

BACHELOR OF SCIENCE DEGREE

NEUROSCIENCE

COORDINATE MAJOR

FOR ADDITIONAL INFORMATION, PLEASE CONTACT [THE NEUROSCIENCE PROGRAM](#)

(1) UNIVERSITY REQUIREMENTS

Writing Requirement

Tier I: LB 133 4
 Tier II: Satisfied by completing the Lyman Briggs College History, Philosophy and Sociology of Science and Senior requirements listed below.

Integrative Studies in Arts & Humanities (IAH)

IAH 201-210* 4
 IAH 211-241* †# 4

Integrative Studies in Social, Behavioral & Economic Sciences (ISS)

ISS 200-level course* 4
 ISS 300-level course* ‡@ 4

*National, International, & Multicultural Diversity

Students must include at least one "N" course and one "I" course in their Integrative Studies programs. A "D" course may meet either an "N" or an "I" requirement, but not both.

†Summer 2013 to Summer 2017: LB 331, 333, and 336 will fulfill the IAH "B" university requirement (IAH 211 or higher). Please consult your LBC Academic Advisor for specific details for your program.

‡Summer 2013 to Summer 2017; LB 332, 334, and 335 will fulfill the ISS 300-level university requirement. Please consult your LBC Academic Advisor for specific details for your program.

Beginning Fall 2017; LB 321a, 322a, 323a, 324a, 325a, 326a and 327a will fulfill the IAH university requirement (IAH 211 or higher).

@ Beginning Fall 2017; LB 321b, 322b, 323b, 324b, 325b, 326b and 327b will fulfill the ISS 300-level university requirement.

Please contact your LBC Academic Advisor for specific details for your program. If you fulfilled the LB 331, 332, 333, 334, 335 or 336 requirement you do not need the new Fall 2017 courses.

Mathematics, Biological and Physical Sciences

Satisfied by the Lyman Briggs College requirements in Mathematics, Biological and Physical Sciences (see next section).

(2) LYMAN BRIGGS COLLEGE REQUIREMENTS

Biological Sciences (9 cr.)

Complete ONE of the following groups of courses
 (1) LB 144 & 145 9
 (2) BS 161, 162, 171, & 172 10

Chemistry (8-9 cr.)^

Complete ONE of the following groups of courses
 (1) LB 171 & 171L 8
 (2) CEM 141 & 161 7

Physics (8 cr.)

Complete ONE of the following groups of courses
 (1) LB 273, 274 8
 (2) PHY 231, 232, 251, & 252 8

Mathematics (6-7 cr.)

Complete ONE of the following groups of courses
 (1) LB 118 & STT 231 7
 (2) MTH 132 & STT 231 6

History, Philosophy & Sociology of Science (11-12 cr.)

LB 133 4
 LB 321-327, 330-336, 355, 490E; ENG 473A; HST 425; SOC 368 7-8

Senior Seminar (4 cr.)

LB 492 4

Biology, Chemistry, and Physics college courses (above) also meet graduation requirements for major.

^LBC Chemistry requirement met with completion of CEM 251

Minimum number of credits required: 120

Minimum cumulative and major grade point average: 2.0

(3) MAJOR REQUIREMENTS

Complete ALL of the following courses (16 cr.)

PSY 101	Introductory Psychology	4
BMB 401	Comprehensive Biochemistry	4
NEU 301	Introduction to Neuroscience I	3
NEU 302	Introduction to Neuroscience II	3
NEU 311L	Neuroscience Laboratory (W)	2

Complete ONE of the following options (6 cr.)

CEM 251	Organic Chemistry I	3
CEM 252	Organic Chemistry II	3
	or	
CEM 351	Organic Chemistry I	3
CEM 352	Organic Chemistry II	3

Complete ONE of the following options (4-6 cr.)

PSL 310	Physiology for Pre-Health Professionals	4
	or	
PSL 431	Human Physiology I	4
PSL 432	Human Physiology II	4

Complete ONE course from each of the following groups (6 cr.)

1. PHM 350	Introductory Human Pharmacology	3
PHM 431	Pharmacology of Drug Addiction	3
PHM 480	Special Problems	3
2. IBIO 341	Human Genetics	4
MMG 409	Eukaryotic Cell Biology	3

Complete 15 credits from ONE of the following three concentrations

(A) Cellular and Developmental Neuroscience

Complete 15 credits from the following courses

MMG 404	Human Genetics	3
MMG 409	Eukaryotic Cell Biology	3
NEU 420	Neurobiology of Disease	3
NEU 490*	Special Problems in Neuroscience	1-3
NEU 492*	Special Topics in Neuroscience	1-3
IBIO 341	Fundamental Genetics	4
IBIO 343	Genetics Laboratory	3
IBIO 425	Cells and Development (W)	4
NEU 416	Development Nervous System	3
PLB 400	Introduction to Bioinformatics	3
NEU 425	Computational Modeling in NEU	3
NEU 430	Genomics of Brain & Behavior	3
NEU 435	Ion Channels of Excitable Membranes	3
NEU 440	Synaptic Transmission	3
PHM 422	Fundamental of Neuropharmacology	2-3
PHM 431	Pharmacology of Drug Addiction	3
PHM 480*	Special Problems (need advisor approval)	3

IBIO 341, PHM 431, PHM 480 and MMG 409 cannot be double-counted with major requirements listed above. No more than 3 credits each of NEU 490 and NEU 492 may count toward this requirement.

(B) Behavioral and Systems Neuroscience

Complete 15 credits from the following courses

NEU 420	Neurobiology of Disease	3
NEU 490*	Special Problems in Neuroscience	1-3
NEU 492*	Special Topics in Neuroscience	1-3
PHM 431*	Pharmacology of Drug Addiction	3
PHM 480*	Special Problems	1-3
PSY 209	Brain and Behavior	3
IBIO 405	Neural Basis of Animal Behavior	3
NEU 310	Psychobiology of Human Behavior	3
NEU 416	Development of the Nervous System	3
NEU 425	Computational Modeling in NEU	3
NEU 430	Genomics of Brain & Behavior	3
PHM 422	Fundamental of Neuropharmacology	2-3
PSY 333	Psychology of Food Intake	3
PSY 402	Sensation and Perception (W)	3
PSY 409	Psychobiology of Behavioral Development (W)	3
PSY 410	Neurobiology of Learning and Memory (W)	3
PSY 411	Hormones and Behavior (W)	3
PSY 413	Laboratory in Behavioral Neuroscience (W)	4
PSY 493	Issues in Psychology (W)	3
IBIO 313	Animal Behavior	3
IBIO 403	Integrative Neurobiology	3

PHM 431 cannot be double-counted with major requirements listed in 3B. No more than 3 credits each of NEU 490 and NEU 492 may count toward this requirement.

(C) Cognitive and Occupational Neuroscience

Complete 15 credits from the following courses

NEU 425	Computational Modeling in NEU	3
NEU 430	Genomics of Brain and Behavior	3
LIN 455	Neurolinguistics	3
LIN 463	Introduction to Cognitive Science	3
NEU 490*	Special Problems in Neuroscience	1-3
NEU 492*	Special Topics in Neuroscience	1-3
PHL 200	Introduction to Philosophy	3
PHL 462	Philosophy of Mind	3
PSL 429	Biomedical Imaging Methods	3
PSY 200	Cognitive Psychology	3
PSY 209	Brain and Behavior	3
PSY 301	Cognitive Neuroscience	3
PSY 401	Memory and Skill (W)	3
PSY 402	Sensation and Perception (W)	3
PSY 410	Neurobiology of Learning and Memory (W)	3
PSY 493*	Issues in Psychology (W)	3

*NEU Academic Advisor pre-approval required. No more than 3 credits each of NEU 490 and NEU 492 may count toward this requirement.

IMPORTANT: This advising guide is presented for planning purposes only. It is the student's responsibility for knowing and following University, college and departmental requirements as stated in the [Academic Programs Catalog](#).

The Academic Advisors will provide information and suggest others based on expressed interests. It is the student's responsibility for enrolling in classes and selecting the number of credits per semester for success. Appointments are made using the [Student Success Dashboard](#).

BACHELOR OF SCIENCE DEGREE

NEUROSCIENCE

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Planning Guide

Major Requirements to be completed within Year 1 and 2:

Calculus and Statistics (LB 118 & STT 231)
Chemistry (LB 171/171L & LB 172/LB 172L)
Psychology (PSY 101)
Biology (LB 144 & 145)
Organic Chemistry (CEM 251 & 252)
Physics (LB 273 & 274)

Major Requirements to be completed within Year 3 and 4:

Neuroscience (NEU 301, NEU 302, & NEU 311L)
Physiology (PSL 310 OR PSL 431 & 432)
Biochemistry (BMB 401 OR BMB 461 & 462)
Pharmacology (PHM 350 OR PHM 431 OR PHM 480*)
Genetics/Cell Biology (IBIO 341 OR MMG 409)
Concentration Courses (15 credits from one of the three concentrations)

University/College Requirements to be completed prior to graduation:

Tier I Writing (LB 133)
Integrative Studies in Social Science (ISS 200-level & ISS 300-level OR LB 32XB)
Integrative Studies in Arts & Humanities (IAH 201-210 & IAH 211+ OR LB 32XA)
History, Philosophy, Sociology of Science (2 upper-level HPS courses**)
Senior Seminar/Capstone (LB 492)

*Prior approval from NEU advisor needed

**Can double as ISS 3XX and IAH 211+

IMPORTANT: This sample plan is to generate ideas for scheduling your courses and is based on a 15-credit-per-semester model for 4-year graduation. Each student's plan will be different and based on individual needs, careers goals, math placement, and other factors. The minimum number of credits for graduation is 120.

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SAMPLE 4-Year Plan

****Math placement score, AP credits, transfer credits and summer semesters will change this sample plan****

Year One	LB 118	STT 231/LB 119
	LB 171	LB 172
	LB 171L	LB 172 L
	ISS 2xx	LB 133
	Elective	IAH 201-210

Year Two	BS 182 H	LB 145
	BS 192 H	CEM 252
	LB 144	CEM 255
	PSY 101	NEU Concentration
	CEM 251	BS 191 H

Year Three	PSL 310	BMB 401
	ANTR 350 (elective)	MMG 301 (elective)
	PHM 431	LB 3xx
	SOC xxx	PSY 209
		LB 3xx

Year Four	NEU 301	NEU 302
	NEU 311L	IBIO 341
	LB 492	NEU Concentration
	NEU Concentration	NEU Concentration

IMPORTANT: This sample plan is to generate ideas for scheduling your courses and is based on a 15 credit per semester model for a 4-year graduation with a calculus math placement score. Other math placement scores will adjust the plan, but can be done. Please work with an Academic Advisor. Each student's plan will be different and based on individual needs, career goals, math placement and other factors. The minimum number of credits for graduation is 120.