Immunoengineering Focus Area –
Upper-Level Engineering Courses – updated January, 2023

EN.510.311	Structure of Materials	3
EN.510.312	Thermodynamics/Materials	3
EN.510.313	Mechanical Properties of Materials	3
EN.510.314	Electronic Properties of Materials	3
EN.510.315	Physical Chemistry of Materials II	3
EN.510.316	Biomaterials I	3
EN.510.403	Materials Characterization	3
EN.510.407	Biomaterials II: Host response and biomaterials applications	3
EN.510.415	The Chemistry of Materials Synthesis	3
EN.510.422	Micro and Nano Structured Materials & Devices	3
EN.510.426	Biomolecular Materials I - Soluble Proteins and Amphiphiles	3
EN.510.430	Biomaterials Lab	3
EN.510.435	Mechanical Properties of Biomaterials	3
EN.510.442	Nanomaterials Lab	3
EN.510.443	Chemistry and Physics of Polymers	3
EN.520.495	Microfabrication Lab	4
EN.530.410	Biomechanics of the Cell	3
EN.530.426	Biofluid Mechanics	3
EN.530.436	Bioinspired Science and Technology	3
EN.530.445	Introduction to Biomechanics	3
EN.530.446	Experimental Methods in Biomechanics	3
EN.540.301	Kinetic Processes	4
EN.540.303	Transport Phenomena I	3
EN.540.304	Transport Phenomena II	4
EN.540.306	Chemical & Biomolecular Separations	3
EN.540.402	Metabolic Systems Biotechnology	3
EN.540.403	Colloids and Nanoparticles	3
EN.540.414	Computational Protein Structure Prediction and Design	3
EN.540.421	Project in Design: Pharmacodynamics	3
EN.540.422	Introduction to Polymeric Materials	3
EN.540.432	Project in Design: Pharmacokinetics	3
EN.540.440	Micro/Nanotechnology: The Science and Eng. of Small Structures	3
EN.540.465	Engineering Principles of Drug Delivery	3
EN.540.602	Metabolic Systems Biotechnology	3
EN.553.386	Scientific Computing: Differential Equations	4
EN.553.391	Dynamical Systems	4
EN.553.413	Applied Statistics and Data Analysis	4
EN.553.420	Introduction to Probability	4
EN.553.426	Introduction to Stochastic Processes	4
EN.553.430	Introduction to Statistics	4

EN.553.433	Monte Carlo Methods	3
EN.553.436	Intro Data Science	4
EN.553.450	Computational Molecular Medicine	4
EN.553.492	Mathematical Biology	3
EN.580.418	Pulmonary Physiology	3
EN.580.430	Systems Pharmacology and Personalized Medicine	3
EN.580.433	Intro Computational Medicine: Physiome	2
EN.580.441	Cellular Engineering	3
EN.580.442	Tissue Engineering	3
EN.580.444	Biomedical Applications of Glycoengineering	3
EN.580.446	Physical Epigenetics	3
EN.580.447	Computational Stem Cell Biology	3
EN.580.464	Advanced Data Science	3
EN.580.453	Immunoengineering Principles and Applications	3
EN.580.488	Foundations of Computational Biology and Bioinformatics	4
EN.580.454	Methods in Nucleic Acid Sequencing	3
EN.580.452	Cell and Tissue Engineering Lab	3
EN.580.646	Molecular Immunoengineering	3
EN.580.752	Advanced Topics in Regenerative and Immune Engineering	4

Contact the BME Department advising office for course additions.

Non Upper-Level Focus Area Courses
(maximum of 3 credits from this list may count in focus area)
(courses used from this category cannot be double-counted)

AS.020.303	Genetics	3
AS.020.337	Stem Cells & the Biology of Aging & Disease	2
AS.020.363	Developmental Biology	3
EN.580.112	BME Design Group	3

Students may use a maximum of 3 research credits as a non-upper-level engineering course.