

DOCTOR OF PHILOSOPHY IN BIOLOGICAL ENGINEERING

Department of Biological Engineering (<https://catalog.mit.edu/schools/engineering/biological-engineering/#biological-engineering-phd>)

Program Requirements

Core Subjects

20.420[J]	Principles of Molecular Bioengineering	12
20.440	Analysis of Biological Networks (Electives)	15

Biological Engineering Restricted Elective (choose one) 12

20.201	Fundamentals of Drug Development	
20.405[J]	Principles of Synthetic Biology	
20.410[J]	Molecular, Cellular, and Tissue Biomechanics	
20.415	Physical Biology	
20.430[J]	Fields, Forces, and Flows in Biological Systems	
20.450	Applied Microbiology	
20.463[J]	Biomaterials Science and Engineering	
20.490	Computational Systems Biology: Deep Learning in the Life Sciences	

Biological Engineering Unrestricted Elective 9-12

Choose one graduate-level subject in Biological Engineering beyond the Core Subjects, including any restricted elective option not used to fulfill that requirement.

Biological Science Elective 9-12

One graduate-level subject offered by the Department of Biology.

Engineering/Science Elective 9-12

One graduate-level subject offered in the School of Engineering or School of Science.

20.951	Thesis Proposal	24
20.THG	Graduate Thesis ¹	176

Total Units 266-275

Note: Students in this program can choose to receive the Doctor of Philosophy or the Doctor of Science in Biological Engineering. Students receiving veterans benefits must select the degree they wish to receive prior to program certification with the Veterans Administration.

¹ Students must register for thesis units every semester they are in the program as they complete appropriate milestones, including passing the doctoral qualifying process, forming a doctoral committee, writing and successfully defending a thesis proposal, writing and successfully defending the thesis, and submission of a final, approved thesis document. The units listed here represent an average number taken during the 3–4 year duration of the doctoral program.