

## Symbolic Systems Undergraduate Core Cross-Area Requirement

The Cross-Area Requirement is a Breadth Requirement in the undergraduate major Core for the Bachelor of Science degree in Symbolic Systems. Each course approved for this requirement is a non-introductory course, which has as a prerequisite at least one Core course (or equivalent), and which integrates methods and subject matter from at least two Breadth areas in the Core (as noted below).

Below is the full list of approved courses for the Cross-Area Requirement. Only one course must be chosen to fulfill the requirement -- the categories are for guidance only. Suggested courses for most students are in **Green**.

- Philosophical Analysis and Formal Methods
  - PHIL 152: Computability and Logic (PHIL 152)
  - PHIL 154: Modal Logic (PHIL 254)
  - PHIL 162: Philosophy of Mathematics (PHIL 262)
  - PHIL 181: Philosophy of Language (PHIL 281)
- Philosophical Analysis and Computational Methods
  - CS 181: Computers, Ethics, and Public Policy
  - CS 182: Ethics, Public Policy, and Technological Change (COMM 180, ETHICSOC 182, PHIL 82, POLISCI 182, PUBLPOL 182)
  - PHIL 152: Computability and Logic (PHIL 152)
  - PHIL 167D: Philosophy of Neuroscience
- Philosophical Analysis and Empirical Cognitive Science
  - **PHIL 167D: Philosophy of Neuroscience**
  - **PHIL 181: Philosophy of Language (PHIL 281)**
  - PHIL 186: Philosophy of Mind (PHIL 286)
- Formal Methods and Computational Methods
  - CS 151: Logic Programming
  - CS 154: Introduction to Automata and Complexity Theory
  - CS 161: Design and Analysis of Algorithms
  - CS 229: Machine Learning (STATS 229)
  - CS 238: Decision Making under Uncertainty (AA 228)
  - LINGUIST 130A: Introduction to Semantics and Pragmatics (LINGUIST 230A)
  - LINGUIST 180: From Languages to Information (CS 124, LINGUIST 280)
  - **PHIL 152: Computability and Logic (PHIL 152)**
  - **PHIL 154: Modal Logic (PHIL 254)**
  - **PSYCH 204. Computation and Cognition: the Probabilistic Approach**
  - **PSYCH 209: Neural Network Models of Cognition**
  - PSYCH 221: Image Systems Engineering
  - PSYCH 242. Theoretical Neuroscience (same as APPPHYS 293)
  - PSYCH 249: Large-Scale Neural Network Modeling for Neuroscience (CS 375)
  - PSYCH 253: Advanced Statistical Modeling
- Formal Methods and Empirical Cognitive Science
  - CS 229: Machine Learning (STATS 229)

- ECON 178: Behavioral Economics
- LINGUIST 130A: Introduction to Semantics and Pragmatics (LINGUIST 230A)
- **LINGUIST 180: From Languages to Information (CS 124, LINGUIST 280)**
- PHIL 154: Modal Logic (PHIL 254)
- PHIL 181: Philosophy of Language (PHIL 281)
- PSYCH 204. Computation and Cognition: the Probabilistic Approach
- PSYCH 209: Neural Network Models of Cognition
- PSYCH 221: Image Systems Engineering
- PSYCH 242. Theoretical Neuroscience (same as APPPHYS 293)
- PSYCH 249: Large-Scale Neural Network Modeling for Neuroscience (CS 375)
- PSYCH 253: Advanced Statistical Modeling
- Computational Methods and Empirical Cognitive Science
  - **CS 147: Introduction to Human-Computer Interaction Design**
  - **CS 229: Machine Learning (STATS 229)**
  - CS 448B: Data Visualization
  - **LINGUIST 130A: Introduction to Semantics and Pragmatics (LINGUIST 230A)**
  - LINGUIST 180: From Languages to Information (CS 124, LINGUIST 280)
  - PHIL 167D: Philosophy of Neuroscience
  - PSYCH 164: Brain Decoding
  - PSYCH 204. Computation and Cognition: the Probabilistic Approach
  - PSYCH 209: Neural Network Models of Cognition
  - PSYCH 221: Image Systems Engineering
  - PSYCH 240A: Curiosity in Artificial Intelligence (EDUC 234)
  - PSYCH 242. Theoretical Neuroscience (same as APPPHYS 293)
  - PSYCH 249: Large-Scale Neural Network Modeling for Neuroscience (CS 375)
  - PSYCH 253: Advanced Statistical Modeling