

# PYC - PSYCHIATRY

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## **PYC 6050 Biology of the Eye Cr. 3**

Introduction to biology of eye structure/function, and to causes and clinical treatments of eye-related disorders and diseases. Offered Yearly.

**Restriction(s):** Enrollment is limited to Undergraduate level students.

**Course Material Fees:** \$25

**Equivalent:** ANA 6050, BIO 6055

## **PYC 7010 Molecular Neuropsychopharmacology Cr. 3**

First part of a two-semester in-depth study of nerve cells, their organization into functional circuits and their mediation of normal and aberrant behaviors. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 7140 Fundamentals of Neuroimaging Cr. 3**

Overview of methods: PET, EEG/ERP/TMS, fundamentals of MR, structural MRI, functional MR, MR spectroscopy and DTI. Review of the application of these methods in studying disorders of the nervous system. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 7150 Fundamentals of Neuropsychiatric Disorders Cr. 3**

Overview of pathophysiology, clinical manifestations, and treatment of major neuropsychiatric disorders. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine.

## **PYC 7320 MR Imaging of Neurovascular Disease Cr. 3**

Recent advances in MRI technology applied to human brain vascular diseases. Methods include: 3D anatomical imaging, diffusion tensor imaging, functional brain imaging, perfusion imaging, and susceptibility weighted imaging. Offered Every Other Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Equivalent:** BME 7720

## **PYC 7500 Advanced Topics in Neuroscience Cr. 1-6**

Topics offered each semester in one-credit modules, relevant to ongoing research in the degree program. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 9 Credits**

## **PYC 7515 Advanced Topics: Imaging, Neurodevelopment and Psychiatric Disorders Cr. 3**

Advanced introduction to imaging neurodevelopment based on anatomical, biochemical and functional studies; focus on abnormal development of psychiatric disorders. Offered Every Other Winter.

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in a Doctor of Philosophy degree.

## **PYC 7595 The Gut Microbiome and Translational Neuroscience Cr. 3**

This combined lecture and discussion course will introduce graduate students with interests in translational neurosciences to the emerging field of the gut microbiome. Lectures will cover basics of the gut microbiome to include bacterial taxonomy, samples used to study the gut microbiome, DNA isolation, library construction and quality control and 16S rRNA sequencing on a MiSeq next generation sequencer. Additional lectures will include descriptions of sequence data download and analysis, bioinformatics, multivariate statistics, and graphical display of data. The latest published literature on the gut-brain axis will also be used for purposes of discussion and to give students an appreciation for how the gut microbial community can influence the brain and its function. Particular emphasis will be placed on how a dysbiosis in the gut microbiome can influence psychiatric diseases, substance abuse disorders and other physiological functions attributed entirely to the brain heretofore. Offered Every Other Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 7890 Research Seminar Cr. 1**

Presentations by clinical and basic research staff and by the program's graduate students. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 8 Credits**

## **PYC 7990 Directed Study Cr. 1-6**

Independent study under the guidance of an advisor, including complete review of a problem area immediately relevant to basic or clinical neuroscience. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 10 Credits**

## **PYC 7996 Research Problems Cr. 3**

Directed laboratory rotation for graduate students in the translational neuroscience program. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 9 Credits**

## **PYC 7998 Clinical Neuroscience Rotation Cr. 3,6**

Neuroscience trainees become familiar with clinical issues in their chosen area of study; transfer of basic science knowledge to clinical application. Offered Every Term.

**Prerequisites:** PYC 7150 with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 6 Credits**

## **PYC 9990 Pre-Doctoral Candidacy Research Cr. 1-8**

Research in preparation for doctoral dissertation. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 12 Credits**

## **PYC 9991 Doctoral Candidate Status I: Dissertation Research and Direction Cr. 7.5**

Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 9992 Doctoral Candidate Status II: Dissertation Research and Direction Cr. 7.5**

Offered Every Term.

**Prerequisite:** PYC 9991 with a minimum grade of S

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 9993 Doctoral Candidate Status III: Dissertation Research and Direction Cr. 7.5**

Offered Every Term.

**Prerequisite:** PYC 9992 with a minimum grade of S

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 9994 Doctoral Candidate Status IV: Dissertation Research and Direction Cr. 7.5**

Offered Every Term.

**Prerequisite:** PYC 9993 with a minimum grade of S

**Restriction(s):** Enrollment is limited to Graduate level students.

## **PYC 9995 Candidate Maintenance Status: Doctoral Dissertation Research and Direction Cr. 0**

Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Course Material Fees:** \$402.01

**Repeatable for 0 Credits**