



## Department of Psychology

### B.S. in Behavioral Neuroscience

#### **Program Description**

The Bachelor of Science in Behavioral Neuroscience is geared toward educating students on the complexities of the human brain and how it enables behavior and cognition. The program reflects current trends in the field of Behavioral Neuroscience through its emphasis on the scientific study of psychological processes and through the inclusion of recent trends and practice. Students have a variety of opportunities to become directly involved in ongoing research and participate in our active student organizations.

Many students pursue the B.S. in Behavioral Neuroscience in preparation for graduate or professional training in psychology, medicine, or research. The department also offers a Ph.D. program in Cognitive Neuroscience.

#### **Prerequisites: 31-33 credits**

Course	Title	Cr
PSY 2012	Introduction to Psychology	3
BSC 2010+BSC 2010L	General Biology I	3,1
BSC 2011+BSC 2011L	General Biology II	3,1
CHM 1045+CHM 1045L	General Chemistry I	3,1
CHM 1046+CHM 1046L	General Chemistry II	3,1

#### **Select 1 Calculus option from below:**

Course	Title	Cr
MAC 2311	Calculus I	4
MAC 2233	Calculus for Business	3

#### **Select either Organic Chemistry I & II or Physics I & II from below:**

Course	Title	Cr
CHM 2210+CHM 2210L	Organic Chemistry I	4,1
CHM 2211+CHM 2211L	Organic Chemistry II	3,1

**OR**

Course	Title	Cr
PHY 2053 <b>OR</b> PHY 2048 + PHY 2048L	Physics without Calculus I <b>OR</b> Physics with Calculus I	4,1
PHY 2054 <b>OR</b> PHY 2049 + PHY 2049L	Physics without Calculus II <b>OR</b> Physics with Calculus II	4,1

#### **Other Degree Requirements**

Course	Title	Cr
STA 2122 (or equivalent)	Introduction to Statistics	3

**Major Requirements: 34 credits****Core Courses: 25 credits**

Course	Title (Semesters Course is Offered)	Pre-Requirements	Cr
PSB 3007	Behavioral Neuroscience I (Fall/Sp/Sum)	BSC 2010+Lab, BSC 2011+Lab, CHM1045+Lab & CHM 1046+Lab	3
PSB 3823	Behavioral Neuroscience II (Fall/Sp/Sum)	PSB 3007	3
PSB 3101	Behavioral Neuroscience Methods (Fall/Sp)	PSB 3007	3
PSB 4200	Systems Neuroscience (Fall/Sp/Sum)	PSB 3007	3
PSB 4241	Clinical Neuroscience (Sp)	PSB 3007	3

**Research Sequence: 10 credit hours which must be taken in the following order: (1, 2 and 3).**

Course	Title	Pre-Requirements	Cr
PSY 3211	Research Methods and Data Analysis in Psychology I	STA 2122 (or equivalent)	3
PSY 3215	Research Methods and Data Analysis in Psychology II	PSY 3211	4
PSY 4931	Senior Seminar	PSY 3215	3

**Major Electives: 9 credits**

- Select 1 course from Cellular & Molecular
- Select 1 course from Behavioral & Systems
- Select 1 course from any of the sections below

**Cellular & Molecular Neuroscience**

Course	Title	Pre-Requirements	Cr
PSB 3504	Developmental Neuroscience	PSB 3007	3
PSB 4434	Psychopharmacology	PSB 3007	3
PSB 4581	Behavioral Epigenetics	PSB 3007	3
ZOO 4743C	Neuroscience	BSC 2010, BSC 2011 & CHM 2211	4
ZOO 4744	Neurobiology	BSC 2010 & BSC 2011	3
ZOO 4781	Sensory Systems in Neurobiology	BSC 2010 & BSC 2011	3

**Behavioral & Systems Neuroscience**

Course	Title	Pre-Requirements	Cr
EXP 3304	Motivation & Emotion		3
EXP 4204	Sensation & Perception	PSB 3007 OR PSB 3002	3
LIN 4705	Psychology of Language and Cognition	PSY 2012	3
PSB 3461	Hormones & Behavior	PSB 3007	3
PSB 4240	Neuropsychology	PSB 3007 OR PSB 3002	3
PSB 4250	Animal Cognition		3
PSB 4800	Neurobiology of Learning & Memory	PSB 3007 OR PSB 3002	3
ZOO 4513	Animal Behavior	BSC 2010 & BSC 2011	3
ZOO 4513L	Animal Behavior Lab	Co-requisite ZOO 4513	2

**Other Neuroscience & Behavior Electives**

Course	Title	Pre-Requirements	Cr
PSB 4100	Introduction to Programming for Neuroscience	PSB 3007 & PSY 3215	3
PSB 4001	History of Neuroscience	PSB 3007	3
PSY 4940	Research Internship in Psychological Science*	Permission of Instructor	Var
PSY 4941	Experiential Learning/Internship*	Permission of Instructor	Var
PSY 4914	Honors Research Project*	Permission of Instructor	Var

\*Var = Variable credits; Research and/or internships must be completed with a faculty member affiliated with the Bachelor's of Science in Behavioral Neuroscience or the Cognitive Neuroscience Ph.D. program (or otherwise approved by the BN program director); competitive acceptance

**Success Markers & Milestones**

A success marker is a guidepost along a student's academic journey which highlight enrollment in a critical course, or successful completion (C or better) of a critical course. Some markers require that you complete the course (completion) and some markers require that you have at least enrolled in the course (enrollment) by the specified credit amount.

Credits	30	45	60	75
Enrollment		CHM 1046+Lab	CHM 2210+Lab OR PHY 2048/PHY 2053+Lab	

Completion	MAC 1105 & CHM1045+Lab	MAC 1147, BSC2010+Lab & BSC 2011+Lab	CHM 1046+Lab	CHM 2210+Lab & CHM 2211+Lab <b>OR</b> PHY 2048/2054+Lab & PHY 2049/2054+Lab
------------	------------------------	--------------------------------------	--------------	---

**Milestones:** A milestone is a significant moment in the student's academic journey where a decision is typically made related to the student's continued progress in a major

Credits	60	90
Completion	MAC 2311, CHM 1045+Lab & CHM 1046+Lab	PSB 3007 and CHM 2210+Lab, CHM 2211+Lab <b>OR</b> PHY 2048/2053+Lab & PHY 2049/2054+Lab

### Sample Recommended Course Sequence

<u>Year 1 Fall Semester (14 credit hours)</u> UCC First Year Experience (1) STA 2122 or 3111 Intro to Stats I (3) CHM 1045 Gen Chemistry I (3) CHM 1045L Gen Chemistry I Lab (1) PSY 2012 Intro Psychology (3) UCC Communication I (3)  <u>Year 1 Spring Semester (14-15 credit hours)</u> CHM 1046 Gen Chemistry II (3) CHM 1046L Gen Chemistry II Lab (1) BSC 2010 Gen Biology I (3) BSC 2010L Gen Biology I Lab (1) UCC Communication II (3) MAC 2311 (4) or 2333 Calculus I (3)  <u>Year 1 Summer Semester (3 credit hours)</u> UCC Humanities Group One (3)  (31-32 credit hours total)	<u>Year 2 Fall Semester (12 credit hours)</u> BSC 2011 Gen Biology II (3) BSC 2011L Gen Biology II Lab (1) CHM 2210 Org Chem I (4) or PHY 2048/2053 Gen Phys I (4) CHM 2210L Org Chem I Lab (1) or PHY 2048L Gen Phys I Lab (1) UCC Course Arts (3)  <u>Year 2 Spring Semester (13-14 credit hours)</u> CHM 2211 Org Chem II (3) or PHY 2049/2054 Gen Phys II (4) CHM 2212 Org Chem II Lab or PHY 2049L Gen Phys II Lab (1) PSY 3211 Research Methods Psych I (3) UCC Course Social Science Group Two (3) UCC Humanities Group Two (3)  <u>Year 2 Summer Semester (4-7 credit hours)</u> General Elective or Civic Literacy (3) **PSY 4940 Research Internship in Psychological Science, PSY 4941 Experiential Learning/Internship, or PSY 4914 Honors Research Project (Variable Credits, 1-4)  (28-33 credit hours total)
<u>Year 3 Fall Semester (16 credit hours)</u> PSB 3007 Behavioral Neuroscience I (3) PSY 3215 Research Methods Psych II (4) General Elective (3) General Elective (3) Global Learning (3)  <u>Year 3 Spring Semester (12 credit hours)</u> PSB 3823 Behavioral Neuroscience II (3) PSB 3101 Behavioral Neuroscience Methods (3) Global Learning (3) Upper Division Elective (3)  <u>Year 3 Summer Semester (3 credit hours)</u> General Elective (3)  (31 hours total)	<u>Year 4 Fall Semester (15 credit hours)</u> PSB 4200 Systems Neuroscience (3) BN Elective (3) BN Elective (3) Upper Division Elective (3) General Elective (3)  <u>Year 4 Spring Semester (15 credit hours)</u> PSY 4931 Senior Seminar (3) PSB 4241 Clinical Neuroscience (3) BN Elective (3) Upper Division Elective (3) Upper Division Elective (3)  (30 hours total)

\*\*recommended; competitive acceptance; research and/or internships must be completed with a faculty member affiliated with the Bachelor's of Science in Behavioral Neuroscience or the Cognitive Neuroscience Ph.D. program (or otherwise approved by the BN program director);