Induction Meeting for New Research Students

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Phases, Rules and What to Expect
Minimum and maximum periods

- Minimum period (cannot submit thesis before this ends): PhD 3 years, MPhil 2 Years, MSD 1 Year
- Maximum period (must submit thesis by its end): minimum period + 1 (completion) year
Detailed Study Programme for PhD

Year 1
- Quarter 1
- Quarter 2
- Quarter 3
- Quarter 4
- *Key Review: PhD Confirm.
- QPR or PhD Confirm.
- Review Board or QPR
- QPR

Year 2
- Quarter 5
- Quarter 6
- Quarter 7
- Quarter 8
- Progress Review Board
- QPR
- *Progress Review Board
- QPR or Progress Board

Year 3
- Quarter 9
- Quarter 10
- Quarter 11
- Quarter 12
- Board
- QPR
- Board
- Submission!!!

Completion Year
- Quarter 13
- Quarter 14
- Quarter 15
- Quarter 16

(Beware: milestones are currently being revised)
All PhD students are registered initially for an MPhil/PhD

Confirmation of PhD status comes in the 2nd year

Confirmation is not automatic, but based on sufficient progress

Initial phase (months 1–9): deciding the topic, what, how, why, literature review, initial investigation

Middle period (months 10–29): bulk of experimental or theoretical work, literature review gets refined

Final period (months 30–??): finish off experimental and theoretical work, thesis writing starts and thesis is completed
Structures and Roles

- You
- Supervisor
- Supervisory Board
- Director of Postgraduate Research Studies
- Head of Research/Head of the Department
- Research Students’ Progress and Management Committee
- Dean of Postgraduate Research and Education, and Deputy Dean (Education)

For more info see the University’s Code of Practice (COP) for PGR students at

http://www.essex.ac.uk/about/governance/documents/policies/cop-postgraduate_research_students.pdf
You

- Read the COP and departmental documentation (sign form)
- Prepare for meeting with supervisors and boards and attend them
- Keep in regular contact with your supervisor
- Do agreed work
- Read and digest relevant literature
- Understand what is and is not plagiarism and learn how to properly acknowledge and cite other people’s work
- Attend relevant training courses
- Keep a log/record of activities and write reports on progress
- Submit the thesis within the required period and prepare for the examination
You

- Write articles (conferences and journals)
- Attend and give presentations at conferences (you have £250 per year for travel)
Your supervisor

▶ Provides guidance (appropriate volume and standard of the research)
▶ Provides feedback on written work and oral presentations
▶ Advises on target conferences and journals
▶ Identifies training needs
▶ Regular meetings: COP requires meetings at least once a month but School suggests at least once every 2 weeks (also send regular updates by email).
▶ Must agree holiday periods (ideally no more than 2 weeks)
▶ Potential issues and problems
▶ Remember s/he is the expert, but after some point you will start becoming an expert yourself...
Your Supervisory Board

- Structure: Chair person + Supervisor + Staff member
- The role of your board: Advice on progress, not a detailed critique of your research (but often you get some good ideas)
- Regular meetings: twice a year (at least)
  - You need to submit a week or two in advance
    - Progress Summary Form
    - Report (whose length depends on which stage you are)
  - Usual format: 20 minutes presentation + 20 minutes discussion + 10–20 minutes board member discussion
- Board completes Board Report Form which student obtains after the RSPMC meeting has taken place
- Student submits Response to the board report (optional)
- Board Report and Response → RSPMC
RSPMC

- Monitors progress and makes recommendations to Deputy Dean (Education)
- Reports to the Dean (at least once a year)
- May determine departmental policy
- Recommendations to the Dean:
  - Permitted to proceed
  - Registration status change (confirm PhD, change to MPhil, minimum period extended, move to completion etc.)
  - The student discontinues his/her studies
Thesis

- The thesis will be a big task, especially for non-native English speakers, but it is a lot easier if you have already material published or at least written up.
- Make sure you give drafts of chapters one or two at a time to your supervisor for comments as soon as they are ready. Don’t expect your supervisor to fix the English for you nor to give you instant feedback. It may take up to 10 minutes per page!
- There is a length limit: 80,000 words for a PhD.
Viva

- The viva is an oral examination, with two examiners (one internal to the school/university, one from a different university) and the student. The supervisor is not present.

- Vivas typically last between 2 and 4 hours. Depending on examination style (long vivas don’t mean things are going badly!)

- You are often asked to start by highlighting the key results and contributions to science/engineering/knowledge of your work.

- Then you are asked questions (like the issues referees will highlight about your papers and the questions you get asked in seminars and talks).

- You will typically be expected to be able to discuss and defend your work.
Successful PhDs and Beyond
What’s a PhD?

Ideas?

From the QAA web site

“A candidate is examined on the basis of a thesis ... which must demonstrate the research question, critically evaluate the extent to which it has been addressed, and make an original contribution to knowledge”

How much knowledge? What type? How novel?

Doctoral degrees are awarded to students who have demonstrated:

- the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the discipline, and merit publication

- a systematic acquisition and understanding of a substantial body of knowledge that is at the forefront of an academic discipline or area of professional practice

- the general ability to conceptualise, design and implement a project for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems

- a detailed understanding of applicable techniques for research and advanced academic enquiry.

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Area of the research

- Choose an area where there is reasonable hope to be able to generate new knowledge
- Identify an issue where insufficient research has been done or where it has taken a wrong turn and you can rectify this
- Pick a problem which is worth solving
- Form a set of research questions to which you want to find an answer
How?

- Your supervisor will guide you
- Read lots of papers and books (go both for breadth and depth, keep notes, put papers in a bibliography, use Google Scholar as a guide)
- Don’t become paralysed/depressed by thinking that everything has already been done. It hasn’t!
- Attend seminars, have discussions
- Use our PGRclinics server (see video at http://dces.essex.ac.uk/staff/rpoli/PGR-material/, accounts/passwords for you will be created soon...)
- Keep notes of ideas (your own and those of others) and open issues you find as you read
How?

▶ Try things out
  ▶ Only reading in the first part of the PhD is boring
  ▶ Try small test implementations to gain insight and vary activity
  ▶ In any case, do not leave the reading behind
Doing the research

- Research is difficult: many things will not work, some will.
- What to do upon failure:
  - Be persistent in trying. Try to understand reasons for failure and use the new knowledge to direct your search.
  - However, sometimes one takes a dead end, and needs to backtrack.
  - Don’t go dark for months. Discuss lack of progress with your supervisor. Failing is normal. Changing direction is often needed. What you have learnt will still be with you.
What to do upon success:

- When you hit onto something, explore that both in depth and breadth. First find a path, then widen it and make it a motorway!
- You need to document your work by keeping good records, because this will be required for publication and for the thesis.
- Use version control, dropbox, onedrive,... to backup all previous versions for both experimental results, articles and eventually the thesis.
- It is not just a question of collecting data. You need to analysed them to decide on the next steps in the research.
Doing the research

General strategies:

▶ Meet your supervisor regularly, send him email updates when you do not meet.

▶ Share some virtual space (version control, Dropbox or Google Drive folder, ...) with your supervisor for data and articles.

▶ Try to learn as much mathematics, probability and statistics as is suitable for your area. This will make it easier to analyse the data and produce models of what’s going on.

▶ Theory (even back-of-an-envelope style) and sophisticated statistical analysis always adds respectability to work. Practical work with theory to back it up has a much higher chance of publication. Practice these skills regularly.

▶ Learn to produce informative graphics and plots of the highest quality. A picture is worth 1000 words.
Doing the research

General strategies:

▶ Doing a PhD also means becoming an independent researcher. It takes time. Try to be independent but not too independent: see your supervisor

▶ Being independent often means working on your own

▶ Collaborating with others (supervisor, PhD students, other members of research group, outside researchers) is a great way of learning from each other and of keeping motivation high and avoiding loneliness, but it isn’t always possible.

▶ Visiting other labs is a great learning experience: try to arrange that.
Publishing and presenting

- The ultimate test is whether your work is published or of publishable quality in international journals and conferences.
- You need to learn how to write research papers:
  - The paper must send good vibes from the beginning. It is important that readers believe you know what you are talking about. They will more likely see your ideas and experiments in a positive light, and accept the paper.
  - You need to make sure papers are cosmetically indistinguishable from the papers of others: citations, English, structure, statistical tests, plots, equations... (mimicry works!)
  - Make sure you give a good summary of the state of the art and try to cite all relevant literature (reviewers are authors!)
  - Improve your English: get help, never make the same mistake!
  - Papers and the thesis are not necessarily a record of how things happened (with all the wrong turns included). People like reading a good story. Make sure your papers tell one.
You need to learn what it means for work to be of sufficient quality and volume for a top quality conference publication and a top journal publication.

- Read the papers from the conference/journal and compare the amount and depth of work (and structure, etc.)
- Listen to your supervisor and your supervisory board
- Get feedback from reviewers, and follow that feedback (even when you think they are wrong)
- Get feedback at conferences, and follow that.
Publishing and presenting

- Target conferences/special issues well in advance of the deadline (beware: sometimes special issues are actually harder to get into than ordinary issues).
- Writing up the thesis is a big and daunting task: having papers and reports previously written is an excellent start.
- Prepare posters and talks thinking that less is more: it is more important to send a smaller message which everyone understands (they will then go on to read your paper and cite it) than a big message that no-one understands.
- To increase citations, make sure all your papers are available electronically in some Web site.
Publishing and presenting

► Do dry runs of your talks and prepare good answers for questions.
► Get experience in our CSEE conference (it may become possible to pay for attendance using Proficio funds!)
► The school has limited funding for travel and conferences. Try to make the best of it by getting travel studentships from conferences. Offer to act as a helper.
► Always ask yourself if the stated scope of the conference/journal matches your article.
► When you feel you have a strong article, be ambitious.
► Don’t be tempted by non-reputable publishers who will contact you all the time offering open-access publications. Serious journals and conferences have serious people running them and committees of respectable people.
Getting involved in the research community

- When you are ready, your supervisor will start making your name as a reviewer for journals or as a programme committee member for conferences (you must have published some articles yourself before this is reasonably acceptable).
- When asked to review papers, do it competently and quickly: people will then be more likely to invite you in various editorial roles.
- Offer to run tutorials in your specialised area, offer to organise workshops at conferences (initially team up with some authority, e.g., your supervisor).
- Offer to give departmental seminars.
- Propose special issues on your specialist topic in journals (team up).
Finally...

Good Luck!

Questions?