

BRAIN AND COGNITIVE SCIENCES (COURSE 9)

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

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	Subjects
Science Requirement	6
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.	8
Restricted Electives in Science and Technology (REST) Requirement [can be satisfied by 6.100A/6.100B and 9.01 in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by a laboratory in the Departmental Program]	1
Total GIR Subjects Required for SB Degree	17

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	Units
Tier 1	
6.100A Introduction to Computer Science Programming in Python	6
6.100B Introduction to Computational Thinking and Data Science	6
9.00 Introduction to Psychological Science	12
9.01 Introduction to Neuroscience	12
9.40 Introduction to Neural Computation	12
9.07 Statistics for Brain and Cognitive Science	12
Tier 2	
Select three of the following; up to seven may be taken:	36-84
9.09[] Cellular and Molecular Neurobiology	

9.13	The Human Brain
9.18[]	Developmental Neurobiology
9.19	Computational Psycholinguistics
9.21[]	Cellular Neurophysiology and Computing
9.26[]	Principles and Applications of Genetic Engineering for Biotechnology and Neuroscience
9.35	Perception
9.49	Neural Circuits for Cognition
9.53	Emergent Computations Within Distributed Neural Circuits
9.66[]	Computational Cognitive Science
9.85	Infant and Early Childhood Cognition (CI-M)

Tier 3

Select up to four of the following: 0-48

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)
9.67[]	Materials Physics of Neural Interfaces (CI-M)

Laboratory

Select one of the following: ¹ 12

9.12	Experimental Molecular Neurobiology (CI-M)
9.17	Systems Neuroscience Laboratory (CI-M)
9.59[]	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): 12-18

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

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9.59[[]]	Laboratory in Psycholinguistics (CI-M)	24.903	Language and Its Structure III: Semantics and Pragmatics	12
9.60	Machine-Motivated Human Vision (CI-M)	24.904	Language Acquisition	12
9.URG	Undergraduate Research			
Restricted Electives				
Select zero to four subjects. 9.URG cannot count as a Restricted Elective				0-48
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.

¹ These subjects can count toward either the Laboratory or the Research requirement, but not both.

Restricted Electives

2.003[[]]	Dynamics and Control I	12
2.180[[]]	Biomolecular Feedback Systems	12
2.184	Biomechanics and Neural Control of Movement	12
5.07[[]]	Introduction to Biological Chemistry	12
5.12	Organic Chemistry I	12
5.13	Organic Chemistry II	12
6.1200[[]]	Mathematics for Computer Science	12
6.1220[[]]	Design and Analysis of Algorithms	12
6.1400[[]]	Computability and Complexity Theory	12
6.3000	Signal Processing	12
6.3900	Introduction to Machine Learning	12
6.4100	Artificial Intelligence	12
6.8301	Advances in Computer Vision	15
6.8611	Quantitative Methods for Natural Language Processing	15
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