Postgrad guide

J.C. Schoeman

January 11, 2024

Contents

1	Intr	oduction	1						
2	Information and arrangements								
	2.1	MEng versus PhD.	2						
	2.2	Publications	3						
	2.3	Timeline	3						
	2.4	Office hours	3						
	2.5	Weekly meetings	4						
	2.6	Research group meetings	5						
	2.7	Co-supervision	5						
3	ng overview	6							
	3.1	Literature review	7						
	3.2	Learning the necessary techniques	7						
	3.3	Implementing the solution	8						
	3.4	Writing a paper	8						
	3.5	Receiving feedback	9						
	3.6	Refining the solution	9						
	3.7	Thesis and feedback	10						
	3.8	Hand-in and examination	10						
4 PhI		D overview 1							
	4.1	Research proposal	12						
	4.2	Journal articles	12						
	4.3	Dissertation and examination	12						
	4.4	Upgrading from MEng	13						

Chapter 1 Introduction

This document is written for my postgraduate students. Its purpose is to explain various aspects of completing an MEng (Research) or PhD in Electronic Engineering. These aspects include timelines, research outputs, weekly meetings, supervisor feedback and examination procedures. I expect that all my students read through the relevant chapters as necessary. Certain aspects are according to my own preference and I am happy to receive feedback on where things can be improved. Unless otherwise specified, everything that is applicable for an MEng is also applicable for a PhD.

In general, postgraduate studies are the student's own responsibility. The role of the supervisor is (a) to propose an initial topic, (b) to provide guidance along the way and (c) to make sure that all outputs are of an appropriate standard. The student should then refine the topic by doing their own research, investigate different solution methodologies and complete the project themselves. The nature of any research project is by definition uncertain. This is because the problem would already be solved if the exact course of action was known from the start.

Unlike with undergraduate studies, there are no modules, tests and intermediate assignments to help you gauge your progress. Ultimately, you only submit a single thesis (or dissertation in the case of a PhD) on which your entire degree depends. You should therefore make sure that you are as confident as possible in that document, and by implication in the work that you did over the course of your studies. This guide is there to help you as far as possible. If you read it carefully and follow the advice contained within it, you are on your way to a successful postgraduate journey.

Chapter 2

Information and arrangements

Before getting to the typical timeline for an MEng (Chapter 3) or PhD (Chapter 4), it is useful to introduce and discuss some general information and practical arrangements.

2.1 MEng versus PhD

An important clarification is the difference between an MEng and a PhD:

- For a PhD, the student needs to make a substantial *novel contribution* to their particular field. This means that you need to do something that (a) has not been done before, (b) is of significance and (c) is communicated effectively.
- For an MEng, the student does not have to make such a novel contribution, but can use existing knowledge and techniques to show that they have *mastered* their field. However, a contribution would still make a better impression, especially if you want to receive a Cum Laude.

Whereas an MEng often covers broader aspects of a specific application, a PhD focusses more on developing or improving a general technique. The difference is also clear when looking at the purpose of the literature study in each case:

- For a PhD, the literature study should clearly identify the gap in (or limitations of) the current literature. The student should then motivate why their contribution fills this gap.
- For an MEng, the literature study should rather identify the most promising existing approaches that can be used for addressing the research aim. The student should then use these to design the best possible solution.

For the formal definitions, requirements and processes for MEng and PhD, refer to the official documents at eepostgrads.sun.ac.za. Also make sure that you meet all other requirements such as demi responsibilities and completing the plagiarism short course.

2.2 Publications

At the heart of all academic research lie publications, where the two main categories are international conferences and peer-reviewed journals. Writing papers or articles is the best way to ensure that your work is noticed by the broader research community. It also reduces the chances that you do work of a high quality that either goes unnoticed or that is a repetition of what someone else has already done. The choice of the specific journal (or conference) is usually influenced by many factors, such as the nature and scope of the work and the timelines and scope of the journal.

Apart from the minimum requirements for an MEng or PhD, there are additional reasons for prioritising publications during your postgraduate studies:

- 1. It is the best way to measure progress and to set intermediate deadlines.
- 2. It focusses your efforts by revealing where the gaps in your arguments lie.
- 3. The feedback from your supervisor will be more substantial than for a thesis.
- 4. It is better to receive criticism from reviewers as opposed to from examiners.
- 5. It looks good on any CV, but particularly for a career in academia.

Especially when it comes to the final examination, the more publications you have, the better.

2.3 Timeline

The nominal time for completing an MEng is two years and for completing a PhD is three years, assuming that you are registered as a full-time student. You can take up to one year longer to complete each degree (although most bursaries will not pay for this), but after that you need special permission to re-register. The minimum time that you can take for each degree is one year shorter than the nominal time, although this happens very rarely.

Each year, there are two opportunities for hand-in: To graduate in December, you need to submit your PhD dissertation by 1 August or your MEng thesis by 1 September. To graduate in March of the following year, you need to submit either of these by 1 November. Any submission later than this will mean that you need to register for another year and will only graduate in December of that year. It is also important to note that your supervisor needs to approve the final submission.

2.4 Office hours

As a full-time student, you will receive a dedicated workstation in a postgraduate lab. This will include a computer setup, as well as the necessary infrastructure to complete your project. The default office hours are 08:00 to 17:00, five days a week. However, these hours are flexible as long as you stick to a typical work week of 40 hours. This will not be checked, but anything less will very likely affect your timeline negatively.

If you would like to work from home for whatever reason, it is necessary to discuss this. I do not like it when a student is not making progress and I find out later that they do not come to the lab regularly. There are many advantages to working at the lab instead of from home, which include:

- 1. You are surrounded by a productive work environment.
- 2. You can learn from senior students who are working on similar problems.
- 3. You have a better understanding of the context where your project fits in.
- 4. You benefit from social aspects such as new friends and recreational activities.

All of these benefits increase the chances that you will complete your project successfully and on time.

Most postgraduate labs close between mid-December and mid-January. This corresponds to the university's summer holiday and many lecturers take leave over this period. However, the labs are not physically locked, which means that you could work during this period if you wanted to. In addition to these four weeks, you have another 15 days of "leave" that you can use throughout the year. It is important to inform me when you want to use this, but generally I will not mind as long as your progress is satisfactory.

2.5 Weekly meetings

By default, I schedule a one-hour, weekly meeting with each of my postgraduate students. These meetings will usually run from mid-January to mid-December each year, except when I am on leave or out of office. The purpose of such a meeting is threefold:

- 1. To receive an update of what the student did in the past week.
- 2. To answer any technical or administrative questions that the student has.
- 3. To check that the student has an appropriate plan for the coming week.

Depending on the stage of the project, however, the focus and length of these meetings may vary. For example, initial meetings could be longer to discuss the necessary context as well as new technical concepts. In contrast, meetings are typically shorter towards the end of the project and focus mainly on writing and supervisor feedback.

The most important thing is to make sure that you use these meetings effectively. You should therefore come prepared with what you want to discuss, bring along the necessary resources and make sure we stay on track. The default mode is in-person in my office. The advantages of this is that we do not bother other people in the lab and that we can use pen and paper when appropriate. However, it is often useful to discuss software or results. In that case, you could bring your laptop or USB drive along, but we could alternatively schedule an online meeting for the benefit of screen sharing. Lastly, we could also meet in the lab if it is the most appropriate.

2.6 Research group meetings

In our research group (or lab), we expect each student to give one presentation per year about their project. The main purpose of this presentation is to tell the rest of the lab what you are working on. In your first year, the focus will typically be more on what you plan to do. At this point it is good to get inputs from other students or supervisors about things that they think will work well or not. Towards the end of your project, this presentation will instead be more on what you ended up doing and the results that you obtained. This is then a good opportunity to see what types of questions people still have ahead of your final examination.

It is important to take these presentations seriously. They are usually attended by 20 to 30 fellow students, lecturers and occasional guests and it is always good to make a positive impression. I suggest that you start preparing for such a presentation about three weeks in advance, since it takes time to make appropriate slides that explain the work in a correct yet understandable way. This is also a good opportunity to practice public speaking while nothing major is on the line. These trial runs are especially useful if you have to present at a conference at a later stage.

2.7 Co-supervision

Although it is possible that you have multiple supervisors, there will be only one main supervisor. This is the person responsible for the admin arrangements regarding your project and who ultimately makes the final calls. If I am the main supervisor, I will manage the project in the same way as if I were the only supervisor. The co-supervisor's main purpose is to add additional value to meetings and research outputs, typically because they have expertise regarding certain aspects of the project. In my opinion, a co-supervisor can therefore decide how involved they want to be regarding things like feedback and attending meetings.

Chapter 3

MEng overview

A typical timeline for an MEng (Research) is shown in Table 3.1. This is only a rough overview of the phases and you have to set up your own detailed plan specific to your project. However, falling behind on any of these objectives can have a snowball effect, which you will need to counteract somewhere down the line. The most important deadline is the final hand-in of the thesis and one usually works back from this to make sure everything occurs on time.

Year	Months	Task	Description		
1st	January -	Literature review	Refine the research aim and investigate the		
	February		most relevant solutions		
1st	st March - Learn technique(s)		Learn the necessary theory by focussing on		
	April		simpler (but related) problems		
1st	May -	Implement solution(s)	Design and test the solution(s), investigate		
	August		additional research questions and improve		
1st	September -	Write paper	Document the best solution thoroughly and		
	October		refine into conference paper		
1st	November -	Paper feedback	Submit to supervisor for feedback and		
	December		incorporate once received		
2nd	January -	Refine solution	Finalise the solution and apply to additional		
	March		example(s)		
2nd	April -	Write thesis	Revisit literature review, update internal		
	June		documentation and consolidate		
2nd	July -	Thesis feedback	Submit to supervisor for feedback and		
	August		incorporate once received		
2nd	September	Thesis hand-in	Submit thesis with supervisor's		
			approval		
2nd	October -	Examination	Wait for examiner's reports and make		
	November		revisions as necessary		

Table 3.1 :	Typical ti	imeline for	an MEng,	assuming	the	thesis is	s submitted	for
December	graduation.	. For March	n graduatior	n, you have	e two	additio	nal months.	

It is important to note that different phases will overlap. For example, you typically refine your solution and literature review while writing your paper or improve your thesis while waiting for feedback. In addition, certain phases will need to be revisited as you make progress on others. The timeline in Table 3.1 is therefore an attempt to capture all the necessary elements for an MEng project (with deadlines to help you gauge your progress), as opposed to a set plan that should be followed exactly. If you are able to make progress ahead of this schedule, it is even better. The rest of this chapter will elaborate further on each phase.

3.1 Literature review

The first phase of your project is always a thorough literature review. This refers to doing your own research to (a) narrow down and better understand your research aim and to (b) investigate existing solutions to related problems. There are three main reasons for the latter: Firstly, you will need to compare your eventual solution to existing solutions based on appropriate criteria. Secondly, one of the best ways to design a solution is to build on what others have done. Lastly, it is very useful to motivate a given experiment, metric or technique by referring to existing literature.

As for the types of sources that you can use for your research, it is best to only cite research articles and textbooks. That being said, Wikipedia is often a good place to start reading about a new concept, field or technique. Once you know the basic terminology, you can then perform better keyword searches to find more credible sources. One of the best tools for such searches is Google Scholar.

At this stage of your project, it is not yet necessary to write a complete literature review as required for an article or thesis. If you do this too early, it is still difficult to know which direction your project will take and therefore you run the risk of writing about unrelated literature. If you start too late, however, much of this research will no longer be fresh in your memory by that time. A good idea is to make rough notes about every article you read that you think could be relevant. This could be a pargagraph, bullet points or even keywords that you can use as a starting point later on. This is a good time to start using IATEX as well, although you do not need to worry about formatting or templates yet. Another useful software tool for managing research and references is Mendeley.

3.2 Learning the necessary techniques

One of the most important conclusions from your literature review should be which techniques look promising for solving your specific problem. This choice of technique is usually also influenced by your supervisor's expertise and might be part of the initially proposed topic. It is important to choose an appropriate solution, instead of something that is trendy. To make an informed decision, you first need a good understanding of the mathematical details of your problem.

Once the most promising techniques have been identified, you need to learn all the theory that is necessary to apply them. Although it is tempting to apply a technique directly to your final problem, there are benefits to starting with a simpler problem and building systematically:

- 1. Lower complexity means it is easier to get started.
- 2. Existing solutions means you know what outputs to expect.
- 3. Fewer variables means you can easily understand the effect of each.
- 4. Earlier versions means it is easier to debug when things stop working.

It is, however, recommended to choose intermediate problems that are related to the final problem. This means that you will be able to reuse things like mathematical models, software, etc.

3.3 Implementing the solution

The majority of your project will be spent on designing, implementing and testing your solution. This is the most important component, since it is very difficult to write an article or thesis later on if you do not have much to write about. Depending on the details of your project, this will involve things like setting up simulation environments, algorithm design, running computer experiments, assembling a physical system and running practical tests. As with many other aspects of research, this phase is iterative and often follows a trial-and-error-based approach.

Although an MEng project is focussed on solving one central problem, it adds value if you can answer additional research questions in the process. In particular, rather than only showing how well your final solution works (and placing this within the context of existing literature), it provides additional insight if you compare multiple solutions or variations thereof. The key is to find the balance between investigating side objectives and staying focussed. This is an area that your supervisor should be able to help with.

3.4 Writing a paper

The minimum requirement for an MEng is that you have written at least one conference paper that could be submitted, according to the satisfaction of your supervisor. You therefore do not need any publications to complete the MEng degree successfully, even to be eligible for a Cum Laude mark. Some students therefore first finish their thesis and then refine this into a conference paper while waiting for the examiner reports. However, I would strongly advise against this. The main reasons for instead writing a conference paper earlier are the same as outlined in Section 2.2. Additionally, this is the determining factor when I decide if an upgrade from MEng to PhD is an option, as outlined in Section 4.4.

Before starting with the paper, it is recommended to first write a detailed, technical documentation of your solution. In fact, you can start working on this document earlier and should then update it as you develop aspects of the solution that you do not expect will change significantly. The purpose of the documentation is:

- To keep a record of technical details that you may forget over time.
- To provide a concrete resource during the weekly meetings.
- To communicate the problem, solution and results to your supervisor in an organised manner.
- To provide a starting point for your paper or thesis.

Since this document is only for those who attend the weekly meetings regularly, the research motivation and related literature does not need to be discussed unless necessary.

Once the internal documentation is complete, it is relatively easy to refine it into a format that is appropriate for a conference paper. You will then have to add the introduction, literature review and conclusion.

3.5 Receiving feedback

Since your supervisor's name appears on any paper that you write, I insist on at least one cycle of internal feedback before you submit it. The purpose of the feedback is to help you improve the paper based on my impressions. You should therefore only send me the draft once it is complete, you are 100% happy with it and it has been thoroughly proofread. The effort that you put into writing the paper will be reflected in the effort I put into reviewing it.

When giving feedback, I will use a PDF editor (such as Okular) to make annotations and will send it back as soon as possible, usually within one month depending on my workload at the time. On that note, the second semester is generally a lot busier than the first, especially towards the end of the year with many examinations. You should therefore make sure I receive anything you need feedback on well ahead of time to avoid any unnecessary lag.

I recommend that you also use Okular to view the feedback and that you delete the comments as you address them. The "Reviews" tab in Okular is especially handy to make sure you do not miss anything. In my opinion, there are three levels of feedback, which need to be handled accordingly: Firstly, small editorial corrections (such as grammar and typos) can be made as you read through the feedback. Secondly, larger revisions (such as structure and content) might require more time and that you carefully evaluate what the underlying issue is based on multiple comments. Thirdly, it is possible that re-writing alone will not be enough and that additional work (such as proofs and experiments) is required.

Since I put in a lot of effort when giving feedback, I expect that you address everything as best as you can. The remainder of the points that you either do not understand or do not agree with you will need to discuss with me in our weekly meetings. Although it is ultimately still your paper, your supervisor has useful experience that will increase the chances of acceptance. The student must still take full responsibility for the final version of the paper. Not receiving feedback on a particular section, sentence or figure does not necessarily mean it is perfect. I often do not mark the same mistake (e.g. capitalisation, abbreviations, etc.) more than once. You should therefore fix all similar occurrences as well, especially in future documents that you send for feedback.

3.6 Refining the solution

After receiving and incorporating the feedback on a paper, all authors need to decide together whether it should be submitted or delayed. This decision will largely depend on the novelty of the work and the anticipated improvements to the solution. The rest of the timeline regarding the paper is therefore more uncertain and will run in parallel to the MEng timeline in Table 3.1. In either case, the next phase for the latter is to finalise your solution by revisiting all the aspects discussed in Section 3.3 and adding scope to your work. This is also the time when you need to fill in all the remaining gaps in your arguments, specifically those highlighted by your supervisor and possible reviewers. You will also need to extend the experiments and examples that you consider to show that your research has broader implications.

3.7 Thesis and feedback

The most important output of your MEng studies is your thesis. You therefore need to start writing well before the deadline and give it the attention it deserves. Fortunately, you should have a good starting point by this stage in the form of your internal documentation and conference paper. If you do an excellent project, but the write-up is not up to standard, this will affect your final mark severely.

Similarly to an article, you must submit a draft version of your thesis to your supervisor for feedback. Since this is a much longer document, I prefer to receive it in stages: First, all the chapters on the problem and existing work (four months before hand-in), then the chapters on your solution (three months before hand-in), and finally the chapters on the results and conclusion plus the abstract (two months before hand-in). This way, you can work on the next chapters while I review the previous ones. This also provides intermediate deadlines to make sure you are on track to finish on time. When sending chapters for feedback, send the entire document in PDF format and tell me which chapters to look at.

3.8 Hand-in and examination

Once the supervisor's feedback has been addressed, you can submit your thesis for examination. This is usually done on Sunlearn through Turnitin, where your supervisor needs to sign the generated similarity report. Once the paperwork is in order, the thesis is sent to the examiners that have already been appointed by your supervisor (and approved by the Faculty Board of Engineering). For the exact details and arrangements of the MEng examination process, refer to the official documents on eepostgrads.sun.ac.za. In general, you will have two examiners, where one is internal to the department and the other is external to the university. An oral examination is usually not necessary, provided that you have given a sufficient public presentation on the majority of your work and that none of the examiners request one.

Chapter 4 PhD overview

A typical timeline for a PhD is shown in Table 4.1. Since it includes many of the same phases as an MEng, make sure that you first read Chapter 3 before proceeding. The difference between an MEng and PhD has also already been covered in Chapter 1. In general, a PhD student should work more independently than an MEng student, especially when it comes to identifying potential contributions. In the rest of this chapter, I will only discuss the new phases (such as the research proposal) as well as the process for upgrading from an MEng to a PhD.

Year	Months Task		Description	
1st	January - Literature review		Identify a research aim that is both novel	
	March		and relevant	
1st	April -	Write proposal	Organise literature, formulate proposed	
	June		solution and prepare the documents	
1st	July -	Proposal feedback	Submit to supervisor for feedback and	
	August		incorporate once received	
1st	September	Proposal hand-in	Submit proposal to candidature panel	
			and make revisions as necessary	
1st	October -	Implement solution(s)	Design and test the solution(s), investigate	
	December		additional research questions and improve	
2nd	January -	Write article $\#1$	Document the best solution thoroughly and	
	February		refine into journal article	
2nd	March -	Article feedback	Submit to supervisor for feedback and	
	April		incorporate once received	
2nd	May -	Extend solution	Improve on the solution, add capabilities	
	August		and pursue additional contributions	
2nd	September -	Write article $#2$	Document the additional work and refine	
	October		into conference paper or journal article	
2nd	November -	Article feedback	Submit to supervisor for feedback and	
	December		incorporate once received	
3rd	January -	Refine solution	Finalise the solution and apply to additional	
	February		example(s)	
3rd	March -	Write dissertation	Revisit literature review, update internal	
	May		documentation and consolidate	
3rd	June -	Dissertation feedback	Submit to supervisor for feedback and	
	July		incorporate once received	
3rd	August	Dissertation hand-in	Submit dissertation with supervisor's	
			approval	
3rd	September -	Examination	Wait for examiner's reports, prepare oral	
	October		and make revisions as necessary	

Table 4.1: Typical timeline for a PhD, assuming the thesis is submitted for December graduation. For March graduation, you have three additional months.

4.1 Research proposal

In your first year of PhD studies you will register without a topic. This is despite the fact that you and your supervisor should have already discussed what you will be working on. The reason for this is that all PhD topics need to be officially approved by an appropriate candidature panel. Refer to the official documents at eepostgrads.sun.ac.za for the exact details. The objective of the first six months is therefore to prepare a research proposal about what exactly you plan on doing for your PhD, so that you can register with a topic from the second year onward.

The proposal should be about 30 pages long and deserves as much attention as an MEng thesis. The main difference is that the proposal is forward-looking, so there should be a greater emphasis on the literature review as opposed to a solution or preliminary results. In particular, you need to identify a research aim that would lead to a novel contribution, by identifying a gap in the existing literature. Of course, it would make a better impression if you have already made some progress on the solution by the time that the proposal is submitted.

As for a thesis or article, it is necessary to submit the research proposal to your supervisor for feedback. This follows the same process as always, so make sure you send the complete draft to me well in advance. The official deadline that is communicated by the Faculty of Engineering is the first day of the second semester. Once you have incorporated the feedback, the proposal (plus all the additional documents) is submitted to the candidature panel. An oral is usually not necessary, unless requested by one of the panel members.

4.2 Journal articles

The minimum publication requirement for an MEng is different than that for a PhD. In the latter case, you need to have submitted at least one journal article before submitting your dissertation. However, I highly recommend that you do not delay this unnecessarily and that you should rather aim to get a journal article accepted before handing in your dissertation. The reason for this is that the criterion for a journal article and a PhD dissertation is exactly the same, namely that you have made a novel contribution to your field. An examiner could therefore wonder why this work has not been published yet, which is not what you want. In addition, all the benefits of pursuing earlier publications listed in Section 2.2 still apply.

4.3 Dissertation and examination

Most of the information regarding the write-up and examination for an MEng applies to a PhD as well. One major benefit in the case of a PhD is that you should have more documents available that you can use for your write-up. In particular, you can use your research proposal as a starting point for the first two chapters of your dissertation. Furthermore, each of your articles can form a couple of middle chapters. In fact, if you have enough articles you are eligible for a PhD by publication. Refer to the official documents for more information about this. Unlike for an MEng, an oral is mandatory as part of a PhD examination. This consists of a public presentation followed by a closed question session with the examiners, your supervisor and a convenor. For a PhD, you have three examiners instead of two, where one needs to be an international expert. You also do not receive a specific mark for a PhD. The outcome is either a pass of a fail. Depending on the examiner reports, it is usually necessary to make revisions to the dissertation as well before it can serve on the Faculty Board of Engineering for final approval.

4.4 Upgrading from MEng

There are two possible processes for upgrading from an MEng to a PhD. In the one case, the examiners for your MEng can recommend that the project be upgraded. You can then choose whether you want to take the MEng mark or continue with the same topic as a PhD student in the next year, provided that your supervisor approves of this. In the other case, your supervisor can recommend an upgrade during your second year of MEng and before you write your thesis. For the formal requirements and processes, refer to the official documents at eepostgrads.sun.ac.za.

In general, I will only consider the first option (of an upgrade after an MEng examination) in exceptional cases, since this comes with a lot of additional work and admin. Although the second option (of an upgrade based on the supervisor's recommendation) makes more sense to me, I will still only recommend it in certain cases. The main reason is that there is a big difference between an MEng and a PhD, and you need to be sure you know what you are signing up for. In particular, the time frame for a PhD is longer and more uncertain since the work needs to make a significant novel contribution. The potential for an upgrade therefore does not depend on the ability of the student but rather on the nature of the project.

A typical timeline for an upgrade is shown in Table 4.2. Note that the first year is identical to that for an MEng as shown in Table 3.1, except that the conference paper is replaced with a journal article. This is because I will only tell you if I think an upgrade is a possibility based on the first article that you write. If that is the case, you should then rather submit this article to an appropriate journal. Based on the feedback that we get from the reviewers a few months later, we can then decide if you should write a proposal or not. Although you technically only need to have submitted a journal article to be eligible for an upgrade, my personal rule is that you need to have a journal article accepted. This way, we have the confirmation from external reviewers that the work to date is of an appropriate standard.

The second year of your MEng is then very similar to the first year of a normal PhD as shown in Table 4.1. The main differences are that you have already started with your solution and that you have already written one article. The next step is then to write a research proposal as described in Section 4.1. Although in this case you will need to convince the candidature panel of two additional things:

1. That you have already made a novel contribution.

2. That you only require a small amount of additional work to complete a PhD.

In addition, an oral is required as part of the upgrade process.

Year	Months Task		Description	
1st	January -	Literature review	Refine the research aim and investigate the	
	February		most relevant solutions	
1st	March -	Learn technique(s)	Learn the necessary theory by focussing on	
	April		simpler (but related) problems	
1st	May -	Implement solution(s)	Design and test the solution(s), investigate	
	August		additional research questions and improve	
1st	September -	Write article $\#1$	Document the best solution thoroughly and	
	October		refine into journal article	
1st	November -	Article feedback	Submit to supervisor for feedback and	
	December		incorporate once received	
2nd	January -	Literature review	Confirm that the research aim is both	
	March		novel and relevant	
2nd	April -	Write proposal	Organise literature, formulate proposed	
	June		solution and prepare the documents	
2nd	July -	Proposal feedback	Submit to supervisor for feedback and	
	August		incorporate once received	
2nd	September	Proposal hand-in	Submit proposal to candidature panel,	
			prepare oral and make revisions	
2nd	October -	Extend solution	Improve on the solution, add capabilities	
	December		and pursue additional contributions	
3rd	January -	Write article $#2$	Document the additional work and refine	
	February		into conference paper or journal article	
3rd	March -	Article feedback	Submit to supervisor for feedback and	
	April		incorporate once received	
3rd	May -	Refine solution	Finalise the solution and apply to additional	
	August		example(s)	
3rd	September -	Write article $#3$	Document the final work and refine into	
	October		conference paper or journal article	
3rd	November -	Article feedback	Submit to supervisor for feedback and	
	December		incorporate once received	
4th	January -	Finalise publications	Make revisions and resubmit as necessary	
	February			
$4 \mathrm{th}$	March -	Write dissertation	Revisit literature review, update internal	
	May		documentation and consolidate	
4th	June -	Dissertation feedback	Submit to supervisor for feedback and	
	July		incorporate once received	
4th	August	Dissertation hand-in	Submit dissertation with supervisor's	
			approval	
4th	September -	Examination	Wait for examiner's reports, prepare oral	
	October		and make revisions as necessary	

Table 4.2: Typical timeline for an upgrade from MEng to PhD, assuming the thesis is submitted for December graduation. For March graduation, you have three additional months.

If the upgrade is successful, you can register in your third year as a PhD student with a topic. If it is unsuccessful, you continue with the MEng as normal. In the latter case, you should convert your proposal to a thesis and extend it to include any additional work that would still be necessary. If you only submitted your PhD proposal on the deadline of 1 September, there will not be enough time for this and receiving feedback to make the hand-in for the March graduation. This means that you will complete the MEng in three years. That is another reason why you should only pursue an upgrade if appropriate and should try to get ahead of the timeline if possible. Also note that if you no longer want to pursue a PhD after the upgrade, you will need to downgrade again and complete the MEng as normal. Since the Faculty of Engineering counts the two years of MEng as the first year of a PhD, the typical timeline in Table 4.2 is four years in total. The last two years are similar to the last two years in Table 4.1, except that you have more time for publications.