BRAIN AND COGNITIVE SCIENCES (COURSE 9)

Department of Brain and Cognitive Sciences (http://catalog.mit.edu/schools/science/brain-cognitive-sciences/#undergraduate)

Bachelor of Science in Brain and Cognitive Sciences

General Institute Requirements (GIRs)
The General Institute Requirements include a Communication Requirement that is integrated into both the HASS Requirement and the requirements of each major; see details below.

Summary of Subject Requirements

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Humanities, Arts, and Social Sciences (HASS) Requirement [two subjects can be satisfied by 9.00 and one other HASS subject in the Departmental Program]; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.</td>
<td>8</td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST) Requirement [can be satisfied by 6.0001/6.0002 and 9.01 in the Departmental Program]</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Requirement (12 units) [can be satisfied by a laboratory in the Departmental Program]</td>
<td>1</td>
</tr>
<tr>
<td>Total GIR Subjects Required for SB Degree</td>
<td>17</td>
</tr>
</tbody>
</table>

Physical Education Requirement
Swimming requirement, plus four physical education courses for eight points.

Departmental Program
Choose at least two subjects in the major that are designated as communication-intensive (CI-M) to fulfill the Communication Requirement.

Required Subjects

<table>
<thead>
<tr>
<th>Tier 1</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0001 Introduction to Computer Science Programming in Python</td>
<td>6</td>
</tr>
<tr>
<td>6.0002 Introduction to Computational Thinking and Data Science</td>
<td>6</td>
</tr>
<tr>
<td>9.00 Introduction to Psychological Science</td>
<td>12</td>
</tr>
<tr>
<td>9.01 Introduction to Neuroscience</td>
<td>12</td>
</tr>
<tr>
<td>9.40 Introduction to Neural Computation</td>
<td>12</td>
</tr>
<tr>
<td>9.07 Statistics for Brain and Cognitive Science</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier 2</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.09[J] Cellular and Molecular Neurobiology</td>
<td>36-84</td>
</tr>
</tbody>
</table>

Tier 3
Select up to four of the following:

- 9.24 Disorders and Diseases of the Nervous System
- 9.28 Current Topics in Developmental Neurobiology (CI-M)
- 9.32 Genes, Circuits, and Behavior
- 9.42 The Brain and Its Interface with the Body
- 9.46 Neuroscience of Morality (CI-M)

Laboratory
Select one of the following (Laboratory cannot also count for Research):

- 9.12 Experimental Molecular Neurobiology (CI-M)
- 9.17 Systems Neuroscience Laboratory (CI-M)
- 9.59[J] Laboratory in Psycholinguistics (CI-M)
- 9.60 Machine-Motivated Human Vision (CI-M)

Research
Select one of the following (Laboratory cannot also count for Research):

- 9.12 Experimental Molecular Neurobiology (CI-M)
- 9.17 Systems Neuroscience Laboratory (CI-M)
- 9.41 Research and Communication in Neuroscience and Cognitive Science (CI-M)
- 9.50 Research in Brain and Cognitive Sciences
- 9.59[J] Laboratory in Psycholinguistics (CI-M)
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| 9.60 | Machine-Motivated Human Vision (CI-M) |
| 9.URG | Undergraduate Research |

**Restricted Electives**
Select zero to four subjects. 9.URG cannot count as a Restricted Elective

**Units in Major**: 168-174

**Unrestricted Electives**: 54-72

Units in Major That Also Satisfy the GIRs (48-60)

Total Units Beyond the GIRs Required for SB Degree: 180

The units for any subject that counts as one of the 17 GIR subjects cannot also be counted as units required beyond the GIRs.

These subjects can count toward either the Laboratory or the Research requirement, but not both.

**Restricted Electives**

- 2.003[J] Dynamics and Control I 12
- 2.184 Biomechanics and Neural Control of Movement 12
- 5.07[J] Introduction to Biological Chemistry 12
- 5.12 Organic Chemistry I 12
- 5.13 Organic Chemistry II 12
- 6.003 Signal Processing 12
- 6.027[J] Biomolecular Feedback Systems 12
- 6.034 Artificial Intelligence 12
- 6.036 Introduction to Machine Learning 12
- 6.045[J] Computability and Complexity Theory 12
- 6.046[J] Design and Analysis of Algorithms 12
- 6.801 Machine Vision 12
- 6.803 The Human Intelligence Enterprise 12
- 6.806 Advanced Natural Language Processing 12
- 6.819 Advances in Computer Vision 12
- 7.03 Genetics 12
- 9.72 Vision in Art and Neuroscience 12
- 18.03 Differential Equations 12
- 18.06 Linear Algebra 12
- 18.404 Theory of Computation 12
- 24.211 Theory of Knowledge 12
- 24.900 Introduction to Linguistics 12
- 24.901 Language and Its Structure I: Phonology 12
- 24.902 Language and Its Structure II: Syntax 12
- 24.903 Language and Its Structure III: Semantics and Pragmatics 12
- 24.904 Language Acquisition 12