(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
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
- 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
2. IBIO 341 Animal Behavior 3
3. 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

(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

2. PHM 431 Pharmacology of Drug Addiction 3
3. IBIO 313 Animal Behavior 3
4. 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.

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.
BACHELOR OF SCIENCE DEGREE
NEUROSCIENCE
COORDINATE MAJOR
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.
**Bachelor of Science Degree**  
Neuroscience  
COORDINATE MAJOR  
SAMPLE 4-Year Plan

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

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB 118</td>
<td>LS 210</td>
<td>PSL 310</td>
<td>NEU 301</td>
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<tr>
<td>LB 171</td>
<td>LB 172</td>
<td>ANTR 350 (elective)</td>
<td>NEU 311L</td>
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<tr>
<td>LB 171L</td>
<td>LB 172 L</td>
<td>PHM 431</td>
<td>LB 492</td>
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<td>ISS 2xx</td>
<td>LB 133</td>
<td>SOC xxx</td>
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<td>NEU Concentration</td>
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</tbody>
</table>

**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.