

How to get a PhD

To get a PhD you have to

- find out what is needed
- have the determination to carry it out
- take responsibility for your progress
- have a degree of single-mindedness

Whats Needed

To get a PhD you must write a thesis – about 100 pages. It should present a unified body of work such as could reasonably be achieved on the basis of three/four year's postgraduate study and research. The following criteria will be used to judge it. It should

- be **ORIGINAL** making a significant contribution to knowledge or understanding in the field of study
- contain material **WORTHY OF PUBLICATION**
- **REFLECT COMPREHENSIVE APPRECIATION** of relevant literature
- **EXERCISE CRITICAL JUDGEMENT** with regard to both the candidate's work and others in the same general field
- be **LITERATE** with **ADEQUATE REFERENCES**

GOOD NEWS!!!

**You do NOT
have to make an
enormous
breakthrough
which
shakes the
foundations
of mathematics**

Thesis Assessment

It will be read by TWO examiners appointed by the university one internal and one from another university. Usually the internal examiner will not be your supervisor

There will be an oral VIVA VOCE examination in which you will have to defend the material in your thesis and show general knowledge of the work and its wider context

Interacting with your supervisor

- **Meet regularly**
- **Prepare for your meetings - come to each meeting with:**
 - **List of topics to discuss**
 - **Plan for what you hope to get out of the meeting**
 - **Summary of what you have done since your last meeting**
 - **Notes from your previous meeting**
- **Always be honest about your progress**

- **Always show your supervisor the results of your work as soon as possible**
- **If you disagree with your supervisor, state your objections or concerns clearly and calmly**
- **You should break down writing your thesis into manageable stages**

Caveats

- **All research involves risk – your project can fail**
- **Research takes much longer than you feel it ought**
- **Your rate of progress will vary wildly**
- **Do not spend all of your time on literature review**
- **Do not lose contact with your supervisor**
- **You will have to deal with isolation and loneliness**

Become a Critical Attentive Reader and Listener

You must make the transition from the passive mode of learning that traditional lecture courses encourage to an active and critical learning style. When you read a paper or listen to a research talk, ask yourself these questions:

- **What was really going on there – what was the motivation for doing this work and what exactly was accomplished?**
- **From where did the author seem to draw the ideas?**
- **What would be a reasonable next step to build upon this work? What questions are left unanswered?**
- **What ideas from related fields might be brought to bear upon this subject?**
- **Can I use any of these techniques in my work ?**

Daily Life

- **You need constant feedback. Discuss your research with anyone who will listen – even when they do not understand**
- **Explain your work to fellow students – if you cannot explain it there may be a reason**
- **If you are afraid of public speaking, volunteer to give lots of talks.**
- **Explaining and writing down your ideas is the best way to debug them.**

“The researches of many commentators have already thrown much darkness on this subject, and it is probable that, if they continue, we shall soon know nothing at all about it”

Mark Twain