Electronic Intelligent Systems

The Electronic Intelligent Systems minor offers the opportunity to gain breadth, as well as depth, in the areas of electronic intelligent systems that connect to the physical and social world. The minor includes sub-areas, such as robotics, machine learning, and artificial intelligence, as well as electronic and electrical engineering. Students learn computer programming, as well as computer engineering. EIS minors achieve an understanding of conceptual foundations and emerging applications over a broad range of electrical engineering, computer engineering, and computer science subjects.

General Guidelines

1. All minors must be declared no later than one semester before a student's Expected Graduation Term (EGT). If the semester before the EGT is fall or spring, the deadline is the last day of RRR week. If the semester before the EGT is summer, the deadline is the final Friday of summer sessions. To declare the minor, contact the EECS department advisor for information on requirements and the declaration process.
2. All courses taken to fulfill the minor requirements must be taken on a letter-graded basis.
3. All upper division courses taken to fulfill the minor must be completed with an overall GPA of 2.0 or above.
4. No more than one upper division course may be used simultaneously to fulfill requirements for a student’s major and minor programs.
5. Completion of the minor program must not delay a student’s graduation.
6. EECS and L&S CS majors may not pursue an EIS minor.
7. All students must complete the EIS Minor Completion Form by the tenth week of their final semester.

Requirements

Lower Division Requirements		
EECS 16A	Foundations of Signals, Dynamical Systems, and Information Processing	4
EECS 16B	Introduction to Circuits & Devices	4
Select from one of the following:		
COMPSCI 61A	The Structure and Interpretation of Computer Programs	4
COMPSCI C8 & C88C	Foundations of Data Science and Computational Structures in Data Science	7
Upper Division Requirements [1]		
Select two from the following:		
EL ENG 105	Microelectronic Devices and Circuits	4
EECS C106A	Introduction to Robotics	4
EL ENG 117	Electromagnetic Fields and Waves	4
EL ENG 118	Introduction to Optical Engineering	4
EL ENG 120	Signals and Systems	4
EECS 126	Probability and Random Processes	4
EECS 127	Optimization Models in Engineering	4
EL ENG 130	Integrated-Circuit Devices	4
EL ENG 134	Fundamentals of Photovoltaic Devices	4
EL ENG 137A	Introduction to Electric Power Systems	4
EL ENG 143	Microfabrication Technology	4
EL ENG 147	Introduction to Microelectromechanical Systems (MEMS)	3
EECS 149	Introduction to Embedded and Cyber Physical Systems	4
EECS 151	Introduction to Digital Design and Integrated Circuits	3
COMPSCI 152	Computer Architecture and Engineering	4
COMPSCI 170	Efficient Algorithms and Intractable Problems	4
COMPSCI 188	Introduction to Artificial Intelligence	4
COMPSCI 189	Introduction to Machine Learning	4
Select one from the following:		
COMPSCI 61C	Great Ideas of Computer Architecture (Machine Structures)	4
COMPSCI 70	Discrete Mathematics and Probability Theory	4
OR any upper division EE or EECS course		

[1] All courses used for the minor must be at least 3 units.