THE UNIVERSITY OF ARIZONA

BACHELOR OF SCIENCE IN NEUROSCIENCE & COGNITIVE SCIENCE

| CURRICULUM SHEET | CATALOG YEAR: 2022+

NAME _____ **SID** _____ **EXPECTED GRADUATION DATE** _____

GENERAL EDUCATION REQUIREMENTS (36-38 UNITS)

English Composition

ENGL 101 - First-Year Composition, Semester 1 ..... 3_
ENGL 102 - First-Year Composition, Semester 2 ..... 3_
or ENGL 109H - Advanced First-Year Composition ..... 3_

Foundation Mathematics

MATH 122A **&** 122B - First Semester Calculus ..... 1_ + 4_
**Some students may need to take:*
MATH 100 -> MATH 112 -> MATH 120R before taking MATH 122A&B.

Second Language

2nd semester proficiency by credit or exam required ..... _

Intro to General Education

UNIV 101 - Intro to the General Ed Experience ..... 1_

Exploring Perspective

Artist: _____ ..... 3_
Humanist_____ ..... 3_
Social Scientist:_____(PSY 150A1 recommended) ... 3_
Natural Scientist *(Requirement satisfied by NSCS foundations)*

Building Connections

1: _____ ..... 3_
2: _____ ..... 3_
3: _____ ..... 3_

General Education Capstone

UNIV 301 - General Education Portfolio ..... 1_

NSCS Common Supporting Coursework (18 Units)

MCB 181R **&** 181L - Intro Mol. & Cellular Bio & Lab ..... 3_ 1_
CHEM 151 - Chemical Thinking I ..... 4_
MATH 263 - Introduction to Statistics and Biostatistics ..... 3_
or PSY 230 - Psychological Measurement & Statistics ..... 3_
PHYS 110 - Introductory Studio Physics I ..... 4_
*previously PHYS 102 **&** 181
PHIL 241 - Consciousness & Cognition ..... 3_
or PHIL 347 - Neuroethics ..... 3_

NSCS Neurosci-specific Supporting Coursework (12 Units)

CHEM 152 - Chemical Thinking II ..... 4_
CHEM 241A **&** 243A - Organic Chemistry I & Lab ..... 3_1_
PHYS 103 **&** 182 - Introductory Physics I & Lab ..... 3_1_

NSCS Cognitive Sci-specific Supporting Coursework (9 Units)

Take three courses from at least two categories:
Cognitive Psychology | Linguistics | Philosophy
1: _____ ..... 3_
2: _____ ..... 3_
3: _____ ..... 3_

NSCS Common Core Coursework (14-15 Units)

NSCS 200 – Fund. of Neurosci & CogSci (fall only) ..... 3_
**needs to be taken first*
NROS 307/H – Cellular Neurophysiology (fall only) ..... 3/4_
NROS 308 – Methods in Neuroscience (fall only) ..... 1_
NROS 311 – Sci Programming w/ MATLAB ..... 3_
CGSC 320 – Issues & Themes in CogSci ..... 3_
CGSC 321 – Methods in CogSci ..... 1_

NSCS Neuroscience Focus Core Coursework (6-7 Units)

NROS 310/H – Mol &Cell Bio of Neurons (spring only)..... 3/4_
NROS 318 – Fund Prin in Systems Neuroscience (spring only).. 3_
*previously NROS 418

NSCS Cognitive Science Focus Core Coursework (9 Units)

CGSC 344 – Modeling the Mind ..... 3_
Take two courses from the Cognition Emphasis:
1: _____ ..... 3_
2: _____ ..... 3_

Emphasis Requirement (15 Units)

Complete 15 units from one emphasis. Up to 6 units of upper-division research, internship, thesis/capstone, independent study, or preceptorship (max 3 units) credit may be applied. Course listings, see second page.

__ Cognition _____ __
__ Computation _____ __
__ Development and Aging _____ __
__ Language & Comm. Sci _____ __
__ Neurobiology _____ __
__ Philosophy of Mind
__ Thematic

University Requirements

120 total units	☐	**42 upper division units**	☐
2.000 + cumulative GPA	☐	**2.000 + major GPA**	☐
MCWA complete	☐	Final 18/30 units complete	☐
30+ total units at UA	☐	18+ NSCS units at UA	☐

Cognitive Science Focus, Elective Focus Course Option

Cognitive Psychology
LING 440 - The Bilingual Mind
PSY 333 - Judgement & Decision Making
PSY 340 - Intro to Cognitive Development
PSY 426 - Advanced Human Memory
PSY 429 - Advanced Perception

Linguistics
LING 201 - Introduction to Linguistics
LING 341- Language Development
LING 432 - Psychology of Language
LING 449A – Biolinguistics

Philosophy
PHIL 202 - Introduction to Symbolic Logic
PHIL 346 - Minds, Brains & Computers
PHIL 442 - Knowledge and Cognition
PHIL 450 - Philosophy of Mind

Emphasis Options

Cognition
ECOL 346 – Bioinformatics
ISTA 457 – Neural Networks
LING 432 – Psychology of Language
LING 440 – The Bilingual Mind
CGSC 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
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
PSY 478 – Sleep and Sleep Disorders
PSYS 407 – Language and Thought: A Cog. Psych/Neuro Perspective

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 424 – Gerontology: A Multidisciplinary Perspective
PSY 459 – Adult Development and Aging
PSY 478 – Sleep and Sleep Disorders
SLHS 340 – Language Science
SLHS 441 – Language Acquisition

Neurobiology
ECOL 346 – Bioinformatics
or ISTA 457 – Neural Networks
or CGSC 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
NROS 330 - Principles of Neuroanatomy: Cells to Systems
NROS 412 – Molecular Mechanisms of Learning and Memory
NROS 415 – Electrophysiology Lab
NROS 420 – The Neuroscience of Survival
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
PSY 405 – Developmental Cognitive Neuroscience

Computation
Quantitative Foundation - Choose One Course (3-4 Units)
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
Continue & Complete Additional 12 Units
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
CGSC 344 – Modeling the Mind: Computational Models of Cognition
NROS 415 – Electrophysiology Lab
PHIL 455 - Philosophy and Artificial Intelligence
PSIO 472 - Quantitative Modeling of Biological Systems

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 Cog. Psych/Neuro Perspective
SLHS 340 – Language Science
SLHS 362 – Neurobiology of Communication
SLHS 380 – Hearing Science
SLHS 441 – Language Acquisition
SLHS 473 – Communication Disorders II
SLHS 477 – Communication Disorders I

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

Thematic
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 academic office.