Coding Standards.

For : COP 3330.
Object oriented Programming (Using C++)
http://www.compgeom.com/~piyush/teach/3330

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Coding Standards

- Compile cleanly (no warnings)
  - Use multiple compilers. gcc/icc suites are installed.
- Makefiles are required for each project.

Coding Standards

- Use of hg is mandatory. (version control)
  - "The palest of ink is better than the best memory"
  - Don't break the build. The code in the version control system (hg) should always compile.

Code Review

- Re-Read code. More eyes will help make better quality. Read code from good programmers. You'll learn and benefit.
- It's best to do code reviews in writing, a simple e-mail can suffice.

Correctness

- Correct is better than fast.
- Simple is better than complex.
- Prefer clarity over cuteness.
- Write code for people first, then machines.

Optimization: Making it fast.

- "*Premature optimization is the root of all evil*". Don't optimize prematurely.

- Remember, "*It is far easier to make a correct program fast than to make a fast program correct*".

Global variables.

- Minimize global and shared data.
  - Example. You are not allowed to use "static" keyword in your code (till asked).
  - Information Hiding: Don't expose internal information from an entity that provides an abstraction.

Coding Style

- Prefer compile and link time errors to run time errors.
- Use "const" proactively.
- Avoid macros.
- Avoid Magic numbers.
- Declare variables as locally as possible.
- Always initialize variables.

Coding Style

- Avoid long functions (Max number of lines in a function = 25). Each line to be less than 80 characters.
- Make header files self-sufficient.
- Always write "#include" guards.

In the end…

- Your software should be:
  - Expandable
  - Maintainable
  - Understandable
  - Stable
  - And preferably built/tested/reviewed by more than one person…