

THE UNIVERSITY OF RHODE ISLAND

Interdisciplinary Neuroscience-BS

120 Credits Total

- General Ed Courses (40 cr)

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2020-2021 Catalog Year

Effective Fall 2020

Class of 2024

ABOUT THE INTERDISCIPLINARY NEUROSCIENCE BS DEGREE:

The Interdisciplinary Neuroscience Program (INP) at URI develops researchers, clinicians, and entrepreneurs who investigate the physiological basis of thought and behavior. As an INP student, you'll work with faculty who are developing interventions for brain disorders such as Alzheimer's and Parkinson's diseases, ALS, ADHD, communication disorders, epilepsy, schizophrenia, and more.

The program offers a bachelor's degree with three major options, master's and doctoral degrees, and a post-baccalaureate certificate in neuroscience. Its interdisciplinary approach provides neuroscience training that is both broad and deep, with an emphasis on practical, hands-on laboratory experience and diverse research opportunities.

GENERAL EDUCATION GUIDELINES: General education is 40 credits. Each of the twelve outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome, but cannot be double counted towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 credits). General education courses may also be used to meet requirements of the major or minor when appropriate.

General Education Credit Count				
At least 40 cr., No more than 12 credits with the same course code. (Note: Not all boxes need to be filled to add to 40 credits)				
Course	Cr.		Cours e	Cr.
BIO101	3			
BIO103	1			
BIO 102	3			
BIO 104	1			
CHM101	3			
COM100	3			
MTH103 (n/a if placed in MTH131)	3 (or N/A)			
MTH131	3			
WRT104 OR 106	3			
PHY 111	3			
PHY 185	1			
PSY 113	3			
			Total Gen Ed credits	≥40

General Education Outcome Audit	
	Course
KNOWLEDGE	
A1. STEM CHM101, MTH 103, MTH131	BIO101, 103
A2. Social & Behavioral Sciences	PSY 113
A3. Humanities	
A4. Arts & Design	
COMPETENCIES	
B1. Write effectively	WRT104 or 106
B2. Communicate effectively	COM100
B3. Mathematical, statistical, or computational strategies	MTH103/131
B4. Information literacy	WRT104 or 106
RESPONSIBILITIES	
C1. Civic knowledge & responsibilities	COM100
C2. Global responsibilities	
C3. Diversity and inclusion	
INTEGRATE & APPLY	
D1. Ability to synthesize	
GRAND CHALLENGE	
G. Check that at least one course of your 40 credits is an approved "G" course	

THE UNIVERSITY OF RHODE ISLAND

Interdisciplinary Neuroscience-BS Class of 2024

- 120 Credits Total
- **Preparation Classes** (required for all Neuroscience tracks) (40-43 cr)

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Preparation Courses (*these courses also fulfill 23-26 cr. of general education requirements)	Course	Grade	Cr		Semester
General Biology *A1	BIO 101		3		FR F
General Biology Lab *A1	BIO 103		1		FR F
General Biology II *A1	BIO 102		3		FR SP
General Biology II Lab *A1	BIO 104		1		FR SP
Human Anatomy & Physiology I	BIO 220		3		SOPH F
Human Anatomy and Physiology I lab	BIO 221		1		SOPH F
Human Anatomy and Physiology II	BIO 222		3		SOPH SP
Human Anatomy and Physiology II lab	BIO 223		1		SOPH SP
General Chemistry I *A1	CHM 101		3		FR F
General Chemistry I Lab	CHM 102		1		FR F
General Chemistry II	CHM 112		3		FR SP
General Chemistry II Lab	CHM 114		1		FR SP
Organic Chemistry I or Intro to Organic Chemistry	CHM 227 or 124		3		SOPH F
Applied Precalculus I (if needed) and Applied Calculus I *A3	MTH 103/131		3		FR F OR SP
General Psychology, *A2	PSY 113		3		SOPH F OR SP
Communication *B2, C1	COM 100		3		FR F
Research Writing or Writing to Inform *B1, B4	WRT 104 OR 106		3		FR SP
Introduction to URI	URI 101		1		FR F
PREPARATION COURSES SUBTOTAL			40-43		

* Course approved for General Education

**Interdisciplinary Neuroscience-BS
Class of 2024**

- 120 credits total
- **Core Classes** (required for all Neuroscience tracks) (31-36 cr)

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Core Courses (*these courses also fulfill 4 credits of general education requirements)	Course	Grade	Cr		Semester
Foundations of Neuroscience (NEW)	NEU 101		3		FR SP
Neuroscience Seminar (NEW)	NEU 110		1		SOPH F or SP
Neuroethics and Diversity (NEW)	NEU 210		3		SOPH SP
Neuroscience Research Methods (NEW)	NEU 262		4		SOPH SP
Neuroscience Professional Development (NEW)	NEU 230		1		SOPH F
Cellular & Molecular Neuroscience (NEW)	NEU 301		3		JR F
Developmental Neurobiology (NEW)	NEU 310		3		JR SP
Clinical Neuroscience (NEW)	NEU 320		3		JR F
Biostatistics OR Introductory Statistics	STA 307 or STA 308		4		JR SP
General Physics I *A1, B3	PHY 111		3		SOPH F
General Physics 1 Lab *A1, B3	PHY 185		1		SOPH F
Experiential Neuroscience (NEW)	NEU 410 or ITR 302 & 304		1-6		SR F
Neuroscience Journal Club (NEW)	NEU 460		1		SR SP
CORE COURSES SUBTOTAL			31-36		

- ITR 302 & 304 will earn you 6 credits. Cannot be taken for less. See advisor for more details.

MOLECULAR NEUROSCIENCE MAJOR TRACK REQUIREMENTS

- Preparation and Core classes required

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Molecular Neuroscience Major Requirements: Choose 15 credits from the following list.						
Course Code	Course Name			Credits	Semester	Grade
CSC/DSP 310	Programming for Data Science			4		
CMB 311	Biochemistry			3		
CMB/BIO 352	Genetics			4		
CMB/BIO 341	Cell Biology			3		
BIO/CMB 437	Fundamentals of Molecular Biology			3		
CMB 460	Experimental Approaches in Molecular and Cell Biology			3		
CHM 227	Organic Chemistry I			3	Required for pre-med	
CHM 228 & 226	Organic Chemistry II & Lab			5	Required for pre-med	
PHY 112	Physics II lecture			3		
PHY 186	Physics II lab			1		
Track Subtotal				15		
Molecular Neuroscience Major Electives: Choose a minimum of 3 credits from the following list.						
CMB 333	Immunology and Serology			3		
CMB 312 or 412	Advanced Biochemistry Lab			2		
CMB 320	Computational Biology			3		
CMB 353	Genetics Laboratory			1		
BIO/CMB 452	Advanced Topics In Genetics			3		
CMB 435	Introduction to the Biology and Genetics of Cancer			3		
CMB 482	Proteins and Enzymes: Mechanisms of Disease			3		
Track Subtotal				3+		

CLINICAL NEUROSCIENCE MAJOR TRACK REQUIREMENTS

- Preparation and Core classes required

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Clinical Neuroscience Major Requirements: Choose 15 credits from the following list.					
Course Code	Course Name		Credits	Semester	Grade
CMD 280G	The Real Reason for Brains		3		
BPS/PSY 205G	The Challenged Brain		3		
BPS 321	Principles of Pharmacology and Autonomic Pharmacology		2		
PSY 232*	Developmental Psychology		3		
PSY 254	Behavior Problems and Personality Disorders		3		
PSY 301	Research methods and Design in the Behavioral Sciences		4		
PSY 381	Physiological Psychology		3		
PSY 384	Cognitive Psychology		3		
PSY 385	Perception		3		
PSY 434	Psychological Testing		3		
HDF 357	Family and Community Health		3		
KIN 300	Physiology of Exercise		3		
Track Subtotal			15		
Clinical Neuroscience Major Electives: Choose a minimum of 3 credits from the following list.					
CMB 210	Biochemical Aspects of Nutrition and Physiology		3		
CMD 377	Functional Neuroanatomy		3		
CMD 494	Autism and Pervasive Developmental Disorders		3		
CMD 492	Interprofessional Clinical Research of Neurological Disorders		3		
BPS 313	Principles of Medicinal Chemistry		2		
BPS 401	Pharmaceutical Pharmacology I		3		
PSY 261	The Alcohol-Troubled Person: Introductory Concepts		3		
PSY 275	Alcohol Use and Misuse		3		
PSY 460	The Substance Troubled Person		3		
PHP 336G	Exploring Interdisciplinary Healthcare Solutions for Opioid Use Disorder		3		
PHP 405	Epidemiology in Health Care		4		
Track Subtotal			3+		

NEUROPHARMACOLOGY MAJOR TRACK REQUIREMENTS

- Preparation and Core classes required

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Neuropharmacology Major Requirements: Choose 15 credits from track requirements from the following list						
Course Code	Course Name			Cre dits	Sem ester	Gr ad e
BPS 313	Principles of Medicinal Chemistry			2		
BPS 321	Principles of Pharmacology and Autonomic Pharmacology			3		
BPS 345	Introduction to Pharmaceutical Research			3		
BPS 401	Pharmaceutical Pharmacology I			3		
BPS 432	CNS Drug Pharmacology and Medicinal Chemistry			3		
BPS 442	Pharmacogenomics and Pharmacogenetics			3		
BPS/CMB 450	Practical Tools for Molecular Sequence Analysis			3		
CMB 311	Biochemistry			3		
CMB 426	Structural Biochemistry			3		
BIO/CMB 437	Fundamentals of Molecular Biology			3		
CMB 460	Experimental Approaches in Molecular and Cell Biology			3		
CHM 228 & 226	Organic Chemistry II & Lab			5		
Track Subtotal				15		
Neuropharmacology Major Electives: Choose a minimum of 3 credits from the following list.						
BIO 482G*	Evolutionary Medicine of Human Health and Disease			3		
BME 281	Biomedical Engineering Seminar II			1		
BME 307	Bioelectricity			3		
BME 360	Biomeasurement			3		
BPS 201	How Drugs Work			3		
BPS/PSY 205G	The Challenged Brain			3		
BPS 402	Pharmaceutical Pharmacology II			3		
BPS/PSY 436	Psychotropic Drugs and Therapy			3		
CMB 464	Biochemistry of Metabolic Disease			3		
CMB 482	Proteins and Enzymes: Mechanisms of Disease			3		
CMD 280G	The Real Reason for Brains			3		
NEU 502	Introduction to Neurobiology			4		
NEU 503	Introduction to the Neurosciences			3		
PSY/NEU 381	Physiological Psychology			3		
PHP 336G	Exploring Interdisciplinary Healthcare Solutions for Opioid Use Disorder			3		
PHP 405	Epidemiology in Health Care			4		
PHP 555	Advanced Neuropsychiatric Pharmacotherapy			3		
Track Subtotal				3+		

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GENERAL CURRICULUM MAP*

*See previous pages for "Track" courses. Always consult academic advisor for long-term planning and course choices.

Interdisciplinary Neuroscience Major

<u>Freshman Fall</u>	<u>Credits</u>	<u>Freshman Spring</u>	<u>Credits</u>
URI 101*	1	BIO 102/104	4
BIO 101/103	4	CHM 112/114	4
CHM 101/102	4	MTH 131 (if needed)	3
MTH 103 or 131	3	NEU 101 (Foundations)	3
COM 100	3	WRT 104 or 106	3
Total=	15	Total=	17

<u>Sophomore Fall</u>	<u>Credits</u>	<u>Sophomore Spring</u>	<u>Credits</u>
PSY 113	3	BIO 222/223	4
CHM 124 OR 227	3	NEU 210 Neuroethics	3
BIO 220/221	4	NEU 262 Research	4
PHY 111/185	4	Gen Ed/Track	3
NEU 110 Seminar	1	Gen Ed/Track	3
NEU 230 Pro Dev	1	Choose track	
Total=	16	Total=	17

<u>Junior Fall</u>	<u>Credits</u>	<u>Junior Spring</u>	<u>Credits</u>
NEU 301 Cellular	3	NEU 310 Neuro Dev	3
NEU 320 Clinical	3	STA 307	3
STA 307 or Gen Ed	3	Gen Ed/Track	3
Gen Ed/Track	3	Gen Ed/Track	3
Gen Ed/Track	3	Gen Ed/Track	3
Total=	15	Total=	15

<u>Senior Fall</u>	<u>Credits</u>	<u>Senior Spring</u>	<u>Credits</u>
NEU 410 or ITR 302/304	1-6	NEU 460 Journal Club	1
Gen Ed/Track	3	Gen Ed/Track	3
Track or Elective	3	Track or Elective	3
Track or Elective	3	Track or Elective	3
Track or Elective	3	NEU 410 Exp	3
Total=	13-18	Total=	13

* Will be taught by INP faculty

Exactly which electives students take in a track will depend on their career goals.