Department of Neuroscience

Website:  http://neuroscience.wustl.edu

Courses

Visit online course listings to view offerings for M05 Neurosci (https://courses.wustl.edu/CourseInfo.aspx?sch=M&dept=M05).

M05 Neurosci 554 Neural Science
This is an intensive seven-week course that covers the structure, development, and function of the nervous system as seen from molecular, cellular, and systems-oriented perspectives. The emphasis is on the organization and function of the nervous system in health, but there is frequent reference to the clinical relevance of the material presented. The course includes regular lectures, conference sessions, and laboratories (including a team based learning session), plus a number of clinically oriented presentations and special topics sessions that address selected issues in greater depth. Computer-aided instructional programs, which are accessible from a variety of locations, provide auxiliary modes of self-paced learning and review. Exams emphasize the core body of important facts and principles presented in the lectures and laboratories. Limited space is available for non-medical students with the instructor's permission. Non-medical students should register under the cross-listed number L41 554. Spring only.
Credit 109 units.

M05 Neurosci 810 Advanced Dissection
Students will perform detailed dissections on a discrete region of the body of their choosing-i.e. head/neck, thorax, abdomen, pelvic cavity, or limbs. Students will compile a list of personal learning objectives with approval of the course director(s). A minimum of 30hrs of self-paced individual dissection is required and may include practice of surgical approaches, and/or study of cross-sectional anatomy and medical imaging.

L41 Biol 5622 Cognitive, Computational, and Systems Neuroscience Project Building
The goal of this course is to help students in the CCSN Pathway develop the critical thinking skills necessary to develop and implement high quality, interdisciplinary research projects. Throughout the course of the semester, each student will develop a research plan in their chosen area of interest. The plan will be developed in consultation with at least two faculty members (from at least two different subdisciplines within the pathway) as well as the other students and faculty participating in the course. The culmination of this course will be for each student to produce an NIH-style grant proposal on the research project of their choosing. For most students, this will serve either as their thesis proposal or a solid precursor to the thesis proposal. The course will be designed to help facilitate the development of such a research plan through didactic work, class presentations, class discussion, and constructive feedback on written work. The course will begin with a review of written examples of outstanding research proposals, primarily in the form of grant submissions similar to those that the students are expected to develop (i.e., NRSA style proposals, R03 proposals). Review of these proposals will serve as a stimulus to promote discussion about the critical elements of good research proposals and designs in different areas. Each student will be expected to give three presentations throughout the semester that will provide opportunities to receive constructive feedback on the development and implementation of research aims. The first presentation (towards the beginning of the semester) will involve presentation of the student's general topic of interest and preliminary formulation of research questions. Feedback will emphasize ways to focus and develop the research hypotheses into well-formulated questions and experiments. The second presentation will involve a more detailed presentation of specific research questions (along the lines of NIH-style Specific Aims) and an initial outline of research methods. The final presentation will involve a fuller presentation of research questions and proposed methods. Feedback, didactic work, and group discussion throughout the semester will include guidance on critical components of the development of a research plan, including how to perform literature searches, formulate testable hypotheses, write critical literature summaries, and design experiments and analyses. The course will meet once a week, with faculty members from different tracks within the Pathway present at each meeting. This will allow students to receive feedback from several perspectives. Prerequisite: Member of CCSN Pathway, permission of instructor.
Credit 3 units.