SOURCES OF INFORMATION

I am including this here because I regularly encounter students doing their projects, at the *end* of the course, who do not know some or all of this. You will certainly need this for your projet, but should also find it useful throughout the course.

College Library.

Imperial College has an excellent library. Use it. Get to know how to find your way around it — both physically (it's a good idea to go there regularly, and you may well find it a useful place to work) and electronically, via the catalogue. Get to know how to check whether the Library has something you want, where to find it if it does, etc. You should be shown all this on a Library course for new students.

The Internet.

You are all well used to using the Internet, which you have all grown up with. It is ideal for searching for a topic. Often, one gets too many hits to be useful. If so, e.g. when using Google, try searching for *two* key phrases, thus: "keyphrase1" "keyphrase2". This usually cuts things down to manageable numbers; using three key phrases nearly always does, in my experience.

The problem with the Internet is that the quality control is weak to non-existent. *Never* take something from the Internet on trust — check it, using e.g. something from the Library.

If you cite something from the Internet, give a URL or DOI.

MathSciNet.

MathSciNet is the electronic version of *Mathematical Reviews (MR)*. This is invaluable. It is what professional mathematicians use all the time. I have been regularly horrified to supervise project students who have never heard of it, so I am making sure that stops: **you have heard of it now**.

Favouritise the MathSciNet search facility, so as to get it in one click.

One can search by title, but the usual way to search is by name. E.g., to search for works by Joe Bloggs, under Author enter "Bloggs, J*" (* here is a wildcard: it will give everything by an author with surname Bloggs and first initial J; I am lucky here: Bingham, N* gets me uniquely).

MathSciNet lists work in *reverse chronological order*, in pages of 20.

One can search for, say, books by Bloggs, J*, or works by Bloggs, J* and

Jones, K*, etc.

One of the most useful things with MathSciNet is being able to search *forwards in time*. The pdf of a review will list (top right-hand corner) everything that cites it (under 'From reviews' and 'From references'). One can search backwards in time from the references in the article (often included below the review — or, if the College Library has it, you can consult the original).

arXiv.

From the early 2000s on, most authors have put their work on the *arXiv*, usually on submission rather than waiting for publication (while with MathSciNet, one has to wait for the reviewer to review, which is often months after publication). This
(i) gets one's work out there, with a date-stamp on it;
(ii) makes one's work accessible to people who do not have access to a library that subscribes to a particular journal, say.
arXiv references (given on the first page, vertically in the left-hand margin) have the format arXiv:yymm.mnopq (e.g. arXiv:1709.12345 = paper 12345, September 2017).

Homepages.

When one becomes interested in the work of a particular author, it is always worth having a look at his/her homepage. One can usually find this knowing, say, the university and department, and then searching for the surname in the staff list, or by Googling.

Different authors make different amounts of use of their homepage. I myself put everything up there — papers, talks, lecture notes, the lot. I am lucky: Googling Nick (or Nicholas, or N. H.) Bingham gets me in one click.

Referencing.

In your project, always give full references for everything you use (if only to avoid plagiarism). Use a standard format, e.g.:
Journal article: Author's name, Title of paper, *journal title, in 'slant' type* **volume number, in boldface** (year), m-n (pages *from* and *to*);
Book: Author's name, *Book title in slant*, publisher (place of publication optional), year (edition number if there is more than one).
List references in **alphabetical order** – **not** the order you cite them in, or higgledy-piggledy (I saw both this year – that's enough!). NHB