

Cognitive Science Major

1. Foundation Requirement in Cognitive Science (185:201; 4cr)

2. Logical & Statistical Reasoning (One Course from Each Column)

Computational/Logical Reasoning	Statistical Reasoning
<ul style="list-style-type: none"> • Introduction to Logic (730:201; 3cr) • Introduction to Logic (730:202; 4cr) • Computing for Math & the Sciences (198:107; 3cr) • Introduction to Discrete Structures I (198:205; 4cr) • Mathematical Logic (640:461; 3cr) • Introduction to Mathematical Reasoning (640:300; 3cr) 	<ul style="list-style-type: none"> • Methods in Cognitive Science (185:320; 3cr) • Discrete Structures II (198: 206; 4cr) • Calculus I (640:135; 4cr) or Honors (640:191; 4cr) • Calculus II (640:136; 4cr) or Honors (640:192; 4cr) • Calculus I for Mathematical & Physical (640:151; 4cr) • Calculus I for Mathematical & Physical (640:152; 4cr) • Quantitative Methods in Psychology (830:200; 4cr) • Advanced Statistical Methods in Psychology (830:400;3cr) • Statistics I (960:211; 3cr) • Introductory Statistics for Business (960:285; 3cr) • Basic Statistics for Economics (960:201; 4cr) • Basic Statistics for Research (960:401; 3cr)

3. Distributional requirements (One Course from Three Columns)

Cognitive Neuroscience	Decision Making	Language	Minds, Machines, & Computation	Perception
<ul style="list-style-type: none"> • Brain, Mind & Behavior (119:195; 3cr) • Fundamentals of Neurobiology (146:245; 3cr; for CBN majors) • Essentials of Cell Biology & Neuroscience (146:295; 3cr) • Data Structures (198:112, 4cr) • Physiological Psychology (830:313; 3cr) 	<ul style="list-style-type: none"> • Cognition & Decision Making (185:301; 4cr) • Intermediate Microeconomics Analysis (220:320; 3cr) 	<ul style="list-style-type: none"> • Meaning & Numbering (185:330; 3cr) • Language & Cognition (185: 340 (previously 185:410); 4cr) • Introduction to Linguistic Theory (615:201; 3cr) • Philosophy of Language (730:210; 3cr) • Psychology of Language (830:351; 3cr) 	<ul style="list-style-type: none"> • The Concept of 'Concepts' in Cognitive Science (185: 310; 3cr) • Introduction to Computer Science (198:111; 4cr) • Introduction to Artificial Intelligence (198: 440; 4cr) • Minds, Machines & Persons (730:329; 3cr) • Philosophical Aspects of Cognitive Science (730:360; 3cr) 	<ul style="list-style-type: none"> • Design & Analysis of Computer Algorithms (198:344; 4cr) • Sensation & Perception (830:301; 3cr)

4. Capstone Course (One Course from the Following)

Undergraduate Seminar (185:411; 4cr)	Research in Cognitive Science (185:395; 3cr)	Honors Research (185:495; 3cr)
--------------------------------------	--	--------------------------------

5. Select ONE track & complete at least 3 courses from that track listed below

Cognitive Neuroscience

- o Behavioral & Neural Genetics (146:384; 3cr)
- o Advanced Neurobiology I (146:445; 3cr)
- o Advanced Neurobiology II (146:447; 3cr)
- o Research Methods in Cognitive Science (185:320; 3cr)
- o Advanced Topics in Cog Sci II (185:412; 3cr)
- o Advanced Topics in Cog Sci: Cog Neuro (185:413; 3cr)
- o Cognitive Neuroscience Through Case Studies (185:430; 4cr)
- o Modeling & Simulation of Continuous Systems (198: 424; 4cr)
- o Introduction to Artificial Intelligence (198:440; 4cr)
- o Mathematical Models in the Social & Biological Sciences (640:338; 3cr)
- o Minds, Machines & Persons (730:329; 3cr)
- o Philosophical Aspects of Cognitive Science (730:360; 3cr)
- o Philosophy of Mind (730:418; 3cr)
- o Cognition (830:305; 3cr)
- o Neuropsychology (830:310; 3cr)
- o Advanced Topics in Psychobiology (830:410 or 411; 3cr)
- o Neuropsychopharmacology (830:412; 3cr)
- o Behavioral Pharmacology (830:463; 3cr)
- o Introduction to Neural Processes - Biological & Artificial (14:125:440; 3cr)

Language

- o **One from following:**
 - o Syntax (615:305; 3cr)
 - o Phonology (615:315; 3cr)
 - o Semantics (615:325; 3cr)
 - o Pragmatics (615:350; 3cr)
- o **One from following:**
 - o Meaning & Numbering (185:330; 3cr)
 - o Advanced Topics in Cog Sci II (185:412; 3cr)
 - o Advanced Topics in Cog Sci: Language (185:415; 3cr)
 - o Philosophy of Language (730:420; 3cr)
 - o Semantics of Language (730:421; 3cr)
 - o Psychology of Language (830:313 or 615:371; 3cr)
 - o Language Acquisition (830:353; 3 or 615:433; 3cr)
 - o Language Acquisition (830:484; 3cr)
- o **Additional electives**
 - o Research Methods in Cognitive Science (185:320; 3cr)
 - o Language & Cognition (185:340 previously 185:410); 4cr)
 - o Introduction to French Syntax (420:333; 3cr)
 - o Historical Linguistics (615:330; 3cr)
 - o Morphology (615:411; 3cr)
 - o Evolution of the Human Language Capacity (615:415; 3cr)
 - o Language Typology (615:421; 3cr)
 - o Experimental Methodologies in Language Acquisition (615:435; 3cr)
 - o Linguistics & Cognitive Science (615:441; 3cr)
 - o Phonetics (615:451; 3cr)
 - o Current Issues in Second Language Acquisition (940:420; 3cr)
 - o Spanish Syntax (940:421; 3cr)
 - o Spanish Semantics (940:422; 3cr)
 - o Spanish Phonetics & Phonology (940:362; 3cr)
 - o Bilingualism in the Spanish-Speaking World (940:363; 3cr)

Perception

- o Research Methods in Cognitive Science (185:320; 3cr)
- o Advanced Topics in Cog Sci II (185:412; 3cr)
- o Advanced Topics in Cog Sci: Perception (185:417; 3cr)
- o Design & Analysis of Computer Algorithms (198:344; 4cr)
- o Introduction to Artificial Intelligence (198:440; 4cr)
- o Philosophy of Psychology (730:328; 3cr)
- o Philosophical Aspects of Cognitive Science (730:360; 3cr)
- o Sensation & Perception (830:301; 3cr)
- o Physiological Psychology (830:313; 3cr)
- o Topics in Visual Perception (830:480; 3cr)
- o Visual Intelligence (185:401; 3cr)
- o **One from following:**
 - o Graph Theory (640:428; 3cr)
 - o Mathematical Logic (640:461; 3cr)
 - o Mathematical Theory of Probability (640:477; 3cr)

Decision Making

- o Human Nature & Human Diversity (185:253; 4cr)
- o Cognition & Decision Making (185:301; 4cr)
- o Research Methods in Cognitive Science (185:320; 3cr)
- o Advanced Topics in Cog Sci II (185:412; 3cr)
- o Advanced Topics in Cog Sci: Decision Making (185:414; 3cr)
- o Intermediate Microeconomic Analysis (220:320; 3cr)
- o Behavioral Economics (220:480; 3cr)
- o Game Theory & Economics (220:482; 3cr)
- o Topics in Advanced Economic Theory (220:430; 3cr)
- o Mathematical Models in Social Sciences (640:339; 3cr)
- o Philosophy of Psychology (730:328; 3cr)
- o The Logic of Decision (730:424; 3cr)
- o Small Groups (830:326; 3cr)
- o Abnormal Psychology (830:340; 3cr)
- o Research Methods in Psychology (830:355; 3cr)
- o Health Psychology (830:377; 3cr)
- o Reasoning, Problem Solving, & Decision Making (830:408 or 409; 3cr)

Minds, Machine, & Computations

- o Brain, Mind, & Behavior (119:195; 3cr; honors)
- o Introduction to Neural Processes (125:405; 3cr)
- o Research Methods in Cognitive Science (185:320; 3cr)
- o The Concept of 'Concepts' in Cognitive Science (185:360; 3cr)
- o Advanced Topics in Cog Sci II (185:412; 3cr)
- o Advanced Topics in Cog Sci: MM&C (185:416; 3cr)
- o Introduction to Discrete Structures I (198:205; 4cr)
- o Introduction to Discrete Structures II (198:206; 4cr)
- o Design & Analysis of Computer Algorithms (198:344; 4cr)
- o Introduction to Artificial Intelligence (198:440; 4cr)
- o Formal Languages & Automata (198:452; 3cr)
- o Minds, Machines & Persons (730:329; 3cr)
- o Philosophical Aspects of Cognitive Science (730:360; 3cr)
- o Philosophy of Mind (730:418; 3cr)
- o Cognition (830: 305; 3cr)

6. Additional Requirements (All)

- o **Four Cognitive Science Courses (185 Curriculum)**
- o Grades of C or better must be earned in all courses counted towards the major.
- o Two thirds of total credits must be 300 level+
- o Two thirds of total credits must be from School of Arts and Sciences
- o No more than 4 courses from Philosophy or Computer Science
- o No more than 3 courses from any other department
- o Minimum of 36 credits
- o **Note: Courses used to satisfy the Distribution requirement cannot also be used to satisfy the Track elective requirements**

Students may declare the major using **My Major** (<http://mymajor.sas.rutgers.edu>) after taking Intro to Cog Sci (185:201), one Computational / Logical course, & one Statistical Reasoning course.

For more information contact: undergrad@ruccs.rutgers.edu