# BHA-Logic & Computation

## Bachelor of Humanities and Arts (BHA)

### Dietrich College (DC) Concentration in Logic & Computation                81 units (minimum)

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Students in the program take a common core of courses in logic, methodology, and computer science, together with an associated seminar in their senior year. The individual focus is achieved by selecting a sequence of four advanced and closely related courses. It is in this area of focus (or specialization) that students write their senior thesis under the supervision of a faculty member.

The resulting education in logic, analytic philosophy, mathematics, statistics and computer science enables students to pursue professional careers or graduate study. The analytic and communication skills developed in the major support a wide range of career choices, including those among the fields of technology, business and law. Fields of graduate study for which students are well prepared include, for example, computer science, cognitive science, philosophy, logic and linguistics.

BHA students take at least 9 courses in their DC concentration, for a minimum of 81 units. A completed DC Concentration Declaration Sheet must be approved by the concentration advisor and submitted to the BXA office by spring mid-semester break of the student's sophomore year. BHA students who are admitted through internal transfer must have chosen a DC concentration at the time of their application, which serves as declaration.

### Prerequisites

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| 80-211 | Logic and Mathematical Inquiry (Recommended prior to 21-127) | 9 |
| 15-112 | Fundamentals of Programming and Computer Science | 12 |
| 21-127 | Concepts of Mathematics | 12 |

### Logic & Computation Core                                                          (5 courses, 51 units)

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| 15-122 | Principles of Imperative Computation | 12 |
| 15-150 | Principles of Functional Programming | 12 |
| 80-150 | Nature of Reason (Spring, Freshman or Sophomore year) | 9 |
| 80-310 | Formal Logic | 9 |
| 80-311 | Undecidability and Incompleteness | 9 |

### Logic & Computation Electives                                      (3-4 courses,  30 units minimum)

Bearing in mind prerequisites, Logic & Computation students must complete at least three advanced courses in areas that use logical and computational tools, such as philosophy, computer science, linguistics, mathematical logic, psychology or statistics. The sequence of courses, mostly at the 300-level, must be selected in consultation with the concentration advisor.