EECS TRACKS

Artificial Intelligence and Decision Making Track Subjects

Application Communication-Intensive in the Major (Application_CIM) or AI+D Advanced Undergraduate Subjects (AI +D_AUS)

18.404	Theory of Computation	12
6.3730[J]	Statistics, Computation and Applications	12
6.4200[J]	Robotics: Science and Systems (CI-M)	12
6.4210	Robotic Manipulation (CI-M)	15
6.5151	Large-scale Symbolic Systems	12
6.5831	Database Systems	12
6.7411	Principles of Digital Communication	12
6.8301	Advances in Computer Vision (CI-M)	15
6.8371	Digital and Computational Photography	12
6.8611	Quantitative Methods for Natural Language Processing (CI-M)	15
6.8701	Computational Biology: Genomes, Networks, Evolution	12
6.8711[J]	Computational Systems Biology: Deep Learning in the Life Sciences	12

Centers and (Application_CIM or AI+D_AUS)

One of the following:		
6.1220[J]	Design and Analysis of Algorithms	12
6.3000	Signal Processing	12
6.3100	Dynamical System Modeling and Control Design	12
6.3260[J]	Networks	12
6.3720	Introduction to Statistical Data Analysis	12
6.3730[J]	Statistics, Computation and Applications	12
6.3900	Introduction to Machine Learning	12
6.3950	AI, Decision Making, and Society	12
6.4100	Artificial Intelligence	12
6.4110	Representation, Inference, and Reasoning in AI	12
6.4120[J]	Computational Cognitive Science	12
6.4200[J]	Robotics: Science and Systems	12
6.4400	Computer Graphics	12
6.4590[J]	Foundations of Information Policy (CI-M)	12
6.5151	Large-scale Symbolic Systems	12
6.5831	Database Systems	12
6.7411	Principles of Digital Communication	12
6.8301	Advances in Computer Vision	15
6.8371	Digital and Computational Photography	12
6.8611	Quantitative Methods for Natural Language Processing	15
6.8701	Computational Biology: Genomes, Networks, Evolution	12
6.C35[J]	Interactive Data Visualization and Society [1]	12
6.C571[J]	Optimization Methods	12
9.660	Computational Cognitive Science	12
18.404	Theory of Computation	12

Plus one subject from the Application_CIM or AI +D_AUS offerings

[1] *Students must also take a 6-unit Common Ground disciplinary module to receive credit for this subject.*

Computer Science Track Subjects

Computer Architecture

6.1920	Constructive Computer Architecture	12
6.2050	Digital Systems Laboratory (CI-M)	12
6.2060	Microcomputer Project Laboratory (CI-M)	12
6.5931	Hardware Architecture for Deep Learning	12

Computers and Society

6.1850	Computer Systems and Society (CI-M)	12
6.4590[J]	Foundations of Information Policy (CI-M)	12
6.C35[J]	Interactive Data Visualization and Society	12

Human Computer Interaction

6.1040	Software Design	18
6.4510	Engineering Interactive Technologies	12
6.4530[J]	Principles and Practice of Assistive Technology	12
6.4550[J]	Interactive Music Systems	12
6.C35[J]	Interactive Data Visualization and Society	12

Programming Principles and Tools

6.1040	Software Design	18
6.1060	Software Performance Engineering	18
6.1100	Computer Language Engineering	12
6.1120	Dynamic Computer Language Engineering	12
6.5081	Multicore Programming	12

Systems

6.1600	Foundations of Computer Security	12
6.1810	Operating System Engineering	12
6.1820[J]	Mobile and Sensor Computing	12
6.5831	Database Systems	12

Theory

6.1220[J]	Design and Analysis of Algorithms	12
6.1400[J]	Computability and Complexity Theory	12
6.1420	Fixed Parameter and Fine-grained Computation	12
18.404	Theory of Computation	12

Electrical Engineering Track Subjects

Biomedical Systems

6.4800[J]	Biomedical Systems: Modeling and Inference	12
And one of the following subjects:		
6.4810[J]	Cellular Neurophysiology and Computing	12
6.4820[J]	Quantitative and Clinical Physiology	12
6.4830[J]	Fields, Forces and Flows in Biological Systems	12
6.4860[J]	Medical Device Design (CI-M)	12

Communications and Networks

6.7411	Principles of Digital Communication	12
And one of the following subjects:		
6.1800	Computer Systems Engineering (CI-M)	12
6.3000	Signal Processing	12
6.3010	Signals, Systems and Inference	12

Computer Architecture [1]

6.1920	Constructive Computer Architecture	12
6.2050	Digital Systems Laboratory (CI-M)	12
6.2060	Microcomputer Project Laboratory (CI-M)	12
6.5931	Hardware Architecture for Deep Learning	12

Devices, Circuits, and Systems

One of the following subjects:		
6.2040	Analog Electronics Laboratory (CI-M)	12
6.2080	Semiconductor Electronic Circuits	12
6.2090	Solid-State Circuits	12
And one of the following subjects:		
6.2040	Analog Electronics Laboratory (CI-M)	12
6.2050	Digital Systems Laboratory (CI-M)	12
6.2060	Microcomputer Project Laboratory (CI-M)	12
6.2080	Semiconductor Electronic Circuits	12
6.2090	Solid-State Circuits	12
6.2220	Power Electronics Laboratory (CI-M)	12
6.2221	Power Electronics Laboratory - Independent Inquiry	15
6.2300	Electromagnetics Waves and Applications	12
6.2500	Nanoelectronics and Computing Systems	12

Electromagnetics and Photonic Systems

6.2210	Electromagnetic Fields, Forces and Motion	12
6.2300	Electromagnetics Waves and Applications	12
6.2370	Modern Optics Project Laboratory (CI-M)	12
6.6331	Fundamentals of Photonics	12

Embedded Systems

6.1820[J]	Mobile and Sensor Computing	12
6.2050	Digital Systems Laboratory (CI-M)	12
6.2060	Microcomputer Project Laboratory (CI-M)	12
6.4510	Engineering Interactive Technologies	12

Energy Systems

6.2200	Electric Energy Systems	12
And one of the following:		
6.2210	Electromagnetic Fields, Forces and Motion	12
6.2220	Power Electronics Laboratory (CI-M)	12
6.2221	Power Electronics Laboratory - Independent Inquiry	15

Hardware Design

6.1920	Constructive Computer Architecture	12
6.2050	Digital Systems Laboratory (CI-M)	12
6.2060	Microcomputer Project Laboratory (CI-M)	12

Hardware and Software

6.1800	Computer Systems Engineering (CI-M, CI-M)	12
And of the following subjects:		
18.404	Theory of Computation	12
6.1040	Software Design	18
6.1060	Software Performance Engineering	18
6.1100	Computer Language Engineering	12
6.1120	Dynamic Computer Language Engineering	12
6.1220[J]	Design and Analysis of Algorithms	12
6.1400[J]	Computability and Complexity Theory	12
6.1420	Fixed Parameter and Fine-grained Computation	12
6.1600	Foundations of Computer Security	12
6.1810	Operating System Engineering	12
6.1820[J]	Mobile and Sensor Computing	12
6.1850	Computer Systems and Society (CI-M)	12
6.4510	Engineering Interactive Technologies	12
6.4530[J]	Principles and Practice of Assistive Technology	12
6.4550[J]	Interactive Music Systems	12
6.4590[J]	Foundations of Information Policy (CI-M)	12
6.5081	Multicore Programming	12
6.5831	Database Systems	12
6.C35[J]	Interactive Data Visualization and Society [2]	12

Nanoelectronics

6.2500	Nanoelectronics and Computing Systems	12
And of of the following:		
6.2540	Nanotechnology: From Atoms to Systems	12
6.2600[J]	Micro/Nano Processing Technology (CI-M)	12

Quantum Systems Engineering

6.2400	Introduction to Quantum Systems Engineering	12
6.2410	Quantum Engineering Platforms	12

Systems Science

6.3000	Signal Processing	12
6.3010	Signals, Systems and Inference	12
6.3260[J]	Networks	12
6.3720	Introduction to Statistical Data Analysis	12
6.3900	Introduction to Machine Learning	12
6.4110	Representation, Inference, and Reasoning in AI	12
6.4200[J]	Robotics: Science and Systems (CI-M)	12
6.4210	Robotic Manipulation (CI-M)	15
6.8301	Advances in Computer Vision (CI-M)	15
6.C27[J]	Computational Imaging: Physics and Algorithms	12
6.C571[J]	Optimization Methods	12

[1] *In the Computer Architecture track, students can take 6.2050 or 6.2060, but not both.*

[2] *Credit cannot be awarded without simultaneous completion of a 6-unit disciplinary module. Consult advisor.*