

Programming in C++

You will need...

- **Programming Environment**

MS Visual C++ Express (<http://www.microsoft.com/express/download/>)

Dev C++ (<http://www.bloodshed.net/dev/devcpp.html>)

- **Source Code**

Write your own from scratch

Adapt Chris' programs (<http://staff.bath.ac.uk/abscjkw/ComputerPrograms/>)

- **An Idea of a Program to Write**

3D Pinned Truss Analysis

Finite Element Analysis of Plane Stress

2D Finite Difference Analysis of Heat Flow

Particle Systems

Dynamic Relaxation

Chris will go
through these
next week

Paul's Tips for “Good” code

- Structure

- Think carefully and **plan** the hierarchy of functions before you start

- Do the bare minimum first to get something working and **test as you go**

- Variables

- Try to **avoid global** constants and variables

- Use ALL_CAPITALS for constants

- Use InitialCapitals for global (or important) variables

- Use lower_case for local variables

- Use sensible and **self-explanatory names** for all variables and functions

- Formatting

- Use **tabs** to indent blocks of code

- Be consistent with formatting of indentations and spaces to **aid searching**

- Put a comment at the start of every function explaining its input and output

- Put **comments everywhere**