Bachelor of Science in Computer Science, Economics, and Data 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

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Requirement</td>
<td>6</td>
</tr>
<tr>
<td>Humanities, Arts, and Social Sciences (HASS)</td>
<td>8</td>
</tr>
<tr>
<td>Requirement [between one and three subjects can be from the Departmental Program]; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement.</td>
<td></td>
</tr>
<tr>
<td>Restricted Electives in Science and Technology (REST)</td>
<td>2</td>
</tr>
<tr>
<td>Requirement [can be satisfied by 6.042[J] and 18.06 in the Departmental Program]</td>
<td></td>
</tr>
<tr>
<td>Laboratory Requirement (12 units) [can be satisfied by 14.32 in the Departmental Program]</td>
<td>1</td>
</tr>
<tr>
<td>Total GIR Subjects Required for SB Degree</td>
<td>17</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.06 Linear Algebra</td>
<td>12</td>
</tr>
<tr>
<td>Computation/Algorithms</td>
<td></td>
</tr>
<tr>
<td>6.0001 Introduction to Computer Science</td>
<td>6</td>
</tr>
<tr>
<td>Programming in Python</td>
<td></td>
</tr>
<tr>
<td>6.006 Introduction to Algorithms</td>
<td>12</td>
</tr>
<tr>
<td>6.046[J] Design and Analysis of Algorithms</td>
<td>12</td>
</tr>
<tr>
<td>6.009 Fundamentals of Programming</td>
<td>6-12</td>
</tr>
</tbody>
</table>

or 6.0002 Introduction to Computational Thinking and Data Science

<table>
<thead>
<tr>
<th>Economics</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.01 Principles of Microeconomics</td>
<td>12</td>
</tr>
<tr>
<td>14.32 Econometric Data Science</td>
<td>12</td>
</tr>
<tr>
<td>Introductory Probability and Statistics</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
</tr>
<tr>
<td>14.30 Introduction to Statistical Methods in Economics</td>
<td>12</td>
</tr>
<tr>
<td>18.600 Probability and Random Variables</td>
<td></td>
</tr>
<tr>
<td>6.041 Introduction to Probability</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Science</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.036 Introduction to Machine Learning</td>
<td>12</td>
</tr>
</tbody>
</table>

Project-based
Select one of the following: 9-12

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.042[J] Seminar in Undergraduate Advanced Research (12 units, CI-M)</td>
<td></td>
</tr>
<tr>
<td>14.05 Intermediate Macroeconomics (CI-M)</td>
<td>2</td>
</tr>
<tr>
<td>14.18 Mathematical Economic Modeling (CI-M)</td>
<td></td>
</tr>
<tr>
<td>14.33 Research and Communication in Economics: Topics, Methods, and Implementation (CI-M)</td>
<td></td>
</tr>
</tbody>
</table>

Elective Subjects
Select one of the following computer science electives: 12

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.207[J] Networks</td>
<td></td>
</tr>
<tr>
<td>6.215 Optimization Methods</td>
<td></td>
</tr>
<tr>
<td>15.053 Optimization Methods in Business Analytics</td>
<td></td>
</tr>
</tbody>
</table>

Select three economics electives from the list below, including at least one subject from each group 36

Unrestricted Electives 48-63

Units in Major 177-186
Units in Major That Also Satisfy the GIRs (48-60) Total Units Beyond the GIRs Required for SB Degree 180-186

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 14.03 Microeconomic Theory and Public Policy is also an acceptable option.
2 Subject has prerequisites that are outside of the program.
### Economics Electives

Select three of the following, including at least one subject from each group:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.20</td>
<td>Industrial Organization: Competitive Strategy and Public Policy</td>
</tr>
<tr>
<td>14.27</td>
<td>Economics and E-Commerce</td>
</tr>
<tr>
<td>14.36</td>
<td>Advanced Econometrics</td>
</tr>
<tr>
<td>14.41</td>
<td>Public Finance and Public Policy</td>
</tr>
<tr>
<td>14.64</td>
<td>Labor Economics and Public Policy</td>
</tr>
<tr>
<td>14.75</td>
<td>Political Economy and Economic Development</td>
</tr>
<tr>
<td>15.780</td>
<td>Stochastic Models in Business Analytics</td>
</tr>
</tbody>
</table>

**Data Science**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.04</td>
<td>Intermediate Microeconomic Theory</td>
</tr>
<tr>
<td>14.12</td>
<td>Economic Applications of Game Theory</td>
</tr>
<tr>
<td>14.13</td>
<td>Psychology and Economics</td>
</tr>
<tr>
<td>14.15[]</td>
<td>Networks</td>
</tr>
<tr>
<td>14.16</td>
<td>Strategy and Information</td>
</tr>
<tr>
<td>14.19</td>
<td>Market Design</td>
</tr>
<tr>
<td>14.26[]</td>
<td>Economics of Incentives: Theory and Applications</td>
</tr>
<tr>
<td>14.54</td>
<td>International Trade</td>
</tr>
</tbody>
</table>

- Subject has prerequisites that are outside of the program.