IMPORTANT: This syllabus form should be submitted to OAA (gsbs_academic_affairs@uth.tmc.edu) a week before the start of each semester.

NOTE to STUDENTS: If you need any accommodations related to attending/enrolling in this course, please contact one of the Graduate School's 504 Coordinators, Cheryl Spitzenberger or Natalie Sirisaengtaksin. We ask that you notify GSBS in advance (preferably at least 3 days before the start of the semester) so we can make appropriate arrangements.

Term and Year: **Spring 2025** Course Number and Course Title: **GS14 1131: Neurobiology of Mental Health Disorders** Credit Hours: **1** Meeting Location: **UTHH McGovern Medical School** Building/Room#: **BSRB 3.8112**	Program Required Course: **No** Approval Code: **No** Audit Permitted: **Yes** Classes Begin: **January 16, 2025** Classes End: **March 6, 2025** Final Exam Due: **April 3, 2025**

Class Meeting Schedule

Day	Time
Thursday	**1-3 pm**

Course Director

Name and Degree: **Gabriel R. Fries, PhD**
Title: Assistant Professor
Department: Psychiatry and Behavioral Sciences
Institution: UTHH
Email Address: Gabriel.R.Fries@uth.tmc.edu
Contact Number: 713-486-2629

NOTE: Office hours are available by request. Please email me to arrange a time to meet.

Instructor/s

1. **Gabriel Fries, PhD**
   Institution: UTHealth Houston
   Gabriel.R.Fries@uth.tmc.edu
2. **Scott Lane, PhD**
   Institution: UTHealth Houston
   Scott.D.Lane@uth.tmc.edu
3. **Tatiana Barichello, PhD**
   Institution: UTHealth Houston
   Tatiana.Barichello@uth.tmc.edu
4. **Consuelo Walss-Bass, PhD**
   Institution: UTHealth Houston
   Consuelo.Walssbass@uth.tmc.edu
5. **Vijayasree Vayalanellore Giridharan**
   Institution: UTHealth
   Vijayasree.V.Giridharan@uth.tmc.edu

	6. **Giselli Scaini, PhD** Institution: UTHealth Houston Giselli.Scaini@uth.tm.edu 7. **Anilkumar Pillai, PhD** Institution: UTHealth Anilkumar.R.Pillai@uth.tmc.edu

Course Description:

This course will cover current understanding of the biological basis of mental health disorders, including schizophrenia, bipolar disorder, depression, and substance use disorders. The course will include discussions on challenges that are unique to mental health disorders, and how knowledge of biological underpinnings can be translated to clinical treatments. The presentations will be led by researchers with expertise in specific disorders, and will focus on recent publications on the topic, to facilitate an interactive discussion with students.

Textbook/Supplemental Reading Materials (if any)

- Recently published studies on biological mechanisms of mental health disorders.

Course Objective/s:

Upon successful completion of this course, students will understand the current knowledge of the biological basis of psychiatric disorders, including underlying molecular, cellular, and systems mechanisms. Students will appreciate how challenges unique to mental health disorders are being approached, what challenges remain, and future directions.

***Specific Learning Objectives*:**

1. Discuss the current understanding of the genetic, cellular, and brains systems mechanisms involved in psychiatric disorders
2. Describe the importance of advances in cellular, molecular, and imaging technology for understanding the biological basis of psychiatric disorders.
3. Recognize how current studies may lead to the development of novel therapeutic approaches.

Student responsibilities and expectations: Students enrolled in this course will be expected to perform the following activities each week:

1. Read the research article assigned by instructors prior to each class.
2. Write three questions based on the assigned article and choose one to ask during the discussion.
3. Participate in, and contribute to, course discussions during lectures.
4. Prepare a 3-page review-style manuscript based on a focused topic related to one of the disorders discussed in class. Lecturers will provide suggestions for focused topics during class.

Students are expected to complete all assigned reading material (reviews and research literature) prior to class. While students may work and discuss all course materials and assignments in groups, all writing assignments must be their own. Plagiarism and failure to properly cite scientific literature and other sources will not be tolerated and are grounds for dismissal from the course and further GSBS disciplinary action.

Grading System: Pass/Fail *(The minimum requirement to pass is 70% of the grading criteria below)*

Student Assessment and Grading Criteria : *(May include the following:)*

Percentage	Description
Homework (33 %)	Three questions on each assigned paper, related to study design, methodology, and/or future directions.
Final Exam (33 %)	Written 3-page review-style manuscript discussing a focused topic of a disorder covered in lectures.
Participation and/or Attendance (33 %)	Signature in the attendance form. Participation in discussions.

SCHEDULE – Spring 2025

Date	Duration (Hour(s) taught by lecturer)	Lecture Topic	Lecturer/s
January 16	**1.45 hrs.**	**Introduction; Biological bases of mental health**	**Dr. Gabriel Fries**
January 23	**1.45 hrs.**	**Neurobiology of Addiction**	**Dr. Scott Lane**
January 30	**1.45 hrs.**	**The Immune System and Mental Health Disorders**	**Dr. Tatiana Barichello**
February 6	**1.45 hrs.**	**Genetic and Environmental Factors in Mental Health**	**Dr. Consuelo Walss-Bass**
February 13	**1.45 hrs.**	**Biology of Bipolar Disorder**	**Dr. Gabriel Fries**

February 20	**1.45 hrs.**	**The Gut-Brain Connection and Its Impact on Mental Health**	**Dr. Vijayasree Giridharan**
February 27	**1.45 hrs.**	**Biology of Major Depressive Disorder**	**Dr. Giselli Scaini**
March 6	**1.45 hrs.**	**Biology of Schizophrenia**	**Dr. Anilkumar Pillai**

NOTE: Dr. Fries will discuss the expected general structure of the class with each lecturer to ensure consistency across lectures.