

Program Change Request

Date Submitted: 05/29/20 11:49 am

Viewing: **SC-BS-NEUR : Neuroscience, BS**

Last approved: 03/03/20 8:10 am

Last edit: 05/29/20 11:49 am

Changes proposed by: jbazaz

**Catalog Pages
Using this Program**
[Neuroscience, BS](#)

Are you completing this form on someone else's behalf?

No

Effective Catalog: 2021-2022

Program Level: Undergraduate

Program Type: Bachelor's

Degree Type: Bachelor of Science

Title:
Neuroscience, BS

Banner Title: Neuroscience, BS

**Registrar/OAPI Use
Only – SCHEV
Status** Approved

**Registrar's Office
Use Only –
Program Start Term**

**Registrar/OAPI Use
Only – SCHEV
Letter**

Concentration(s):

**Registrar/IRR Use
Only –**

In Workflow

1. **NEUR Chair**
2. **SC Curriculum
Committee**
3. SC Associate Dean
4. SC CAT Editor
5. Assoc Provost-
Undergraduate
6. Registrar-Programs:
Duration
7. Registrar-Programs

Approval Path

1. 05/29/20 12:09 pm
Saleet Jafri (sjafri):
Approved for NEUR
Chair

History

1. Nov 22, 2017 by
clmig-jwehrheim
2. Feb 1, 2019 by
Jennifer Bazaz
Gettys (jbazaz)
3. May 1, 2019 by Tory
Sarro (vsarro)
4. Mar 3, 2020 by
Jennifer Bazaz
Gettys (jbazaz)

Concentration CIP Code**College/School:** College of Science**Department / Academic Unit:** Interdisciplinary Neuroscience Program**Jointly Owned Program?** No**Academic Themes:****Justification**

Making the approved program changes from October 2019 retroactive to catalog years 2018-2019 and 2019-2020 to give students under those catalog terms the option of the additional courses without extra paperwork from the department.

Total Credits Required: Total credits: minimum 120**Registrar's Office Use Only - Program Code:**
SC-BS-NEUR**Registrar/IRR Use Only – Program CIP Code****Admission Requirements:**

Admissions

University-wide admissions policies can be found in the [Undergraduate Admissions Policies](#) section of this catalog. To apply for this program, please complete the [George Mason University Admissions Application](#).

Program-Specific Policies:

Policies

Students must fulfill all [Requirements for Bachelor's Degrees](#), including the [Mason Core](#). [NEUR 410](#) Current Topics in Neuroscience or [NEUR 411](#) Seminar in Neuroscience fulfill the writing intensive requirement. For policies governing all undergraduate programs, see [AP.5 Undergraduate Policies](#).

Degree Requirements:

Students should refer to the [Admissions & Policies](#) tab for specific policies related to this program.

Foundation Courses

Biology

<u>BIOL 213</u>	Cell Structure and Function (<u>Mason Core</u>)	4
Select one from the following: 1,2		4
<u>BIOL 311</u>	General Genetics	
<u>BIOL 322</u>	Developmental Biology	
<u>BIOL 326</u>	Animal Physiology	
<u>BIOL 425</u>	Human Physiology	
<u>BIOL 430</u>	Advanced Human Anatomy and Physiology I	

Chemistry

<u>CHEM 211</u>	General Chemistry I (<u>Mason Core</u>)	4
& <u>CHEM 213</u>	and General Chemistry Laboratory I (<u>Mason Core</u>)	
<u>CHEM 212</u>	General Chemistry II (<u>Mason Core</u>)	4
& <u>CHEM 214</u>	and General Chemistry Laboratory II (<u>Mason Core</u>)	

Mathematics

Select one option (4 or 6 credits) from the following:		4-6
<u>MATH 113</u>	Analytic Geometry and Calculus I (<u>Mason Core</u>)	
<u>MATH 123</u>	Calculus with Algebra/Trigonometry, Part A	
& <u>MATH 124</u>	and Calculus with Algebra/Trigonometry, Part B (<u>Mason Core</u>)	

Statistics

Select one course (3 or 4 credits) from the following:		3-4
<u>BIOL 214</u>	Biostatistics for Biology Majors	
<u>STAT 250</u>	Introductory Statistics I (<u>Mason Core</u>)	
<u>PSYC 300</u>	Statistics in Psychology	
<u>MATH 352</u>	Statistics	

Physics

Select one of the following sequences:		8
<u>PHYS 243</u>	College Physics I (<u>Mason Core</u>)	
& <u>PHYS 244</u>	and College Physics I Lab (<u>Mason Core</u>)	
& <u>PHYS 245</u>	and College Physics II (<u>Mason Core</u>)	
& <u>PHYS 246</u>	and College Physics II Lab (<u>Mason Core</u>)	
<u>PHYS 160</u>	University Physics I (<u>Mason Core</u>)	
& <u>PHYS 161</u>	and University Physics I Laboratory (<u>Mason Core</u>)	
& <u>PHYS 260</u>	and University Physics II (<u>Mason Core</u>)	
& <u>PHYS 261</u>	and University Physics II Laboratory (<u>Mason Core</u>)	

Psychology 1,3

<u>PSYC 100</u>	Basic Concepts in Psychology (<u>Mason Core</u>)	3
<u>PSYC 375</u>	Brain and Sensory Processes	3
<u>PSYC 376</u>	Brain and Behavior	3

Computer Science

<u>CDS 130</u>	Computing for Scientists	3
----------------	--------------------------	---

Core Courses in Neuroscience 1

NEUR 327	Cellular, Neurophysiological, and Pharmacological Neuroscience	3
NEUR 335	Molecular, Developmental, and Systems Neuroscience	3
Technical Writing 1,2,4		
NEUR 410	Current Topics in Neuroscience	3
or NEUR 411	Seminar in Neuroscience	
Required Psychology Lab Course 1		
PSYC 373	Biopsychology Laboratory	2
Total Credits		54-57

1 Students must earn a minimum grade of 1.67 (C-) in these courses.

2 The course chosen to fulfill this requirement cannot be applied to the 24 credits of approved neuroscience electives.

3 Transfer students who have earned transfer credit for [PSYC 372](#) Biopsychology may substitute this course for [PSYC 375](#) Brain and Sensory Processes.

4 Either course fulfills the writing intensive requirement.

Electives

Students should consult with an advisor to choose appropriate elective courses, which must be approved by the director of the program. A sample of possible electives is given below. Only courses not already taken in the degree will apply as electives, with the exception of seminar and topics courses; a different topic must be addressed in the second instance of a seminar or topics course. Students may apply no more than 6 credits of courses with a grade of 'D' to this requirement.

Students intending to pursue a doctorate in neuroscience or a medical degree are advised to take [CHEM 313](#) Organic Chemistry I and [CHEM 315](#) Organic Chemistry Lab I.

Select 24 credits from the following:

24

- [BENG 101](#) Introduction to Bioengineering
- [BENG 313](#) Physiology for Engineers
- [BENG 434](#) Computational Modelling of Neurons and Networks
- [BIOL 305](#) Biology of Microorganisms
- [BIOL 306](#) Biology of Microorganisms Laboratory
- [BIOL 311](#) General Genetics
- [BIOL 322](#) Developmental Biology
- [BIOL 323](#) Lab for Developmental Biology
- [BIOL 326](#) Animal Physiology
- [BIOL 417](#) Selected Topics in Molecular and Cellular Biology (when topic is Foundations of the Mammalian Brain)
- [BIOL 420](#) Vaccines
- [BIOL 425](#) Human Physiology
- [BIOL 426](#) Mechanisms of Aging
- [BIOL 430](#) Advanced Human Anatomy and Physiology I
- [BIOL 431](#) Advanced Human Anatomy and Physiology II

<u>BIOL 432</u>	Clinical Applications in Human Physiology
<u>BIOL 452</u>	Immunology
<u>BIOL 453</u>	Immunology Laboratory
<u>BIOL 471</u>	Evolution
<u>BIOL 482</u>	Introduction to Molecular Genetics
<u>BIOL 483</u>	General Biochemistry
<u>BIOL 484</u>	Cell Signaling and Disease
<u>BIOL 515</u>	Developmental Neurobiology
<u>CDS 301</u>	Scientific Information and Data Visualization
<u>CHEM 313</u>	Organic Chemistry I
<u>CHEM 314</u>	Organic Chemistry II
<u>CHEM 315</u>	Organic Chemistry Lab I
<u>CHEM 318</u>	Organic Chemistry Lab II
<u>CHEM 321</u>	Quantitative Chemical Analysis
<u>CHEM 463</u>	General Biochemistry I
<u>CHEM 464</u>	General Biochemistry II
<u>CHEM 465</u>	Biochemistry Lab
<u>MATH 114</u>	Analytic Geometry and Calculus II
or <u>MATH 116</u>	Analytic Geometry and Calculus II (Honors)
<u>MATH 203</u>	Linear Algebra
<u>MATH 213</u>	Analytic Geometry and Calculus III
<u>MATH 214</u>	Elementary Differential Equations
<u>NEUR 405</u>	RS: Laboratory Methods in Behavioral Neuroscience
<u>NEUR 406</u>	Zebrafish Neurodevelopment Laboratory
<u>NEUR 407</u>	Lab Investigations Using Voltage Clamp Electrophysiology
<u>NEUR 410</u>	Current Topics in Neuroscience (when not used to fulfill the technical writing requirement) 1
<u>NEUR 411</u>	Seminar in Neuroscience 1
<u>NEUR 422</u>	Glutamatergic Systems
<u>NEUR 440</u>	Independent Study in Neuroscience
<u>NEUR 450</u>	Honors Thesis Proposal
<u>NEUR 451</u>	Honors Thesis
<u>NEUR 461</u>	Special Topics in Neuroscience
<u>NEUR 480</u>	Biological Bases of Alzheimer's Disease
<u>PHYS 262</u>	University Physics III (<u>Mason Core</u>)
<u>PHYS 263</u>	University Physics III Laboratory (<u>Mason Core</u>)
<u>PSYC 304</u>	Principles of Learning
<u>PSYC 309</u>	Sensation, Perception, and Information Processing
<u>PSYC 317</u>	Cognitive Psychology
<u>PSYC 441</u>	Criminal Behavior: Psychological and Neurological Aspects
<u>PSYC 472</u>	Current Topics in Brain and Behavior

1 Fulfills the writing intensive requirement.

Retroactive
Requirements
Updates:

Effective catalog years: 2018-2019; 2019-2020

Add to the selection of foundation course options: BIOL 322; BIOL 326; BIOL 425

Add to the elective course options: BIOL 432; BENG 434; NEUR 407; NEUR 422

Plan of Study:

Honors
Information:

Honors in the Major

Highly-qualified students may apply to graduate with honors in the major.

Eligibility

To be eligible for admission, neuroscience majors must have completed at least 60 credits and have a minimum cumulative GPA of 3.25 and a minimum GPA of 3.25 in neuroscience courses.

Honors Requirements

If accepted, students must take a sequence of three courses, which culminates in the successful completion and presentation of an independent honors thesis.

NEUR 410	Current Topics in Neuroscience	3
or NEUR 411	Seminar in Neuroscience	
NEUR 450	Honors Thesis Proposal	2-3
NEUR 451	Honors Thesis	3-4
Total Credits		8-10

To graduate with honors, students must earn a minimum GPA of 3.50 in their honors courses, maintain a minimum cumulative GPA of 3.25, and complete an honors thesis.

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via
distance (if
applicable):

What is the
primary delivery
format for the
program? Face-to-Face Only

Does any portion of this program occur off-campus?

No

Are you working with a vendor / other collaborators to offer your program?

No

Related
Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

No

Are you adding or removing a licensure component?

No

Additional SCHEV & SACSCOC Information

Are you changing the total number of credits required for this program?

Are you changing the delivery format in any way (e.g adding an online option)?

Are you adding/removing a licensure option which was approved by SCHEV?

Will any portion of this program be offered at an off-campus location?

Are you adding significant new content areas to the program?

Will this program change affect any specialized accreditation?

Green Leaf Program Designation

Is this a Green Leaf
program? No

Does this program cover material which crosses into another department?

No

**Additional
Attachments**

SCHEV Proposal

Executive Summary

**Reviewer
Comments**

**Additional
Comments**

Is this course required of all students in this degree program?

%wi_required.eshtml%