



This course plan is a **recommended** sequence for this major, **not** a guarantee of availability. Courses designated as important (!) may have a deadline for completion and/or affect time to graduation.

Importance	Course	Units	Upper Division Units	Min. Grade	Prerequisites	Notes
1st Semester (14 Units)						
!	ENGL 101 - First Year Composition	3			101.0 - 101.9 Foundations Writing Evaluation score	
!	MATH 122A - Functions for Calculus	1		C	75+ Math Placement Exam score or MATH 120R with a grade of C or higher	
!	MATH 122B - First Semester Calculus	4			MATH 122A with grade of C or higher	MATH 125 equivalent.
!	UNIV 101 - Introduction to General Education	1				Entry course.
	NROS 195B - Engaging Topics in Neuroscience &	1				Freshman colloquium course for NSCS students.
!	CHEM 151 - Chemical Thinking I	4			60+ Math Placement Exam score or MATH 112	Honors section available - CHEM 161 & CHEM 163 . Credit is only allowed for one lecture & lab combination.
2nd Semester (15 Units)						
!	ENGL 102 - First Year Composition	3				
!	CHEM 152 - Chemical Thinking II	4			CHEM 151 or CHEM 161 & CHEM 163 (<i>honors section</i>)	Honors section available - CHEM 162 & CHEM 164 . Credit is only allowed for one lecture & lab combination.
!	MCB 181R <i>and</i> MCB 181L - Introductory Biology I	4			40+ Math Placement Exam score or MATH 112/120R/122B/125	
	PSY 150A1	4				<i>Gened Social Scientist</i>
3rd Semester (14 Units)						
!	NSCS 200 - Fundamentals of Neuroscience & Cognitive Science	3			PSY 150A1 <i>or</i> PSY 101 <i>and</i> MCB 181R & MCB 181L or concurrent enrollment in one of the two prerequisites	Prerequisite for all NSCS and NROS courses.
	CHEM 241A - Lectures in Organic Chemistry	3			CHEM 152 or CHEM 162 (<i>honors section</i>)	Honors section available - CHEM 242A . Credit is only allowed for one lecture.
	CHEM 243A - Organic Chemistry Laboratory I	1			CHEM 152 or CHEM 162 & CHEM 164 (<i>honors section</i>)	Honors section available - CHEM 244A . Credit is only allowed for one lecture.
	Second Language Course (1st Semester Proficiency)	4		C	Second Language Placement Exam score	See advisor for course placement after Second Language Placement Exam has been taken. Second-semester proficiency is needed to fulfill NSCS major requirements.
	MATH 263 - Introduction to Statistics & Biostatistics (recommended for pre-med students) <i>or</i> PSY 230 - Psychological Measurement & Statistics	3			MATH 263: 60+ Math Placement Exam score or MATH 112/122B/125 PSY 230: MATH 112 & PSY 150A1 <i>or</i> PSY 101	Only complete one option.
4th Semester (17 Units)						
!	PHYS 102 <i>and</i> PHYS 181 - Introductory Physics I <i>or</i> PHYS 141 - Introductory Mechanics	4			60+ Math Placement Exam score or MATH 112/120R/122B/125	Only complete one option.
	General Education Course 1*	3				<i>See Note*</i>
	General Education Course 2*	3				<i>See Note*</i>
	PHIL 241 - Consciousness & Cognition	3				
	Second Language Course (2nd Semester Proficiency)	4			Second Language Placement Exam score	See advisor for course placement after Second Language Placement Exam has been taken. Second-semester proficiency is needed to fulfill NSCS major requirements.
5th Semester (14-15 Units)						
!	NROS 307 - Cellular Neurophysiology	3-4 (<i>honors section available</i>)	3 to 4		NSCS 200, MCB 181R, <i>and</i> CHEM 151 or equivalent	Honors section is available for enrollment to students in the W.A. Franke Honors College
	NROS 308 - Methods in Neuroscience	1	1		NSCS 200	
	NROS 311 - Scientific Programming with MATLAB	3	3		NSCS 200	
	PHYS 103 <i>and</i> PHYS 182 - Introductory Physics II <i>or</i> PHYS 241 - Introductory Electricity & Magnetism	4			PHYS 102 & PHYS 181 <i>or</i> PHYS 141	Only complete one option.
	Elective Course [^]	3				<i>See Note[^]</i>
6th Semester (15-16 Units)						
	NROS 310 - Molecular & Cellular Biology of Neurons	3-4 (<i>honors section available</i>)	3 to 4		NSCS 200, MCB 181R <i>and</i> MCB 181L, CHEM 151 <i>and</i> CHEM 152 or equivalent	Honors section is available for enrollment to students in the W.A. Franke Honors College
	General Education Course 4*	3	3			<i>See Note*</i>
	General Education Course 5*	3	3			<i>See Note*</i>
	Elective Course [^]	3				<i>See Note[^]</i>
	General Education Course 3*	3				<i>See Note*</i>
7th Semester (16 Units)						
	Elective Course [^]	3				<i>See Note[^]</i>
	CGSC 320 - Issues & Themes in Cognitive Science	3	3		NSCS 200	
	CGSC 321 - Methods in Cognitive Science	1	1		NSCS 200	
	Emphasis Course 1**	3	3			<i>See Note**</i>
	Emphasis Course 2**	3	3			<i>See Note**</i>
	Elective Course [^]	3				<i>See Note[^]</i>

8th Semester (16 Units)

!	NROS 418 - Fundamental Principles in Systems	3	3		NSCS 200 <i>and</i> NROS 307	
!	UNIV 301 - General Education Capstone	1	1		UNIV 101, General Education Foundations Writing <i>and</i> Math Courses, <i>and</i> five core General Education Courses: Exploring Perspectives & Building Connections	Exit course.
	Emphasis Course 3**	3	3			See Note**
	Emphasis Course 4**	3	3			See Note**
	Emphasis Course 5**	3	3			See Note**
	Elective Course^	3	3			See Note^
Minimum Total Units		Min. Upper Division Units	Min. Units in Residence	Min. NSCS Major Units	Min. GPA Needed	Additional Degree Completion Notes
120		42	30	35	2.00	Program Post-Test Needs to be Completed

Notes

*Any General Education - Exploring Perspectives (1 course in each category: Artist, Humanist) or Building Connections (3 courses needed) course. Gened Social Scientist covered by PSY 150A1.

** 15 units needed in one of the emphasis topics listed: Cognition, Computation, Development & Aging, Language & Communication Science, Neurobiology, Philosophy of Mind, and Thematic. See advisor for more details.

^Elective course needed to reach 120 unit minimum for graduation

CogSci Foundation Focus Course Listings

Choose three (3) courses from at least two (2) categories:

<p>Cognitive Psychology LING 440 - The Bilingual Mind PSY 333 - Judgement and Decision-Making PSY 340 - Intro to Cognitive Development PSY 426 - Advanced Human Memory PSY 429 - Advanced Perception</p>
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<p>Linguistics LING 201 - Introduction to Linguistics LING 341- Language Development LING 432 - Psychology of Language LING 449A - Biolinguistics</p>
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<p>Philosophy PHIL 202 - Introduction to Symbolic Logic PHIL 346 - Minds, Brains and Computers PHIL 442 - Knowledge and Cognition PHIL 450 - Philosophy of Mind</p>
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Emphasis Course Listings (15 Units)

<p>Cognition ECOL 346 – Bioinformatics ISTA 457 – Neural Networks LING 432 – Psychology of Language LING 440 – The Bilingual Mind NROS 344 – Modeling the Mind: Comp Models of Cognition NROS 412 – Molecular Mechanisms of Learning and Memory NROS 415 – Electrophysiology Lab PHIL 346 – Minds, Brains & Computers PHIL 439 – Decision Theory PSY 300 – Cognitive Neuroscience PSY 313 – Drugs and the Brain or PSY 413 – Drugs, Brain, and Behavior</p> <p>PSY 321 – Brain Rehabilitation PSY 326 – Human Memory PSY 340 – Introduction to Cognitive Development PSY 405 – Developmental Cognitive Neuroscience PSY 412 – Animal Learning PSY 422 – Introduction to Brain Connectivity PSY 433 – Decisions and the Brain</p>

<p>Computation <i>Quantitative Foundation - Choose One Course</i> ECE 220 – Basic Circuits ISTA 311 – Foundations of Information & Inference MATH 129 – Calculus II MATH 254 – Introduction to Ordinary Differential Equations MATH 355 – Analysis of Ord. Differential Equations PHYS 141– Introductory Mechanics & PHYS 241 – Introductory Electricity and Magnetism</p> <p><i>Emphasis - Complete Twelve (12) Units</i> BME 417 – Meas. & Data Analysis in Biomed. Engineering BME 477 – Introduction to Biomedical Informatics ECOL 346 – Bioinformatics ISTA 410 - Bayesian Modeling and Inference ISTA 421 - Introduction to Machine Learning ISTA 450 - Artificial Intelligence ISTA 457 – Neural Network MATH 475A - Math Prin. of Numerical Analysis MATH 485 - Mathematical Modeling NROS 344 – Modeling the Mind: Computational Models of Cognition NROS 415 – Electrophysiology Lab PHIL 455 - Philosophy and Artificial Intelligence</p>

<p>Language and Communication Science LING 300 – Introduction to Syntax LING 315 – Introduction to Phonology LING 322 – The Structure & Meaning of Words LING 341 – Language Development LING 364 – Introduction to Formal Semantics LING 388 – Language & Computers LING 432 – Psychology of Language LING 440 – The Bilingual Mind LING 449A – Biolinguistics PSYS 407 – Language and Thought: A Cognitive Psychology/Neuroscience Perspective</p> <p>SLHS 340 – Language Science SLHS 362 – Neurobiology of Communication SLHS 380 – Hearing Science SLHS 441 – Language Acquisition SLHS 473 – Communication Disorders II</p>
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<p>Notes: Students may choose to complete a Thematic Emphasis with courses of their choosing in a given theme. Thematic Emphases must be approved by the student's advisor, and the NSCS Director.</p> <p>Students may use up to six (6) units of Upper Division Thesis, Independent Study, Directed Research, Internship, or Precptorship (max three [3] units) towards their emphasis.</p>
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<p>Development and Aging FCM 496D - Disability Perspectives in Research, Policy, and Practice FSHD 413 – Issues in Aging NROS 440 – How to Build a Brain: Mech. Of Neural Development PSY 340 – Introduction to Cognitive Development PSY 405 – Developmental Cognitive Neuroscience PSY 405 – Developmental Cognitive Neuroscience PSY 424 – Gerontology: A Multidisc. Perspective PSY 459 – Adult Development and Aging PSY 478 – Sleep and Sleep Disorders SLHS 340 – Language Science</p>
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<p>Neurobiology ECOL 346 – Bioinformatics or ISTA 457 – Neural Networks or NROS 344 – Modeling the Mind: Comp. Models of Cognition ECOL 487R/L – Animal Behavior w/lab or NROS 381 – Animal Brains, Signals, Sex, and Social Behaviors</p> <p>NROS 330 - Principles of Neuroanatomy: Cells to Systems NROS 412 – Molecular Mechanisms of Learning and Memory NROS 415 – Electrophysiology Lab NROS 420 – Sensing and Action in Predator/Prey Encounters NROS 430 – Neurogenetics NROS 440 – How to Build a Brain: Mech. of Neural Development PSY 321 – Brain Rehabilitation PSY 313 – Drugs and the Brain or PSY 413 – Drugs, Brain, and Behavior</p>
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<p>Philosophy of Mind PHIL 305 – Intro to Philosophy of Science PHIL 345 – Philosophy and Psychiatry PHIL 346 – Minds, Brains & Computers PHIL 347 – Neuroethics PHIL 376 – Intro to the Philosophy of Language PHIL 437 – Moral and Social Evolution PHIL 439 – Decision Theory</p>
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