

# Organization

**Instructor:** Professor Robert Gilman. Office: Kidde 227. Office hours Monday, Thursday 1-2pm and by appointment.

**Contact:** Please send email directly to [rgilman@stevens.edu](mailto:rgilman@stevens.edu) (<mailto:rgilman@stevens.edu>). The Canvas facility for sending questions to the instructor does not seem to work well.

**Text:** Richard Jeffrey and John P. Burgess, Formal Logic: Its Scope and Limits, 4th edition, McGraw-Hill, 2006.

**Course Description:** Introduction to first order logic and to fundamental discoveries about the nature of mathematics which have emerged in the last hundred years.

**Course Objective:** To provide an understanding of mathematical reasoning which will be of value for future studies including mathematics, computer science, and philosophy.

**Course Outcomes:** After finishing the course, students should be able to convert English statements to logical notation and vice versa, define valid and sound arguments, and carry out proofs in first order logic.

## Syllabus

Weeks 1-2.	Propositional calculus; truth tables and valid inferences; conditionals.
Weeks 3-4.	Truth trees; decidability, soundness and completeness
Weeks 5-6.	Quantification of a single variable; models, truth.
Weeks 7-8.	Multiple quantifiers; compactness.
Weeks 9-10.	Equality and functions.
Weeks 11-12.	Theories of arithmetic; nonstandard models.
Weeks 13-14.	Kolmogorov complexity, undecidability and incompleteness.

## Grading

Your course score, a number between 0 and 100, will be computed from homework (60%), midterm (20%) and final exam scores (20%). Course scores will be converted to letter grades as indicated. Letter grades may be raised at the instructor's discretion.

Conversion of course score to letter grade

[0-60)	[60-65)	[65-68)	[68-72)	[72-75)	[75-78)	[78-82)	[82-86)	[86-90)	[90-100)
F	D	C-	C	C+	B-	B	B+	A-	A

## The Honor System

Enrollment into the undergraduate class of Stevens Institute of Technology signifies a student's commitment to the Honor System. Accordingly, the provisions of the Stevens Honor System apply to all undergraduate students in coursework and Honor Board proceedings. It is the responsibility of each student to become acquainted with and to uphold the ideals set forth in the [Honor System Constitution](http://web.stevens.edu/honor/documents/constitution.pdf) (<http://web.stevens.edu/honor/documents/constitution.pdf>). More information about the Honor System including the constitution, bylaws, investigative procedures, and the penalty matrix can be found online at <http://web.stevens.edu/honor/> (<http://web.stevens.edu/honor/>).

The following pledge shall be written in full and signed by every student on all submitted work (including, but not limited to, homework, projects, lab reports, code, quizzes and exams) that is assigned by the course instructor. No work shall be graded unless the pledge is written in full and signed.

"I pledge my honor that I have abided by the Stevens Honor System."

### Reporting Honor System Violations

Students who believe a violation of the Honor System has been committed should report it within ten business days of the suspected violation. Students have the option to remain anonymous and can report violations online at [www.stevens.edu/honor](http://www.stevens.edu/honor) (<http://www.stevens.edu/honor>)