Reasoning Abstractly Objectives

1. Reasoning Abstractly (i.e., Philosophy, Mathematics, and Computer Science) Courses satisfying this requirement focus on critical and analytical reasoning about non-empirical, abstract concepts, issues, theories, objects, and structures. Students in these courses should learn to understand and evaluate abstract arguments and explanations, analyze abstract concepts and solve abstract problems.

Interpretive Statement

Though all theoretical disciplines other than the three to which this common inquiry area is restricted involve abstract reasoning, only these latter three disciplines (a) involve a relatively high degree of abstraction and (b) employ primarily highly abstract methods and study primarily highly abstract objects. Moreover, though courses in other disciplines have philosophical, mathematical, computational, and logical elements, only courses in these three disciplines make such elements their primary focus. Finally, the GE committee should not assume that every course in these three disciplines would qualify as abstract reasoning courses. Only courses in these disciplines involving attention to formal methodology (argument, analysis, evaluation, problem-solving) would be adequate. So, for instance, courses that merely summarize philosophical views would not qualify.

David's draft outcomes

Students will demonstrate skills in critical and analytical reasoning. They will be able to understand and evaluate abstract arguments and explanations, analyze abstract concepts and solve abstract problems. This will include:

- distinguishing arguments from non-arguments
- recognizing premises, conclusions, and the relationships between them
- identifying the forms of arguments
- identifying and understanding fallacies
- constructing strong and valid arguments

Jim's proposed student learning objectives

1. Recognition: Students can identify instances of abstract deductive reasoning about relatively abstract objects (in the form of arguments, explanations, proofs, analyses, modeling, or processes of problem solving) and can distinguish premises from conclusions (or their analogues).

2. Construction: Students can construct an instance of valid deductive reasoning about relatively abstract objects (in the form of arguments, explanations, proofs, analyses, modeling, or processes of problem solving).

3. Evaluation: Students can distinguish valid forms of deductive reasoning about relatively abstract objects (in the form of arguments, explanations, proofs, analyses, modeling, or processes of problem solving) from invalid and/or fallacious forms of reasoning.