marks will be *approximately* as shown in the table below:

##### *Example*

Letter Grade	500 level course	Grade Point Value	Descriptor
A+	10%	4.0	~ 40% “excellent”
A	14%	4.0	
A-	20%	3.7	
B+	17%	3.3	~35% “good”
B	16%	3.0	
B-	10%	2.7	~20-25% “satisfactory”
C+	8%	2.3	
C	2%	2.0	~0-5%
C-	1%	1.7	
D+	0%	1.3	
D	1%	1.0	
F	1%	0.0	
<b>Mean</b>		<b>3.4</b>	
<b>Median</b>		<b>B+ or A-</b>	

The final course grade consists of the weighted percentages between lecture questions (30%), presentations (30%), and paper (40%). Percentages will be rounded. The conversion of the final percentage to letter grades is as follows:

Letter Grade	Percentage
A+	95% -100%
A	89% - 94%
A-	83% - 88%
B+	77% - 82%

B	71% - 76%
B-	65% - 70%
C+	61% - 64%
C	55% - 60%
C-	50% - 54%
D+	45% - 49%
D	40% - 44%
F	< 40%

### **Student Responsibilities:**

**Academic Integrity:** The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the [Code of Student Behaviour](#) and avoid any behaviour that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University. All students should consult [the Academic Integrity website](#). If you have any questions, ask your instructor. An instructor who is convinced that a student has handed in work that he or she could not possibly reproduce without outside assistance is obliged, out of consideration of fairness to other students, to report the case to the Associate Dean of the Faculty. See the [Academic Discipline Process](#).

**Recording of lectures, presentations, and use of camera/video:** To allow asynchronous access to course materials and ensure equality in course access, online-delivered lectures and in-class presentations will be recorded. Should in-class teaching resume, I will query the need for a hybrid model with live recordings to be posted as well. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s). As applicable, lecture/presentation recordings will be disseminated through eclass/Zoom cloud drive, accessible only to students enrolled in the class. All lecture/presentation recordings will be deleted by May 31 2022. Students are asked to ensure that no other people are in the student's camera/recording view and that there is nothing identifiable or sensitive in that view (personal belongings, records, medications, etc.) prior to the class recording starting. Students can turn off their computer's camera or microphone if they are uncomfortable with being recorded.

### **Attendance, Absences, and Missed Grade Components:**

Regular attendance is desirable for optimal learning and performance in any course. If under special circumstances students cannot regularly attend during class-time and instead will need access to recorded lectures asynchronously, **they are to notify me during the first week of classes.**

Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the Code of Student Behaviour.

***Policy for Late Assignments:***

Students who inform me in advance of an expected late completion of an assignment may be granted one extension throughout the course with no penalty. However, the second or further late assignment (excused or unexcused) will be subject to grade deductions as outlined above. Lecture questions handed in late will be penalized by 5% plus 1% for each additional day late; presentation slides and term papers handed in late will be deducted 10% plus 2% for each additional day late.

**Student Resources:**

Overview on student services <https://www.ualberta.ca/current-students>.

**Accessibility Resources: (1 – 80 SUB)**

For general information to register for services visit the [Accessibility Resources](#) webpage.

**The Centre for Writers: (1-42 Assiniboia Hall)**

The [Centre for Writers](#) offers free one-on-one writing support which can be requested for any writing project.

**Health and Wellness Support:** For more information visit the [Health and Wellness Support](#) webpage.

**Office of the Student Ombuds:**

The [Office of the Student Ombuds](#) offers confidential interviews, advice and support to students facing academic, discipline, interpersonal and financial difficulties.