COMPUTER SCIENCE AND ENGINEERING (COURSE 6-3)

Department of Electrical Engineering and Computer Science (*http://catalog.mit.edu/schools/engineering/electrical-engineering-computer-science/#undergraduatestudytext*)

Bachelor of Science in Computer Science and Engineering

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 [one subject can be satisfied by 6.805[J] 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 6.004 and 6.042[J] (if taken under joint number 18.062[J]) in the Department Program]	2
Laboratory Requirement (12 units) [satisfied by 6.01, 6.02, 6.03 or 6.08 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.

Departmental Requirements		Units
6.0001	Introduction to Computer Science Programming in Python	6
6.042[J]	Mathematics for Computer Science	12
Select one of the following:		9-12
6.UAT	Oral Communication (CI-M)	
6.UAR	Seminar in Undergraduate Advanced Research (12 units, CI-M)	
Select one of the following:		12
6.01	Introduction to EECS via Robotics	
6.02	Introduction to EECS via Communication Networks	
6.03	Introduction to EECS via Medical Technology	
6.08	Introduction to EECS via Interconnected Embedded Systems	
Computer Science Requirements		
6.004	Computation Structures	12
6.006	Introduction to Algorithms	12
6.009	Fundamentals of Programming	12
6.031	Elements of Software Construction	15
6.033	Computer Systems Engineering (CI-M)	12
6.034	Artificial Intelligence	12
or 6.036	Introduction to Machine Learning	
6.045[J]	Automata, Computability, and Complexity	12
or 6.046[J]	Design and Analysis of Algorithms	
Elective Subjects [1]		
Select two Advanced Undergraduate Subjects		24-30
Select one subject from the departmental list of EECS subjects [2]		12
Units in Major		**162-171**
Unrestricted Electives		**48-66**
Units in Major That Also Satisfy the GIRs		**(36-48)**
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]   *Of the three required AUS and EECS subjects, at least one must be from the list of Independent Inquiry Subjects.*

[2]   *See departmental website (http://www.eecs.mit.edu/academics-admissions/undergraduate-programs) for list of acceptable EECS subjects.*

Advanced Undergraduate Subjects

6.023[J]	Fields, Forces and Flows in Biological Systems	12
6.025[J]	Medical Device Design (CI-M)	12
6.027[J]	Biomolecular Feedback Systems	12
6.035	Computer Language Engineering	12
6.047	Computational Biology: Genomes, Networks, Evolution	12
6.061	Introduction to Electric Power Systems	12
6.101	Introductory Analog Electronics Laboratory (CI-M)	12
6.111	Introductory Digital Systems Laboratory	12

6.115	Microcomputer Project Laboratory (CI-M)	12
6.1151	Microcomputer Project Laboratory - Independent Inquiry	15
6.131	Power Electronics Laboratory (CI-M)	12
6.1311	Power Electronics Laboratory - Independent Inquiry	15
6.172	Performance Engineering of Software Systems	18
6.175	Constructive Computer Architecture	12
6.301	Solid-State Circuits	12
6.302	Feedback System Design	12
6.602	Fundamentals of Photonics	12
6.701	Introduction to Nanoelectronics	12
6.717[J]	Design and Fabrication of Microelectromechanical Systems	12
6.801	Machine Vision	12
6.802[J]	Foundations of Computational and Systems Biology	12
6.803	The Human Intelligence Enterprise	12
6.804[J]	Computational Cognitive Science	12
6.806	Advanced Natural Language Processing	12
6.813	User Interface Design and Implementation	12
6.809[J]	Interactive Music Systems	12
6.814	Database Systems	12
6.815	Digital and Computational Photography	12
6.816	Multicore Programming	12
6.819	Advances in Computer Vision	12
6.837	Computer Graphics	12
6.905	Large-scale Symbolic Systems	12

Independent Inquiry Subjects

6.035	Computer Language Engineering	12
6.047	Computational Biology: Genomes, Networks, Evolution	12
6.100	Electrical Engineering and Computer Science Project	
6.111	Introductory Digital Systems Laboratory	12
6.1151	Microcomputer Project Laboratory - Independent Inquiry (CI-M)	15
6.129[J]	Biological Circuit Engineering Laboratory (CI-M)	12
6.1311	Power Electronics Laboratory - Independent Inquiry (CI-M)	15

6.141[J]	Robotics: Science and Systems (CI-M)	12
6.161	Modern Optics Project Laboratory (CI-M)	12
6.163	Strobe Project Laboratory (CI-M)	12
6.170	Software Studio	12
6.172	Performance Engineering of Software Systems	18
6.182	Psychoacoustics Project Laboratory (CI-M)	12
6.805[J]	Foundations of Information Policy (CI-M)	12
6.806	Advanced Natural Language Processing	12
6.809[J]	Interactive Music Systems	12
6.811[J]	Principles and Practice of Assistive Technology	12
6.813	User Interface Design and Implementation	12
6.819	Advances in Computer Vision	12
6.9041	Ethics for Engineers - Independent Inquiry	12
6.905	Large-scale Symbolic Systems	12