

COURSE RATIONALE AND OBJECTIVES

Psychiatry *is* in the midst of a renaissance of sorts. New light from a broad range of disciplines is being focused on the neurobiological substrates of mental disorders such as *schizophrenia*, *depression* and of a number of other psychopathologies. More than ever, scientists with widely differing backgrounds are actively involved in what is now often called biological psychiatry; pharmacologists, molecular biologists, psychobiologists, chemists, biomedical engineers are applying their expertise and interacting with each other in a multidisciplinary effort to identify the factors that contribute to pathological behavior. New, more powerful and increasingly complex technologies are constantly being developed and applied to this field of research. Genetic engineering (e.g. receptor cloning), molecular biology (e.g. genetic linkage studies), microscopy, neurochemistry, electrophysiology, and *in vivo* neuro-imaging (e.g. fMRI) are just a few of the many methodological approaches used by researchers working in the field of biological psychiatry. The resulting explosion of information has been staggering. The number of scientific journals dealing with issues in mental health has increased dramatically over the past few years. Membership in the *Society for Neuroscience*, one of the larger and more recognized professional societies in the field, has increased from 7,097 in 1980 to over 36,000 members in 2020. A countless number of meetings dedicated to specialized issues in biological psychiatry are organized every year.

This rapid expansion will also require that students interested in pursuing a career in some aspect of mental health gain a perspective of the current theoretical trends in this field and of the various methodological approaches used in clinical and animal research. This is the primary objective of the proposed course. The lectures will be given by researchers active in this field and will be geared to providing a comprehensive overview of the recent advances in research into the neurobiological correlates of psychopathologies as defined in *DSM V* (**D**iagnostic and **S**tatistical Manual of **M**ental Disorders **V** edition, a handbook published by the *American Psychiatric Association* that lists different categories of mental disorders and the criteria for diagnosing them).

After completing this course, students will be expected to have an understanding of the brain mechanisms currently thought to be dysfunctional in various psychopathologies and of the data base from which different hypotheses have emerged as well as of the strengths and limitations of the different methodological approaches used to generate these data. The students will also be expected to understand how drugs currently used to treat the different mental disorders are thought to act and the rationale on which the development of new drugs with greater therapeutic efficacy is based.

METHODS OF STUDENT EVALUATION

Mid-term (in class) examination - short answers	25%
Term paper (critical evaluation of a paper)	25%
Final examination - short answers, long answers	50%
Total	100%

Midterm examination:

- Midterm includes all materials covered between the first and the Feb 3rd lecture

Term paper examination:

- Select a paper from *myCourses* (open on Feb 4th at 9:00AM)
- Term paper is due on Mar 25th, 11:59PM

Final examination:

- Final includes all materials covered in the course. ~30% and ~70% of the final will be related to pre- and post-midterm materials, respectively.
- **Please note that changes and updates to lecture notes may be added in class. Additional notes and readings may also be distributed in class.**
- **There is NO required textbook for this course.**

Course evaluation

Students are required to fill out an online evaluation (Mercury).

Academic integrity

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the [Code of Student Conduct and Disciplinary Procedures](#).

Intellectual property and personal data

We remind everyone of their responsibility in ensuring that video and associated material posted on *myCourses* are not reproduced or placed in the public domain. This means that each of you can use it for your educational (and research) purposes, but you cannot allow others to use it by putting it up on the Internet or by giving it or selling it to others who may also copy it and make it available.

Right to submit in English or French written work that is to be graded

In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded.

2022 TIMETABLE

TIME: Tue. 11:30 AM-1:00 PM, and Thu. 11:30 AM-1:00 PM.

LOCATION: McIntyre Medical building Room 1043

COURSE COORDINATORS: Dr. Tak Pan Wong email: tak.wong@mcgill.ca
Dr. Lalit Srivastava email: lalit.srivastava@mcgill.ca

Both located at Douglas Mental Health University Institute. Tel.: 761-6131, Fax: 762-3034

OFFICE HOURS: By appointment.

DATE	TOPIC	LECTURER
Thu. Jan 6	Introduction Neurochemical organization of the brain	L. Srivastava T. P. Wong
Tue. Jan 11	Neural Plasticity	T. P. Wong
Thu. Jan 13	Neuroimaging	M. Chakravarty
Tue. Jan 18	Genetics of mental disorders	J. Poirier
Thu. Jan 20	Epigenetics of mental disorders	C. Nagy
Tue. Jan 25	Schizophrenia	L. Srivastava
Thu. Jan 27	Schizophrenia	L. Srivastava
Tue. Feb 1	Schizophrenia	L. Srivastava

Select an article from myCourses for the TERM PAPER Assignment (OPEN on Feb 4, 9:00AM)

Thu. Feb 3	Bipolar disorder	S. Beaulieu
Tue. Feb 8	Circadian rhythms and psychiatric disorders	F. Storch
Thu. Feb 10	Midterm exam (in class)	
Tue. Feb 15	Parkinson's disease	A. Milnerwood
Thu. Feb 17	Post-traumatic stress disorder (PTSD)	A. Brunet
Tue. Feb 22	Metabolic disturbances in mental disorders	P. Silveira

DATE	TOPIC	LECTURER
Thu. Feb 24	Autism + Discussion of Midterm	L. Srivastava
Feb 28 – Mar 4		STUDY BREAK
Tue. Mar 8	Eating disorder	S. El Mestikawy
Thu. Mar 10	Anxiety & panic disorders	M. Leyton
Tue. Mar 15	Affective disorders and Suicide	C. Nagy
Thu. Mar 17	Affective disorders and Suicide	C. Nagy
Tue. Mar 22	Brain network mechanisms for behavior	M. Brandon
Thu. Mar 24	Cannabis and Mental disorders	G. Gobbi
	TERM PAPER DUE on Mar 25, 11:59PM	
Tue. Mar 29	Alzheimer's disease	H. Paudel
Thu. Mar 31	Alzheimer's disease	H. Paudel
Tue. Apr 5	Substance abuse	S. El Mestikawy
Thu. Apr 7	Substance abuse	S. El Mestikawy
Tue. Apr 12	Final Exam discussion	L. Srivastava/T. P. Wong
