PhD Students in the Gas Processing Division: Program Structure & Expectations

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Outline

1. Milestones and timelines
2. Minimum tasks for confirmation of candidature
3. Candidature report & oral defence
4. Rules for writing well
Milestones & timelines

• 4 years candidature limit, 3 years scholarship

• Graduate research school (GRS) has universal milestones
  – STUDENT’S RESPONSIBILITY TO MEET GRS ON TIME

• Gas Processing Division (GPD) has additional milestones
  – More specific than GRS milestones
  – Build upon GRS milestones
  – All must be achieved on time (GPD + GRS)
# Milestone schedule

Dates from enrolment date (assumes full time student)

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Submitted to Supervisors</th>
<th>Submitted to GRS</th>
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</thead>
<tbody>
<tr>
<td>Research Proposal</td>
<td>5 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Candidature Report</td>
<td>11 months</td>
<td></td>
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<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Annual Report</td>
<td>11 months</td>
<td>12 months</td>
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<tr>
<td>Oral Defence</td>
<td>12 months</td>
<td></td>
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<tr>
<td>Confirmation of Candidature</td>
<td>12 months</td>
<td>12 months</td>
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<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Annual Report</td>
<td>23 months</td>
<td>24 months</td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Annual Report</td>
<td>35 months</td>
<td>36 months</td>
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</tbody>
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Milestone requirements

• Specific requirements from GRS or other GPD documents.

• Most milestones in Year 1 to establish whether you’re likely to be able to meet standard required for PhD.
  – Candidature report & oral defence are most important
  – Annual reports can also be used to address inadequate progress

• Research proposal must be approved by GRS Board
  – Complete drafts of research proposal & annual reports due to supervisors 1 month before GRS deadline
  – Partial drafts not likely to be considered – discuss outline & preparation during 3/4 weekly meetings

• Important to refer to “Rules for writing well”
  – Practice technical writing early
Confirmation of Candidature

- **UWA policy:** 1\textsuperscript{st} year students on probation until candidature confirmed

- **GRS requires a list of tasks to be completed for candidature to be confirmed**
  - Agreed between student and supervisor
  - Specified at & submitted with research proposal
  - Due to be completed by 1\textsuperscript{st} anniversary: signed off & dated

- **Failure to complete all tasks results in discontinuation of PhD enrolment**
Candidature Tasks

1. Attendance (>90%) and participation in weekly meetings of Centre for Energy’s Gas Processing Division.

2. Complete Centre for Energy gas handling safety training, and laboratory-specific safety inductions.

3. Prepare and submit Research Candidature Report to Centre for Energy PhD Review Panel. Document to demonstrate candidate has:
   - Adequate knowledge of background theory & subject matter.
   - Reviewed of past and current relevant research literature.
   - Present results obtained to date with adequate evaluation & discussion
   - Updated the research plan and schedule, with refined objectives and scope definition.
Candidature Tasks

4. Pass oral defence of Research Candidature Report conducted by Centre for Energy PhD Review Panel. (Held 2 to 4 weeks after report submission to panel.)

5. Complete Centre of Energy approved training course in HYSYS or equivalent process simulator (VMGSim, ProMax).

6. Complete Centre of Energy approved LabVIEW course

7. Demonstrate proficiency in the use of the software tools EndNote and Scopus.

8. Demonstrate proficiency in the analysis software relevant to your research topic.

9. Complete Centre for Energy training & demonstrate proficiency in use of experimental hardware & software relevant to your research topic.
Candidature Report

• Report intended to build significantly upon Research Proposal
• Due 1 month before Confirmation of Candidature due
• About 8000 words long
  – Sufficient number of key figures to communicate your message
  – References used and formatted appropriately
  – Free of plagiarism (direct or indirect)
• Structure of report
  – 1 page Summary of research goal & motivation
  – Fundamentals: demonstrate understanding of base concepts
  – Review of Research Literature: analyse (don’t just summarise) key papers in terms of significance to your research
  – Initial Research Results: present & explain your results to date
  – Forward Research Plan…
Candidature Report & Oral Defence

• Forward Research Plan
  – What your contribution to knowledge will be & how it’ll be achieved
  – Likely research challenges that need to be overcome
  – Likely specific outcomes: titles of 3 papers you will generate

• Oral Defence
  – 15 to 20 minute presentation summarising content of report
  – Consider your audience: what do they want to hear?
    • Panel likely to be knowledgeable about topic & familiar with your expt.
    • Want to be convinced you:
      – understand the topic well;
      – understand the specific details of research analysis required;
      – have thought in detail about what will be required to achieve PhD.
Rules for Writing Well

Rules about the ‘Building Blocks’ of Writing

1. Read things back to yourself, preferably aloud, sentence by sentence and be critical about whether each sentence actually sounds correct. If it sounds wrong to your ear there is probably a grammatical error.

2. Ensure each sentence has a subject, a verb and, usually, an object. If you don’t know what these terms mean then look them up now.

3. If in doubt, shorten the sentence. Try not to use the same word twice in a sentence.

4. Capital letters do not occur randomly and full-stops are needed at the end of each sentence (including in numbered or bullet-point lists if nothing else is used at the end of each point). Do not start sentences with numbers or acronyms.
Rules for Writing Well

Rules about the ‘Building Blocks’ of Writing

5. Do not have (sub-)sections that contain only one paragraph. Do not have paragraphs that contain only one sentence.

6. Paragraphs should deal with one idea and that idea should be identified clearly in the first sentence of the paragraph. The paragraph’s lead sentence must tell the reader what that paragraph is about.

7. Define your acronyms (DYA) the first time the phrase being abbreviated is written.

8. Avoid changes in tense within any paragraph and minimise the number of times the tense changes throughout a document. Use the past tense to describe work you did before starting to write (such as experiments).
Rules for Writing Well

Rules about the ‘Building Blocks’ of Writing

9. “However” is not a conjunction and should not be used to join to sentences. Use a full stop or a semi-colon and then start the second part of the sentence with “however”.

10. Keep the spelling and grammar checkers turned on and do not ignore them. If the software is unsure about anything, you should think about whether it has a good point. However, the converse is NOT true: just because the spelling or grammar checker thinks something is OK does not mean that it is.
11. Consider the logical structure and flow of your document – at the paragraph level – before, during and again after you have finished writing it. Be self-critical: does the flow make sense to someone other than you who may not know the history or detail of your project.

12. Do not attempt to convey the actual, historical record of how you came to the point in time you are writing about. Instead convey the story in the most logical, objective and clearest terms possible.

13. Try not to start writing the main text until you know how the story ends. It’s much more efficient if you know the story from beginning to end in your mind before you start writing.
Rules for Writing Well

Rules about Structure and Style

14. Use outlines and complete all figures before writing the bulk of the document. Confer with co-authors about the outline and regularly thereafter.

15. Show a figure instead of writing a thousand words.

16. Be quantitative. Avoid generalisations, global statements and phrases containing value-judgements: distinguish in your mind the difference between an opinion and a fact and avoid the former. Being quantitative usually simplifies the language required.

17. **Avoid repetition** or telling the reader that you have already written about a point. If you want to make two slightly different points about a topic put them in the same paragraph or in consecutive paragraphs. When preparing outline be mindful to avoid repetition.
18. There is a trade-off between accuracy and clarity. You must get the balance right. Often this can be achieved by not trying to discuss detail that is effectively superfluous to the message you are trying to convey. (Hence the importance of knowing the message you actually want to convey.)

19. Avoid writing in the first person.
Thank you