Project for the Numerical Course: ATSC409/EOSC511/ATSC506

The project should be the solution numerically of a interesting problem. For graduate students it may be directly related to your research. It should not be too complicated (no analysis of full 3-dimensional solutions of the Navier-Stokes equations) nor trivial.

We are happy to help you select a project. Set-up a time to come and talk to us. Undergrads we have a list of recommended/suggested projects.

The first step is a project proposal: see the schedule for due dates. The proposal should include an introduction to the science of the problem, including appropriate references, and what methods you plan to use and why. Two pages long, single typed and upto one figure.

It will be marked on:

1. The write-up itself, clarity, referencing, completeness, brevity etc
2. Method choice and justification
3. Explaining the science behind your problem.

The finished project is presented two ways: both as a report, about 10 pages, see marking scheme below and as a presentation: here the point is to "teach" your peers what you did. It is okay to skip some detail for clarity and interest (the detail can go in the written report).

Both the graduate and undergraduate projects are marked based on the same criteria. Note however that the graduate project is a much larger piece of work (worth 50% of the course) whereas the under-grad project is aimed at 36 hours of work (worth 30% of the course).

The projects are marked on the following 5 criteria, each has equal weight.

1. The write-up itself, clarity, referencing, completeness, brevity etc
2. Method choice and justification
3. Implementation (making it work)
4. Understanding the numerics (this could include looking at stability or accuracy or speed of computation or something else)
5. Understanding the science (whatever is relevant to your problem).

Presentations are marked on:

1. Form: Introduction, Body, Summary
2. Clarity : Clear slides, nice explanations
3. Content : Actually says something about the science/numerics
4. Interestingness

Presentations are 10 min + 3 min for questions + 2 min change over. There are marks for asking your peers two good questions.