

ELECTRICAL ENGINEERING AND COMPUTER SCIENCE (COURSE 6-2)

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

Bachelor of Science in Electrical Engineering and Computer Science

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 6.073[] and 6.805[] 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 [satisfied by 6.002, 6.003, 6.004, and 18.03, 18.05, or 18.600 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
18.03 Differential Equations	6-12
or 2.087 Engineering Mathematics: Linear Algebra and ODEs	
<i>Select one of the following:</i>	9-12
6.UAR Seminar in Undergraduate Advanced Research (12 units, CI-M)	
6.UAT Oral Communication (CI-M)	
<i>Select one of the following:</i>	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	
EECS Requirements ^{1,2}		
Select three subjects from the Level 1 list		36
Select three subjects from the Level 2 list		36-39
Elective Subjects ^{2,3}		
Select two subjects from the list of Advanced Undergraduate Subjects		24-30
Select two subjects from the departmental list of EECS subjects ⁴		24
Units in Major		153-171
Unrestricted Electives		48-81
Units in Major That Also Satisfy the GIRs		(24-60)
Total Units Beyond the GIRs Required for SB Degree		180-189

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 six EECS Requirement subjects, at least two must be categorized as Computer Science, at least two must be categorized as Electrical Engineering, and at least one must be categorized as EECS.

² 6.008 can count as part of the EECS Requirements or as an elective subject, but not both.

³ Chosen electives must satisfy each of the following categories: Advanced Departmental Laboratory, Independent Inquiry, and Probability. A subject may count toward more than one category.

⁴ See departmental website (<http://www.eecs.mit.edu/academics-admissions/undergraduate-programs>) for list of acceptable EECS subjects.

Level I EECS Requirements

Electrical Engineering		
6.002	Circuits and Electronics	12
6.003	Signals and Systems	12
Computer Science		
6.006	Introduction to Algorithms	12
6.009	Fundamentals of Programming	12
EECS		
6.004	Computation Structures	12
6.008	Introduction to Inference	12

Level 2 EECS Requirements

Electrical Engineering		
6.011	Signals, Systems and Inference	12

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6.012	Nanoelectronics and Computing Systems	12	6.801	Machine Vision	12
6.013	Electromagnetics and Applications	12	6.802[J]	Foundations of Computational and Systems Biology	12
6.014	Electromagnetic Fields, Forces and Motion	12	6.803	The Human Intelligence Enterprise	12
6.021[J]	Cellular Neurophysiology and Computing	12	6.804[J]	Computational Cognitive Science	12
Computer Science			6.806	Advanced Natural Language Processing	12
6.031	Elements of Software Construction	15	6.813	User Interface Design and Implementation	12
6.033	Computer Systems Engineering (CI-M)	12	6.809[J]	Interactive Music Systems	12
6.034	Artificial Intelligence	12	6.814	Database Systems	12
6.045[J]	Automata, Computability, and Complexity	12	6.815	Digital and Computational Photography	12
6.046[J]	Design and Analysis of Algorithms	12	6.816	Multicore Programming	12
EECS			6.819	Advances in Computer Vision	12
6.036	Introduction to Machine Learning	12	6.837	Computer Graphics	12
Advanced Undergraduate Subjects			6.905	Large-scale Symbolic Systems	12
6.023[J]	Fields, Forces and Flows in Biological Systems	12	Independent Inquiry Subjects		
6.025[J]	Medical Device Design (CI-M)	12	6.035	Computer Language Engineering	12
6.027[J]	Biomolecular Feedback Systems	12	6.047	Computational Biology: Genomes, Networks, Evolution	12
6.035	Computer Language Engineering	12	6.100	Electrical Engineering and Computer Science Project	
6.047	Computational Biology: Genomes, Networks, Evolution	12	6.111	Introductory Digital Systems Laboratory	12
6.061	Introduction to Electric Power Systems	12	6.1151	Microcomputer Project Laboratory - Independent Inquiry (CI-M)	15
6.101	Introductory Analog Electronics Laboratory (CI-M)	12	6.129[J]	Biological Circuit Engineering Laboratory (CI-M)	12
6.111	Introductory Digital Systems Laboratory	12	6.1311	Power Electronics Laboratory - Independent Inquiry (CI-M)	15
6.115	Microcomputer Project Laboratory (CI-M)	12	6.141[J]	Robotics: Science and Systems (CI-M)	12
6.1151	Microcomputer Project Laboratory - Independent Inquiry	15	6.161	Modern Optics Project Laboratory (CI-M)	12
6.131	Power Electronics Laboratory (CI-M)	12	6.163	Strobe Project Laboratory (CI-M)	12
6.1311	Power Electronics Laboratory - Independent Inquiry	15	6.170	Software Studio	12
6.172	Performance Engineering of Software Systems	18	6.172	Performance Engineering of Software Systems	18
6.175	Constructive Computer Architecture	12	6.182	Psychoacoustics Project Laboratory (CI-M)	12
6.301	Solid-State Circuits	12	6.805[J]	Foundations of Information Policy (CI-M)	12
6.302	Feedback System Design	12	6.806	Advanced Natural Language Processing	12
6.602	Fundamentals of Photonics	12	6.809[J]	Interactive Music Systems	12
6.701	Introduction to Nanoelectronics	12	6.811[J]	Principles and Practice of Assistive Technology	12
6.717[J]	Design and Fabrication of Microelectromechanical Systems	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
Advanced Departmental Laboratory Subjects		
6.025[J]	Medical Device Design (CI-M)	12
6.035	Computer Language Engineering	12
6.047	Computational Biology: Genomes, Networks, Evolution	12
6.073[J]	Creating Video Games	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
6.129[J]	Biological Circuit Engineering Laboratory (CI-M)	12
6.131	Power Electronics Laboratory (CI-M)	12
6.1311	Power Electronics Laboratory - Independent Inquiry	15
6.141[J]	Robotics: Science and Systems (CI-M)	12
6.152[J]	Micro/Nano Processing Technology (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
6.175	Constructive Computer Architecture	12
6.182	Psychoacoustics Project Laboratory (CI-M)	12
6.302	Feedback System Design	12
6.804[J]	Computational Cognitive Science	12
6.806	Advanced Natural Language Processing	12
6.809[J]	Interactive Music Systems	12
6.816	Multicore Programming	12
6.819	Advances in Computer Vision	12
6.837	Computer Graphics	12

Probability Subjects

6.008	Introduction to Inference	12
6.041A	Introduction to Probability I	6
6.042[J]	Mathematics for Computer Science	12
18.05	Introduction to Probability and Statistics	12
18.600	Probability and Random Variables	12