

Computational Medicine Focus Area -  
Upper-Level Engineering Courses – updated June, 2019  
For BME Class of 2021 and beyond

EN.520.315	Introduction to Bio-Inspired Processing of Audio-Visual Signals	3
EN.520.385	Signals, Systems and Machine Learning	3
EN.520.432	Medical Imaging Systems	3
EN.520.473	Magnetic Resonance in Medicine	3
EN.520.601	Introduction to Linear Systems Theory	3
EN.520.602	Introduction to Nonlinear Systems	3
EN.530.343	Design & Analysis of Dynamical Systems	3
EN.530.676	Locomotion in Mech. & Bio. Systems	3
EN.540.400	Project in Design: Pharmacokinetics	3
EN.540.421	Project in Design: Pharmacodynamics	3
EN.540.638	Advanced Topics in Pharmacokinetics and Pharmacodynamics	3
EN.553.386	Scientific Computing: Differential Equations	4
EN.553.391	Dynamical Systems	4
EN.553.420	Introduction to Probability	4
EN.553.426	Introduction to Stochastic Processes	4
EN.553.430	Introduction to Statistics	4
EN.553.436	Data Mining	4
EN.553.450	Computational Molecular Medicine	4
EN.580.430	Systems Pharmacology & Personalized Medicine	3
EN.580.431	Introduction to Computational Medicine I	3
EN.580.437	Neuro Data Design I	4
EN.580.438	Neuro Data Design II	4
EN.580.439	Models of the Neuron	4
EN.580.446	Physical Epigenetics	3
EN.580.447	Computational Stem Cell Biology	3
EN.580.462	Representations of Choice	3
EN.580.468	The Art of Data Science	3
EN.580.480	Precision Care Medicine I	4
EN.580.481	Precision Care Medicine II	4
EN.580.488	Foundations of Computational Biology & Bioinformatics	3
EN.580.491	Learning Theory	3
EN.601.350	Introduction to Genomic Research	3
EN.601.423	Data-Intensive Computing	3
EN.601.455	Computer Integrated Surgery I	4
EN.601.456	Computer Integrated Surgery II	3
EN.601.461	Computer Vision	3
EN.601.475	Introduction to Machine Learning	3
EN.601.476	Machine Learning: Data to Models	3
EN.601.482	Machine Learning: Deep Learning	3
EN.601.485	Probabilistic Models of the Visual Cortex	3

EN.601.723	Advanced Topics in Data-Intensive Computing	3
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Contact the department advising office for course additions.

## 200-Level Engineering Courses

(maximum of 3 credits from this list may count in focus area)

AS.250.353	Computational Biology	3
EN.601.226	Data Structures	4
EN.601.229	Computer System Fundamentals	3
EN.601.231	Automata & Computation Theory	3

## Non Upper-Level Focus Area Courses

(maximum of 3 credits from this list may count in focus area)

EN.580.112	BME Design Group	3
EN.580.211	BME Design Group	3
EN.580.212	BME Design Group	3
EN.580.311	BME Design Group	3
EN.580.312	BME Design Group	3
EN.580.411	BME Design Group	3
EN.580.412	BME Design Group	3
EN.580.580	Senior Design Project	3
EN.580.581	Senior Design Project	3

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