

## Category A – Logic and Numbers for Rational Thinking

### Catalog description

The courses in this category emphasize the use of symbols as a means of expressing complex thoughts and information lucidly and accurately. Many involve computational and mathematical operations – that is, the use of mathematics as a symbolic language where each element and rule of operation is defined very clearly in order to obtain precise understanding. Similarly, the remainder of the courses which may be taken to fulfill this requirement stress precise, logical approaches to reasoning; for example, the study of those aspects of philosophy involving the exposition of abstract ideas.

### Commonalities among the courses

Courses in Category A stress precise, logical approaches to reasoning, in the context of one or more of the following:

- mathematical models
- problem-solving strategies
- logical discourse
- algorithmic reasoning
- logical reasoning
- formal expressions of complex thoughts

### Learning objectives

All Category A courses will have one or more of the following learning objectives. For each course, that objective or set of objectives forms a significant focus of the course.

1. Students will be able to build, interpret, and use mathematical models
2. Students will be able to solve problems, including problem formulation, solution, and interpretation of the resulting answers.
3. Students will be able to apply algorithmic reasoning to aid in problem solving.
4. Students will be able to apply logical reasoning to aid in problem solving.
5. Students will be able to apply logical reasoning to aid in understanding and analyzing discourse.