

Course 2A and the Biomedical Engineering Minor

See <http://web.mit.edu/catalog/inter.under.html#biom> for more options and information.

Core Courses (in bold below):

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|---|---|--|----|---|--|---------------|--|----|----|-------------------------------|---------------|---------------------|----|----|----------------------------------|---------------|---------------------------------|----|----|--------------------------|---------------|--|----|----|----------------------------|---------------|--|----|----|--------------------------------------|---------------|---|----|----|-----------------------------------|----------------|---------------------------------------|----|----|---|----------------|---|---|----|---|----------------|--------------------------------------|----|----|---------------------|---------------|---|----|----|-------------------------------------|--|
| <ul style="list-style-type: none"> • Science Core:
5.12 + 5.07 or 7.05 • Biomedical Engineering Core (two required, all are possible Concentration Subjects): <table style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 30%;">2.673J</td> <td style="width: 40%;">Instrumentation and Measurement for Biological Systems</td> <td style="width: 10%;">12</td> <td style="width: 10%;">FA</td> <td style="width: 10%;">Prereq: 18.03; 2.001; <i>Coreq: 20.330</i></td> </tr> <tr> <td>2.772J</td> <td>Thermodynamics of Biomolecular Systems</td> <td>12</td> <td>FA</td> <td>Prereq: Calculus II/Chemistry</td> </tr> <tr> <td>2.791J</td> <td>Cellular Biophysics</td> <td>12</td> <td>FA</td> <td>Prereq: Physics II; 18.03; 2.005</td> </tr> <tr> <td>2.792J</td> <td>Quantitative Systems Physiology</td> <td>12</td> <td>SP</td> <td>Prereq: Physics II/18.03</td> </tr> <tr> <td>2.793J</td> <td>Fields, Forces and Flows in Biol Systems</td> <td>12</td> <td>SP</td> <td>Prereq: 2.005/6.021/20.320</td> </tr> <tr> <td>2.797J</td> <td>Molecular, Cell, and Tissue Biomechanics</td> <td>12</td> <td>SP</td> <td>Prereq: 2.370/2.772J; 18.03; Biology</td> </tr> <tr> <td>20.320</td> <td>Analysis of Biomolecular & Cell Systems</td> <td>12</td> <td>FA</td> <td>Prereq: 18.03; <i>Coreq: 5.07</i></td> </tr> <tr> <td>20.340J</td> <td>Materials for Biomedical Applications</td> <td>12</td> <td>SP</td> <td>Prereq: Chemistry/Biology/3.034 /3.012/ 3.046</td> </tr> <tr> <td>20.360J</td> <td>Tissue Eng for Analysis, Prevention, and Treatment of Human Disease</td> <td>9</td> <td>SP</td> <td>Prereq: 5.07/7.05; 7.03; 18.03; 20.110/5.60</td> </tr> <tr> <td>20.361J</td> <td>Molecular and Eng Aspects of Biotech</td> <td>12</td> <td>SP</td> <td>Prereq: 2.005; 7.06</td> </tr> <tr> <td>20.390</td> <td>Foundations of Comp and Systems Biology</td> <td>12</td> <td>SP</td> <td>Prereq: 7.05/5.07; or Biology/6.001</td> </tr> </table> | 2.673J | Instrumentation and Measurement for Biological Systems | 12 | FA | Prereq: 18.03; 2.001; <i>Coreq: 20.330</i> | 2.772J | Thermodynamics of Biomolecular Systems | 12 | FA | Prereq: Calculus II/Chemistry | 2.791J | Cellular Biophysics | 12 | FA | Prereq: Physics II; 18.03; 2.005 | 2.792J | Quantitative Systems Physiology | 12 | SP | Prereq: Physics II/18.03 | 2.793J | Fields, Forces and Flows in Biol Systems | 12 | SP | Prereq: 2.005/6.021/20.320 | 2.797J | Molecular, Cell, and Tissue Biomechanics | 12 | SP | Prereq: 2.370/2.772J; 18.03; Biology | 20.320 | Analysis of Biomolecular & Cell Systems | 12 | FA | Prereq: 18.03; <i>Coreq: 5.07</i> | 20.340J | Materials for Biomedical Applications | 12 | SP | Prereq: Chemistry/Biology/3.034 /3.012/ 3.046 | 20.360J | Tissue Eng for Analysis, Prevention, and Treatment of Human Disease | 9 | SP | Prereq: 5.07/7.05; 7.03; 18.03; 20.110/5.60 | 20.361J | Molecular and Eng Aspects of Biotech | 12 | SP | Prereq: 2.005; 7.06 | 20.390 | Foundations of Comp and Systems Biology | 12 | SP | Prereq: 7.05/5.07; or Biology/6.001 | <ul style="list-style-type: none"> • Engineering Core:
18.03 + 2.003J |
| 2.673J | Instrumentation and Measurement for Biological Systems | 12 | FA | Prereq: 18.03; 2.001; <i>Coreq: 20.330</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.772J | Thermodynamics of Biomolecular Systems | 12 | FA | Prereq: Calculus II/Chemistry | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.791J | Cellular Biophysics | 12 | FA | Prereq: Physics II; 18.03; 2.005 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.792J | Quantitative Systems Physiology | 12 | SP | Prereq: Physics II/18.03 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.793J | Fields, Forces and Flows in Biol Systems | 12 | SP | Prereq: 2.005/6.021/20.320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.797J | Molecular, Cell, and Tissue Biomechanics | 12 | SP | Prereq: 2.370/2.772J; 18.03; Biology | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.320 | Analysis of Biomolecular & Cell Systems | 12 | FA | Prereq: 18.03; <i>Coreq: 5.07</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.340J | Materials for Biomedical Applications | 12 | SP | Prereq: Chemistry/Biology/3.034 /3.012/ 3.046 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.360J | Tissue Eng for Analysis, Prevention, and Treatment of Human Disease | 9 | SP | Prereq: 5.07/7.05; 7.03; 18.03; 20.110/5.60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.361J | Molecular and Eng Aspects of Biotech | 12 | SP | Prereq: 2.005; 7.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20.390 | Foundations of Comp and Systems Biology | 12 | SP | Prereq: 7.05/5.07; or Biology/6.001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Biomedical Engineering Restricted Electives and Science/Engineering Electives from the following as Concentration Subjects (One restricted elective + 1 elective, or 2 restricted electives required):

- Restricted Electives: 2.782J, 2.785J, 3.052, 6.555J, 10.28, 10.29, 16.400, 16.423J, 20.342, 20.380J, 20.441J, 20.482J, 22.01, 22.058
- Science/Engineering Electives: 3.034, 7.02J (6 units toward Concentration), 20.104J, 20.109, 20.201, 20.450

Typical Mainstream Schedule: Course 2A with Biomedical Engineering Minor

Biomedical Engineering courses are highlighted. This schedule uses 2 Electives and 4 Concentration Subjects to complete the minor.

Freshman	Fall	IAP	Spring	Units
	3.091	12	8.02	12
	8.01	12	18.02	12
	18.01	12	Elective	12
	HASS	12	HASS	12
Total Units		48		48
Sophomore	Fall	IAP	Spring	Units
	2.001	12	2.670	12
	18.03	12	2.003J	12
	7.012	12	2.005	12
	HASS	12	5.12 (Elective)	12
Total Units		48	3	48
Junior	Fall	IAP	Spring	Units
	Second-level subject	12	2.671	12
	Second-level subject	12	Biomedical Eng Core (Conc Subject)	12
	5.07* (Elective)	12	Concentration Subject	12
	HASS	12	HASS	12
Total Units		48		48
Senior	Fall	IAP	Spring	Units
	2.009	12	Biomedical Elective (Conc Subject)	12
	Biomedical Eng Core (Conc Subject)	12	Concentration Subject	12
	Biomed Restr Elective (Conc Subject)	12	Elective	12
	HASS	12	HASS	12
Total Units		48		48

* can also take 7.05 in the Spring term, Jr or Sr year