

University of Missouri • Interdisciplinary Neurosciences Program Curriculum

(1) Required core courses

- (a) BioSci 8440 and BioSci 8442 - Integrative Neuroscience I and II (3 credit hr each; cross listed as Neurosci 8440 and 8442). All new incoming students will take these two courses. Because different institutions may offer similar Neuroscience courses, students who have taken a comparable course may request a waiver of this requirement, contingent on approval by INP and their thesis committee.
- (b) BioSci 8050 - Professional Survival Skills (2 credit hr). All incoming students will take this course or an equivalent course in other departments.
- (c) Scientific ethics (1 course, approved by thesis committee): possibilities include, but are not necessarily limited to, Biochem 8060, BioSci 8060, Psych 8910 (or 7820), MPP 8415, VetMed 8641, Grad 9001.

(2) Selection of core courses - recommendation to include a broader spectrum of neural related courses. Core courses are broadly divided into two groups - cellular/molecular and system/behavior. Ph.D. students will select one from each group and M.S. student will select one from either group. Substituting other neuroscience courses is possible upon petition to the INP curriculum committee.

(c) Cellular/molecular courses:

- i. BE 7070 - Bioelectricity
- ii. BioSci 8450 - Developmental Neurobiology (3 credit hr)
- iii. MPP 9421 - Neural Pharmacology (3 credit hr)
- iv. MPP 9424 - Principles of Drug Action (4 credit hr)
- v. MPP 9426 - Transmembrane Signaling
- vi. MPP 9420 - Mammalian Membrane Physiology (3 credit)

(ci) System/behavior courses:

- i. BioSci 7560 - Sensory Physiology and Behavior (3 credit hr)
- ii. BioSci 7580 - Computational Neuroscience (4 credit hr)
- iii. BioSci 7986 - Neurology of Motor System (3 credit hr)
- iv. Psych 7240 - Cognitive Neurosciences (3 credit hr)
- v. Psych 8210 - Functional Neuroscience (3 credit hr)
- vi. Psych 9210 - Psychopharmacology for Psychologists
- vii. VBmS 9467/MPP 9437 - Neural Control of the Circulation

(3) Other required courses:

- (e) Statistics course - Students will select one statistics course on campus that best meets the needs of their program of study and that has been approved by their thesis committee. Possibilities include, but are not necessarily limited to, Stat 7020, Stat 7070, Stat 7410, Stat 7540, Psych 3010.

(f) Seminars

- i. Ph.D. students need to take at least 2 credit hours of a neuroscience seminar course (several are offered on campus) as well as 2 credits of a neuroscience journal club (e.g. Neurosci 8187).
- ii. Master students need to take at least 1 credit hour of a neuroscience journal club (e.g. Neurosci 8187).
- iii. All students are encouraged to attend neuroscience journal clubs and neuroscience seminars across campus.

(4) Rotation and thesis research credits:

New students who have not yet selected mentors are encouraged to carry out rotations (often 3 months each but can be tailored to a student's needs). Rotation research credits (Neurosci 8090) and Ph.D. thesis research credits (Neurosci 9090) will be offered under course listings in the Interdisciplinary Neuroscience Program.