

## Syllabus

### Overview

This class studies current approaches to static and dynamic program analysis, including approaches to dynamic visualization.

We will primarily study papers and tools in this area. Students in the class are expected to present and lead the discussion on at least two papers and present at least two tools.

Each student will take part in a term project.

### Staff Information and Meeting Times

Instructor: Dr Godmar Back ([gback@cs.vt.edu](mailto:gback@cs.vt.edu))

Class website: <http://people.cs.vt.edu/~gback/cs6304/>

The class website will be the primary means of communication. It contains a reading list for this class and a schedule.

Class meets Tuesday and Thursday as determined.

### Prerequisites

An undergraduate compilers course will be helpful.

### Grading

Grading is based on:

- the in-class presentations you give (at least 2)
- your tool demonstrations
- your in-class participation
- your project performance. I will provide feedback at two formal milestones during the semester.

### Possible Topics

Dynamic approaches

Runtime instrumentation & monitoring, isolation

Static approaches

Type-based & constraint-based approaches

Specification-based approaches, including specification inference and mining

Ad-hoc approaches

Debugging Tools

Model Checking

Visualization tools such as JIVE