

## GENERAL INSTITUTE REQUIREMENTS

### REST Requirement

Through Restricted Electives in Science and Technology (REST) Requirement subjects, students can broaden and deepen the educational foundation in basic science begun in the first-year program and further the understanding of scientific inquiry. These subjects are designed to give students the opportunity to proceed further in areas already studied, or to explore other areas of potential interest.

REST subjects vary in approach and emphasis. Some give a systematic introduction to the fundamental concepts and principles of a field; others illustrate through examples some of the attitudes, concerns, and methods that characterize professional work in the field. In general, REST subjects are not too specialized, too advanced, or devoted chiefly to instruction in a particular skill. Students typically take REST subjects in the second year, although with the proper prerequisites they may begin taking them in the first year.

Students meet the REST Requirement by taking two subjects from the list below. Of the subjects used to fulfill the requirement, the student can take no more than one in their department. However, subjects designated with a J that are offered jointly with another department do not fall under the departmental limitation.

In many cases, subjects required by a Departmental Program for the SB degree are also on the lists of REST and Laboratory Requirement subjects. Thus, students who follow a particular Departmental Program may simultaneously satisfy some part of these requirements.

### REST Requirement Subjects

1.00	Engineering Computation and Data Science	12
1.000	Introduction to Computer Programming and Numerical Methods for Engineering Applications	12
1.018[J]	Fundamentals of Ecology	12
1.050	Solid Mechanics	12
2.001	Mechanics and Materials I	12
2.003[J]	Dynamics and Control I	12
2.086	Numerical Computation for Mechanical Engineers	12
3.020	Thermodynamics of Materials	12
3.021	Introduction to Modeling and Simulation	12
4.440[J]	Introduction to Structural Design	12

5.07[J]	Introduction to Biological Chemistry	12
5.12	Organic Chemistry I	12
5.60	Thermodynamics and Kinetics	12
6.1200[J]	Mathematics for Computer Science	12
6.1910	Computation Structures	12
6.2000	Electrical Circuits: Modeling and Design of Physical Systems	12
6.3000	Signal Processing	12
6.3700	Introduction to Probability	12
6.Co6[J]	Linear Algebra and Optimization	12
7.03	Genetics	12
7.05	General Biochemistry	12
8.03	Physics III	12
8.033	Relativity	12
8.04	Quantum Physics I	12
8.041	Quantum Physics I	12
8.20	Introduction to Special Relativity	9
8.21	Physics of Energy	12
8.282[J]	Introduction to Astronomy	9
8.286	The Early Universe	12
9.01	Introduction to Neuroscience	12
10.301	Fluid Mechanics	12
11.074	Cybersecurity Clinic	12
12.001	Introduction to Geology	12
12.002	Introduction to Geophysics and Planetary Science	12
12.003	Introduction to Atmosphere, Ocean, and Climate Dynamics	12
12.004	Introduction to Biogeochemistry	12
12.400	Our Space Odyssey	12
12.425[J]	Extrasolar Planets: Physics and Detection Techniques	12
14.30	Introduction to Statistical Methods in Economics	12
15.053	Optimization Methods in Business Analytics	12
15.069	Applied Probability and Statistics	12
16.001	Unified Engineering: Materials and Structures	12
18.03	Differential Equations	12
18.032	Differential Equations	12
18.05	Introduction to Probability and Statistics	12
18.06	Linear Algebra	12
18.090	Introduction to Mathematical Reasoning	12
18.600	Probability and Random Variables	12

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18.700	Linear Algebra	12
18.Co6[J]	Linear Algebra and Optimization	12
20.110[J]	Thermodynamics of Biomolecular Systems	12
22.01	Introduction to Nuclear Engineering and Ionizing Radiation	12
22.02	Introduction to Applied Nuclear Physics	12
22.071	Analog Electronics and Analog Instrumentation Design	12
IDS.045[J]	System Safety	12
<i>The following combinations of six-unit subjects also count toward the REST Requirement:</i>		
5.601 & 5.602	Thermodynamics I and Thermodynamics II and Kinetics	12
5.611 & 5.612	Introduction to Spectroscopy and Electronic Structure of Molecules	12
6.100A & 6.100B	Introduction to Computer Science Programming in Python and Introduction to Computational Thinking and Data Science	12
6.100A & 16.C20[J]	Introduction to Computer Science Programming in Python and Introduction to Computational Science and Engineering	12