Electronic Intelligent Systems

The Electronic Intelligent Systems minor offers the opportunity to gain breadth as well as depth in the area 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/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

- All courses taken to fulfill the minor requirements must be taken for graded credit.
- All upper division courses taken to fulfill the minor must be completed with an overall GPA of 2.0 or above.
- No more than one upper division course may be used to simultaneously fulfill requirements for a student’s major and minor programs.
- Completion of the minor program cannot delay a student’s graduation.
- EECS majors should not be pursuing an EIS minor.
- All students must complete the EIS Minor Completion Form during their final semester.

Requirements

Lower Division Requirements

EL ENG 16A  
Course Not Available

EL ENG 16B  
Designing Information Devices and Systems II  4

Select from one of the following:

COMPSCI 61A  
The Structure and Interpretation of Computer Programs  4

COMPSCI C8 & COMPSCI 88  
Foundations of Data Science and Computational Structures in Data Science  4

Upper Division Requirements

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  3

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 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.