

COMPUTER SCIENCE AND MOLECULAR BIOLOGY (COURSE 6-7)

Computer Science and Molecular Biology (<http://catalog.mit.edu/interdisciplinary/undergraduate-programs/degrees/computer-science-molecular-biology>)

Bachelor of Science in Computer Science and Molecular Biology

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; 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 5.12 and 6.042[]] in the Departmental Program]	2
Laboratory Requirement (12 units) [can be satisfied by 7.02[]] or 20.109 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
<i>Mathematics and Introductory</i>	
6.00 Introduction to Computer Science and Programming ¹	12
6.042[]] Mathematics for Computer Science	12
<i>Chemistry</i>	
5.12 Organic Chemistry I	12
5.60 Thermodynamics and Kinetics	12
or 20.110[]] Thermodynamics of Biomolecular Systems	
<i>Introductory Laboratory</i>	
Select one of the following:	15-18
7.02[]] Introduction to Experimental Biology and Communication (CI-M)	

20.109 Laboratory Fundamentals in Biological Engineering (CI-M)

Foundational Subjects

Three Computer Science subjects:

6.006	Introduction to Algorithms	12
6.009	Fundamentals of Programming	12
6.046[]]	Design and Analysis of Algorithms	12

Three Biological Science subjects:

7.03	Genetics	12
7.05	General Biochemistry ²	12
7.06	Cell Biology	12

Restricted Electives

Computational Biology

Select one of the following:		12
6.047	Computational Biology: Genomes, Networks, Evolution	
6.503	Foundations of Algorithms and Computational Techniques in Systems Biology	
6.802[]]	Foundations of Computational and Systems Biology	

Biology

Select one subject from the list of Biology Restricted Electives		12
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Advanced Undergraduate Project

6.UAT	Oral Communication (CI-M) ³	9
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Units in Major 168-171

Unrestricted Electives 48

Units in Major That Also Satisfy the GIRs (36)

Total Units Beyond the GIRs Required for SB Degree 180-183

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 Students who enter MIT with sufficient programming experience may substitute 6.031 Elements of Software Construction (15 units) after taking 6.009.

² 5.07[]] Biological Chemistry I is also an acceptable option.

³ 6.UAR Seminar in Undergraduate Advanced Research is also an acceptable option.

Biology Restricted Electives

7.08[]]	Biological Chemistry II	12
7.20[]]	Human Physiology	12
7.21	Microbial Physiology	12
7.22	Developmental Biology	12
7.23	Immunology	12
7.26	Molecular Basis of Infectious Disease	12

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7.27	Principles of Human Disease	12
7.28	Molecular Biology	12
7.29[]	Cellular and Molecular Neurobiology	12
7.30A[] & 7.30B[]	Fundamentals of Ecology I and Fundamentals of Ecology II	12
7.31	Current Topics in Mammalian Biology: Medical Implications	12
7.32	Systems Biology	12
7.33[]	Evolutionary Biology: Concepts, Models and Computation	12
7.37[]	Molecular and Engineering Aspects of Biotechnology	12
7.371	Biological and Engineering Principles Underlying Novel Biotherapeutics	12
7.38	Mechanical Cell Biology	12
7.41	Principles of Chemical Biology	12
7.45	The Hallmarks of Cancer	12
7.49[]	Developmental Neurobiology	12