# Cognitive Science Major

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

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

<table>
<thead>
<tr>
<th>Computational/Logical Reasoning</th>
<th>Statistical Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Introduction to Logic (730:201; 3cr)</td>
<td>• Methods in Cognitive Science (185:320; 3cr)</td>
</tr>
<tr>
<td>• Introduction to Logic (730:202; 4cr)</td>
<td>• Discrete Structures I (198: 206; 4cr)</td>
</tr>
<tr>
<td>• Computing for Math &amp; the Sciences (198:107; 3cr)</td>
<td>• Calculus I (640:135; 4cr) or Honors (640:191; 4cr)</td>
</tr>
<tr>
<td>• Introduction to Discrete Structures I (198:205; 4cr)</td>
<td>• Calculus II (640:136; 4cr) or Honors (640:192; 4cr)</td>
</tr>
<tr>
<td>• Mathematical Logic (640:461; 3cr)</td>
<td>• Calculus I for Mathematical &amp; Physical (640:151; 4cr)</td>
</tr>
<tr>
<td>• Introduction to Mathematical Reasoning (640:300; 3cr)</td>
<td>• Calculus I for Mathematical &amp; Physical (640:152; 4cr)</td>
</tr>
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3. **Distributional requirements (One Course from Three Columns)**

<table>
<thead>
<tr>
<th>Cognitive Neuroscience</th>
<th>Decision Making</th>
<th>Language</th>
<th>Minds, Machines, &amp; Computation</th>
<th>Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Brain, Mind &amp; Behavior (119:195; 3cr)</td>
<td>• Cognition &amp; Decision Making (185:301; 4cr)</td>
<td>• Meaning &amp; Numbering (185:330; 3cr)</td>
<td>• The Concept of ‘Concepts’ in Cognitive Science (185: 310; 3cr)</td>
<td>• Design &amp; Analysis of Computer Algorithms (198:344; 4cr)</td>
</tr>
<tr>
<td>• Fundamentals of Neurobiology (146:245; 3cr; for CBN majors)</td>
<td>• Intermediate Microeconomics Analysis (220:320; 3cr)</td>
<td>• Language &amp; Cognition (185:340 (previously 185:410); 4cr)</td>
<td>• Introduction to Computer Science (198:111; 4cr)</td>
<td>• Sensation &amp; Perception (830:301; 3cr)</td>
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<tr>
<td>• Essentials of Cell Biology &amp; Neuroscience (146:295; 3cr)</td>
<td></td>
<td>• Introduction to Linguistic Theory (615:201; 3cr)</td>
<td>• Introduction to Artificial Intelligence (198: 440; 4cr)</td>
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<tr>
<td>• Data Structures (198:112; 4cr)</td>
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<td>• Philosophy of Language (730:210; 3cr)</td>
<td>• Minds, Machines &amp; Persons (730:329; 3cr)</td>
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<tr>
<td>• Physiological Psychology</td>
<td></td>
<td>• Psychology of Language (830:351; 3cr)</td>
<td>Philosophical Aspects of Cognitive Science (730:360; 3cr)</td>
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<tr>
<td>• (830:313; 3cr)</td>
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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
- Behavioral & Neural Genetics (146:384; 3cr)
- Advanced Neurobiology I (146:445; 3cr)
- Advanced Neurobiology II (146:447; 3cr)
- Research Methods in Cognitive Science (185:320; 3cr)
- Advanced Topics in Cog Sci II (185:412; 3cr)
- Advanced Topics in Cog Sci: Cog Neuro (185:413; 3cr)
- Cognitive Neuroscience Through Case Studies (185:430; 4cr)
- Modeling & Simulation of Continuous Systems (198: 424; 4cr)
- Introduction to Artificial Intelligence (198:440; 4cr)
- Mathematical Models in the Social & Biological Sciences (640:338; 3cr)
- Minds, Machines & Persons (730:329; 3cr)
- Philosophical Aspects of Cognitive Science (730:360; 3cr)
- Philosophy of Mind (730:418; 3cr)
- Cognition (830:305; 3cr)
- Neuropsychology (830:310; 3cr)
- Advanced Topics in Psychobiology (830:410 or 411; 3cr)
- Neuropsychopharmacology (830:412; 3cr)
- Behavioral Pharmacology (830:463; 3cr)
- Introduction to Neural Processes - Biological & Artificial (14:125:440; 3cr)

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

#### Perception
- Research Methods in Cognitive Science (185:320; 3cr)
- Advanced Topics in Cog Sci II (185:412; 3cr)
- Advanced Topics in Cog Sci: Perception (185:417; 3cr)
- Design & Analysis of Computer Algorithms (198:344; 4cr)
- Introduction to Artificial Intelligence (198:440; 4cr)
- Philosophy of Psychology (730:328; 3cr)
- Philosophical Aspects of Cognitive Science (730:360; 3cr)
- Sensation & Perception (830:301; 3cr)
- Physiological Psychology (830:313; 3cr)
- Topics in Visual Perception (830:480; 3cr)
- Visual Intelligence (185:401; 3cr)

- **One from following:**
  - Graph Theory (640:428; 3cr)
  - Mathematical Logic (640:461; 3cr)
  - Mathematical Theory of Probability (640:477; 3cr)

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### 6. Additional Requirements (All)

- Four Cognitive Science Courses
- Grades of C or better must be earned in all courses counted towards the major.
- Two thirds of total credits must be 300 level+
- Two thirds of total credits must be from School of Arts and Sciences
- No more than 4 courses from Philosophy or Computer Science
- No more than 3 courses from any other department
- Minimum of 36 credits
- **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

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