NEUROSCIENCE (BS)

Neuroscience is an integrative major that draws on existing courses from the natural, computational, and social sciences, as well as specific courses unique to the field of Neuroscience. Neuroscience has quickly become one of the fastest growing areas of study in both the natural and behavioral sciences. Its multidisciplinary nature attracts individuals not just from biology and psychology disciplines, but also from fields such as philosophy, anthropology, economics, mathematics and computer science.

Neuroscience majors are interested in studying the brain and nervous system in multiple different ways. Neuroscience majors consider fundamental concepts that underlie the function of the nervous system on a cellular and molecular level, how the nervous system produces behavior and cognition, and the role of computer science and mathematics in new technologies and therapies in neuroscience. Neuroscience majors have the option of concentrations in cellular/molecular, behavioral/cognitive or computational neuroscience to deepen their understanding and prepare for careers in these subfields. Additionally, Neuroscience majors can apply their knowledge of the nervous system to human health and disease and pursue professional programs in health, mental health, medicine, law, business, and computer science.

Learning Outcomes

Students will be able to:

- Describe how the cellular and systems level structure of the nervous system is responsible for neurological function, behavior, and cognition.
- Critically evaluate scientific literature in order to communicate core concepts in a clear and organized manner both verbally and in writing.
- Design and analyze scientific experiments.
- Explain challenges surrounding ethical thinking posed by advancements in neuroscience.
- Relate neuroscience content to other scientific and non-scientific disciplines.

College Core Requirements

Modern Language Requirements

Students who intend to graduate with the Bachelor of Arts (BA) degree will be required to demonstrate competence in a modern language equivalent to the proficiency attained from one year of college-level language study. Such competence may be demonstrated in one of several ways:

- completing the last course in the fourth-year high school sequence of any language
- completing a college course beyond the first-year level in any language
- achieving a satisfactory score on any of the Modern Language placement examinations administered at DePaul
- achieving a satisfactory rating in a proficiency examination accepted by DePaul
- achieving a score of 3 or higher on the Advance Placement (AP) test for any language
- achieving a score of 5 or higher in the Language B assessment from a Standard or Higher Level International Baccalaureate (IB) program
- achieving a satisfactory score on the CLEP examination

For further information regarding satisfactory scores and possible credit from the DePaul placement, AP, CLEP, or IB examinations, please contact Student Records.

Students who complete an Inter-College Transfer (ICT) to the College of Science and Health will abide by the College of Science and Health Modern Language Requirement in place on the effective date of the ICT.

BA students who meet College requirements and wish to pursue further work in the language may elect the "Modern Language Option" of the Liberal Studies Program. While Bachelor of Science (BS) students are not required to demonstrate competency in a modern language, the "Modern Language Option" is available to them for language study at any level.

Major Declaration Requirements

All students in the College are required to declare a major field prior to beginning their junior year. After researching College programs, the student should declare a major field by visiting Campus Connection and using the Declarations and Inter-College Transfer tool. The student will then be assigned a faculty advisor or staff advisor in the department or program and should make an appointment to see that advisor at his or her earliest convenience.

To change major fields, or to declare a minor or concentration, the student must use the Declarations and Inter-College Transfer tool described above. However, for the purpose of exploring the possibility of changing a major field, the student should consult an academic advisor in the College or an academic advisor in the Office for Academic Advising Support.

Liberal Studies Requirements

Honors program requirements can be found in the individual Colleges & Schools section of the University Catalog. Select the appropriate college or school, followed by Undergraduate Academics and scroll down.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSP 110</td>
<td>DISCOVER CHICAGO</td>
<td>4</td>
</tr>
<tr>
<td>or LSP 111</td>
<td>or EXPLORE CHICAGO</td>
<td></td>
</tr>
<tr>
<td>Focal Point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSP 112</td>
<td>FOCAL POINT SEMINAR</td>
<td>4</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRD 103</td>
<td>COMPOSITION AND RHETORIC I ¹</td>
<td>4</td>
</tr>
<tr>
<td>WRD 104</td>
<td>COMPOSITION AND RHETORIC II ¹</td>
<td>4</td>
</tr>
</tbody>
</table>
Quantitative Reasoning & Technological Literacy
Not Required

Sophomore Year
Multiculturalism in the US
LSP 200 SEMINAR ON MULTICULTURALISM IN THE UNITED STATES 4

Junior Year
Experiential Learning
Required 4

Senior Year
Capstone
NEU 390 NEUROSCIENCE CAPSTONE 1 4

1 Students must earn a C- or better.

Learning Domains
Arts and Literature (AL) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/arts-and-literature/)
• 3 Courses Required

Historical Inquiry (HI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/historical-inquiry/)
• 2 Courses Required

Philosophical Inquiry (PI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/philosophical-inquiry/)
• 2 Courses Required
(See Note Below)

Religious Dimensions (RD) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/religious-dimensions/)
• 2 Courses Required
(See Note Below)

Scientific Inquiry (SI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/scientific-inquiry/)
• Not Required

Social, Cultural, and Behavioral Inquiry (SCBI) (https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-learning-domains/social-cultural-and-behavioral-inquiry/)
• 1 Course Required

Notes
Students must complete one approved ethics course from the following:

Course Title Quarter Hours
CSC 208 ETHICS IN TECHNOLOGY 4
HLTH 229 ETHICS FOR HEALTH SCIENCES 4
PHL 200 ETHICAL THEORIES 4
PHL 230 CONTEMPORARY TOPICS IN ETHICS 4
PHL 228 NEUROETHICS 4
PHL 229 BIO MEDICAL ETHICS 4
REL 229 MEDICINE, ETHICS AND SOCIETY 4

Specified required courses within Liberal Studies may have grade minimums (e.g. C- or better). Please consult your advisor or your college and major requirements.

Courses offered in the student’s primary major cannot be taken to fulfill LSP Domain requirements. If students double major, LSP Domain courses may double count for both LSP credit and the second major. Students who choose to take an experiential learning course offered by the major may count it either as a general elective or the Experiential Learning requirement.

In meeting learning domain requirements, no more than one course that is outside the student’s major and is cross-listed with a course within the student’s major, can be applied to count for LSP domain credit. This policy does not apply to those who are pursuing a double major or earning BFA or BM degrees.

Major Requirements

Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Quarter Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 191</td>
<td>GENERAL BIOLOGY I FOR SCIENCE MAJORS</td>
<td>4</td>
</tr>
<tr>
<td>BIO 192</td>
<td>GENERAL BIOLOGY II FOR SCIENCE MAJORS</td>
<td>4</td>
</tr>
<tr>
<td>BIO 193</td>
<td>GENERAL BIOLOGY III FOR SCIENCE MAJORS</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one of the following: 4-6

| CHE 130 & CHE 131 | GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY |
| CHE 120 & CHE 131 | GENERAL CHEMISTRY IP and GENERAL CHEMISTRY I LABORATORY |

Select one of the following: 4-6

| CHE 134 & CHE 135 | GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY |
| CHE 122 & CHE 133 | GENERAL CHEMISTRY IIP and GENERAL CHEMISTRY IIP LABORATORY |

Select one of the following: 4

| CHE 228 & CHE 229 | SURVEY OF ORGANIC CHEMISTRY and SURVEY OF ORGANIC CHEMISTRY LABORATORY |
| CHE 230 & CHE 231 | ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY I LABORATORY |

Select one of the following: 4

| PSY 105 | INTRODUCTORY PSYCHOLOGY I |
| PSY 106 | INTRODUCTORY PSYCHOLOGY II |

Select one of the following: 4

| BIO 206 | BIOSTATISTICS |
| PSY 240 | STATISTICS I |
| IT 223 | DATA ANALYSIS |
| MAT 242 | ELEMENTS OF STATISTICS |
| NEU 201 | INTRODUCTION TO NEUROSCIENCE |
| NEU 301 | RESEARCH METHODS IN NEUROSCIENCE |
| NEU 390 | NEUROSCIENCE CAPSTONE |
Concentrations, tracks and specializations provide focus to the major. In addition to any college core requirements, liberal studies requirements and major requirements, students are required to choose one of the following:

- Behavioral/Cognitive Neuroscience Concentration, Neuroscience (BS) (https://catalog.depaul.edu/programs/neuroscience-bs/behavioralcognitive-neuroscience-concentration-neuroscience-bs/)
- Cellular/Molecular Neuroscience Concentration, Neuroscience (BS) (https://catalog.depaul.edu/programs/neuroscience-bs/cellularmolecular-neuroscience-concentration-neuroscience-bs/)
- Computational Neuroscience Concentration, Neuroscience (BS) (https://catalog.depaul.edu/programs/neuroscience-bs/computational-neuroscience-concentration-neuroscience-bs/)
- Integrative Neuroscience Concentration, Neuroscience (BS) (https://catalog.depaul.edu/programs/neuroscience-bs/general-neuroscience-concentration-neuroscience-bs/)

Students are limited to declaring one concentration.