BSc. Specialization in Neuroscience
(60 credits)

Name: _____ Student id#_____

CORE REQUIREMENTS (18 crs.)

❑ NEUR/PSYC 355 (Fund. Neuroscience) ❑ NEUR 356 (Research Methods in Neuroanatomy)
❑ PSYC 315 (Statistical Analysis I) ❑ PSYC 316 (Statistical Analysis II)
❑ PSYC 351 (Fundamentals of Learning) ❑ PSYC 364 (Fundamentals of Cognition)

NEUROSCIENCE ELECTIVES REQUIREMENT (9 crs.)

❑ NEUR 451 (Learning & Neuroplasticity)

❑ _____ ❑ _____ [Choose 2 from below list]

PSYC 354, PSYC 445, PSYC/NEUR 450, PSYC/NEUR 452, PSYC/NEUR 453, PSYC/NEUR 454, PSYC/NEUR 455, PSYC/NEUR 457.

INTERDISCIPLINARY FOUNDATIONS REQUIREMENT (21 crs.)

❑ BIOL 261 (Molecular & Gen. Genetics) ❑ BIOL 266 (Cell Biology) ❑ BIOL 364 (Cell Physiology)

❑ CHEM 221 (Intro Organic Chemistry I) ❑ CHEM 271 (Biochemistry I)

❑ _____ [BIOL 367 (Molecular Biology) ***or*** BIOL 368 (Genetics & Cell Biology Lab)]

❑ _____ [CHEM 212 (Analytical Chemistry for Biology & Environmental & Sustainability Science) ***or*** CHEM 217 (Intro Analytical Chemistry)]

NEUROSCIENCE INDIVIDUALIZATION REQUIREMENT (12 crs.)

12 credits selected from ANY of the Individualized Content Areas on the reverse page, and the Advance Experience courses including the NEUR 485 Specialization Thesis.

❑ _____ ❑ _____ ❑ _____ ❑ _____

PROFILE

BIOL 201, CHEM 205 & 206,
MATH 203, 204, 205; PHYS 204, 224, 205, 225, 206 & 226

Refer to the undergraduate calendar for the year that you were admitted to your concentration for a full list of requirements and courses, especially section 31.250.

NON-NEUR ELECTIVE REQUIREMENT (24 crs.)

General Education Electives* (6 crs.): _____ ❑ _____ ❑

*non-science courses in Social Sciences, Humanities, Fine Arts, Gina Cody Sch., JMSB.

Outside NEUR electives (18 crs.)**

_____ ❑ _____ ❑ _____ ❑
_____ ❑ _____ ❑ _____ ❑

** Courses chosen from any discipline ***except*** courses offered under Neuroscience concentrations (i.e., the core, neuroscience electives, interdisciplinary foundations, individualized content areas and advanced experience courses).

FREE CHOICE COURSES***

Additional courses from **any discipline** to complete the minimum credits required for your degree. This includes the MEP or ECP requirement. It can also include extra 300/400-level NEUR and PSYC courses.

***❑ 6 credits for the 90-credit program.
***❑ 24 credits for the 108 MEP.
***❑ 36 credits for the 120 ECP.

NEUROSCIENCE CORE COURSE STRUCTURE:

NEUR 355 Fund. of Neuroscience *(FORMERLY: PSYC 355, PSYC 358, BIOL 383)* *(PREREQ:* BIOL 201 or *BIOL 202)*	NEUR 356 Research Methods in Neuroanatomy *(PREREQ: NEUR 355)*	PSYC 315 Statistical Analysis I *(PREREQ / CO-REQ: NEUR 356 or PSYC 310)*	PSYC 316 Statistical Analysis II *(PREREQ: NEUR 356 or PSYC 310; PSYC 315)*	PSYC 351 Fund. of Learning *(FORMERLY: PSYC346)* *(PREREQ / CO-REQ: NEUR 356 or PSYC 310)*	PSYC 364 Fund. of Cognition *(FORMERLY: PSYC352)* *(PREREQ / CO-REQ: NEUR 356 or PSYC 310)*

Neuroscience Electives

PSYC 354:
Evolutionary Foundations of Psychology
(FORMERLY: PSYC398)
(PREREQ: NEUR 356 or PSYC 310)

PSYC 445
Human Neuropsychology
(FORMERLY: PSYC359)
(PREREQ: NEUR 356 or PSYC 310, PSYC 315, PSYC/NEUR 355)

NEUR/PSYC 450:
Neurobiology of Drug Abuse & Addiction
(FORMERLY: PSYC361, PSYC 450)
(PREREQ: NEUR 356 or PSYC 310, PSYC 315, PSYC 355/NEUR 355)

NEUR/PSYC 451
Learning & Neuroplasticity
(PREREQ: NEUR 356 or PSYC 310, PSYC 316, and PSYC 351)

NEUR/PSYC 452
Neurobiology of Sensation & Perception
(FORMERLY: PSYC365, PSYC 452)
(PREREQ: NEUR 356 or PSYC 310; PSYC 315; PSYC355/NEUR 355; and PSYC 363)

NEUR/PSYC 453
Neurobiology of Motivated Behaviour
(FORMERLY: PSYC 367, PSYC450)
(PREREQ: NEUR 356 or PSYC 310; PSYC 315; PSYC355/NEUR 355)

NEUR/PSYC 454:
Hormones & Behaviour
(FORMERLY : PSYC369, PSYC 454)
PREREQ: NEUR 356 or PSYC 310; PSYC 315; PSYC355 or NEUR 355)

NEUR/PSYC 455
Neuropharmacology
(FORMERLY: PSYC 455)
(PREREQ: NEUR 356 or PSYC 310; PSYC 315; PSYC 354; PSYC 355/NEUR 355*)*

NEUR/PSYC 457
Foundations of Animal Behaviour
(FORMERLY : PSYC396, 457)
(PREREQ: NEUR 356 or PSYC 310; PSYC 315, PSYC 354, PSYC 355NEUR 355)

NEUR/PSYC 458
Behavioural Neuroscience Advanced Issues
(FORMERLY: PSYC398, PSYC 458)
(PREREQ: Dept. permission)

NEUR 460 (labs)
Neuroimaging
(PREREQ: NEUR 356 or PSYC 310, PSYC 316, PSYC 364)

Interdisciplinary Foundations

BIOL 261
Molecular & General Genetics
(PREREQ: BIOL 201, CHEM 205 & 206)

BIOL 266
Cell Biology
(PREREQ: BIOL 201, CHEM 205, & 206)

BIOL 364
Cell Physiology
(PREREQ BIOL 266; CHEM 271)

Biol 367
Molecular Biology
(PREREQ: BIOL 261; CHEM 271)

Biol 368
Genetics & Cell Biology Lab
(PREREQ: BIOL 261, 266; CHEM 212)

CHEM 212
Analytical Chemistry for Biology & Environmental & Sustainability Science
(PREREQ: CHEM 205 & 206; PHYS 204, 224, 205, 225; MATH 205)

CHEM 217
Intro Introductory Analytical Chemistry I
(PREREQ: CHEM 205, 206; PHYS 204, PHYS 206, PHYS 224, PHYS 226; MATH 203, MATH 205)

CHEM 221
Intro Organic Chemistry
(PREREQ: CHEM 205 & 206)

CHEM 271
Biochemistry I
(PREREQ: CHEM 221)

Advance Experience Courses*

NEUR/PSYC 485 (6 credits)
Specialization Thesis
(PREREQ: NEUR 451 or NEUR 460)

NEUR/PSYC 483 Directed Readings
(FORMERLY: PSYC436; PREREQ: PSYC311, 316)

NEUR/PSYC 387 Directed Research
(PREREQ : PSYC311, 316)

NEUR/PSYC 487 Advanced Directed Research
(PREREQ: NEUR/PSYC485 or 495)

***Departmental permission required.**

Individualized Content Areas

Neuroscience content area:
NEUR 416 Large Data Analytics
NEUR/PSYC 458 Neuroscience Advance Issues
NEUR 460 Neuroimaging
NEUR 485 Specialization Thesis

Psychology content area:
PSYC 354 Evolutionary Foundations of Psychology
PSYC 363 Fundamentals of Sensation & Perception
NEUR/PSYC 445 Human Neuropsychology
NEUR/ PSYC 450 Neurobiology of drug Abuse & Addiction
NEUR/PSYC 452 Neurobiology of Sensation & Perception
NEUR/PSYC 453 Neurobiology of Motivated Behaviour
NEUR/PSYC 454 Hormones & Behaviour
NEUR/PSYC 455 Neuropharmacology
NEUR/PSYC 457 Foundations of Animal Behaviour
PSYC 460 Vision
PSYC 461 Computational Modeling of Human Cognition
PSYC 462 Memory and Attention
PSYC 463 Concepts and Categories
PSYC 464 Judgement and decision Making
PSYC 465 Language
PSYC 466 Cognitive Development
PSYC 467 Learning

Biology content area:
BIOL 367 Molecular Biology
BIOL 368 Genetics and Cell Biology Laboratory
BIOL 371 Microbiology
BIOL 462 Immunology
BIOL 466 Advanced Techniques in Molecular Biology
BIOL 467 Advanced Cell Biology
BIOL 474 Cellular Neuroscience

Chemistry content area:
CHEM 222 Introductory Organic Chemistry II
CHEM 375 Biochemistry II
CHEM 473 Protein-Protein Interactions
CHEM 476 Structure and Function of Biomembranes
CHEM 477 Advanced Laboratory in Biochemistry

HKAP content area:
EXCI 360 Neural & Hormonal Control of Human Systems
EXCI 455 Physical Activity, Health & Aging
EXCI 458 Pediatric Exercise Science
EXCI 471 Pain Management Strategies

PHYS content area:
PHYS 443 Quantitative Human Systems Physiology
PHYS 445 Principles of Medical Imaging

***All courses are 3 credits unless otherwise noted.*