1. Introduction

This document is intended to be a guide for the Chairs of oral examination committees in the Department of Physics. It contains many excerpts from the University Calendar, [http://calendar.ualberta.ca/preview_entity.php?catoid=6&ent_oid=760](http://calendar.ualberta.ca/preview_entity.php?catoid=6&ent_oid=760), and from section 8 of the “FGSR Graduate Program Manual,” [http://uofa.ualberta.ca/graduate-studies/about/graduate-program-manual](http://uofa.ualberta.ca/graduate-studies/about/graduate-program-manual). Examination Chairs are invited to refer to these document for more detail.

Useful information can also be found in "A Handbook for Graduate Studies in Physics," at [http://uofa.ualberta.ca/physics/graduate-studies/information-for-current-students-and-supervisors](http://uofa.ualberta.ca/physics/graduate-studies/information-for-current-students-and-supervisors)

At the end of this document is information for supervisors and students that is specific to preparing for a PhD candidacy exam.

<table>
<thead>
<tr>
<th>Procedures common to all oral examinations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSc final exam</strong></td>
</tr>
</tbody>
</table>

### 2.1. Synopsis of an oral examination

Oral exams consist of three parts:

- a) an oral presentation by the candidate;
- b) a question period by the examiners;
- c) a deliberation period.

#### 2.2. Things to watch out for

- a) Questions or discussions that are not directly related to the purpose of the exam should be avoided.
- b) During the question period, avoid discussions among the members of the examining committee. Examiners may make clarification statements, but they should not engage in any discussion or argument among themselves during the question period.
- c) In the question period, questions should be addressed to, and answered by, the student exclusively.
- d) In all cases, the question period is conducted with only the student and members of the examination committee present. The Dean of the Faculty of Graduate Studies (FGSR) or a designate may also be present during part or the entirety of the exam.

#### 2.3. Duties of the Chair of an examination committee

The Chair is responsible for good conduct of the exam and for reporting the examination result to the Department’s graduate studies office. The Chair may or may not be one of the examiners. When not one of the examiners, the Chair will not ask questions to the candidate and will not take part in assessing the student. It is recommended that the Chair not be one of the examiners.

#### 2.4. Synopsis of an oral examination

Oral exams consist of three parts:

- a) an oral presentation by the candidate;
- b) a question period by the examiners;
- c) a deliberation period.

#### 2.5. Things to watch out for

- a) Questions or discussions that are not directly related to the purpose of the exam should be avoided.
- b) During the question period, avoid discussions among the members of the examining committee. Examiners may make clarification statements, but they should not engage in any discussion or argument among themselves during the question period.
- c) In the question period, questions should be addressed to, and answered by, the student exclusively.
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The Chair is responsible for good conduct of the exam and for reporting the examination result to the Department’s graduate studies office. The Chair may or may not be one of the examiners. When not one of the examiners, the Chair will not ask questions to the candidate and will not take part in assessing the student. It is recommended that the Chair not be one of the examiners.

#### 2.7. Synopsis of an oral examination

Oral exams consist of three parts:

- a) an oral presentation by the candidate;
- b) a question period by the examiners;
- c) a deliberation period.

#### 2.8. Things to watch out for

- a) Questions or discussions that are not directly related to the purpose of the exam should be avoided.
- b) During the question period, avoid discussions among the members of the examining committee. Examiners may make clarification statements, but they should not engage in any discussion or argument among themselves during the question period.
- c) In the question period, questions should be addressed to, and answered by, the student exclusively.
- d) In all cases, the question period is conducted with only the student and members of the examination committee present. The Dean of the Faculty of Graduate Studies (FGSR) or a designate may also be present during part or the entirety of the exam.

#### 2.9. Duties of the Chair of an examination committee

The Chair is responsible for good conduct of the exam and for reporting the examination result to the Department’s graduate studies office. The Chair may or may not be one of the examiners. When not one of the examiners, the Chair will not ask questions to the candidate and will not take part in assessing the student. It is recommended that the Chair not be one of the examiners.
## 2. Procedures common to all oral examinations

<table>
<thead>
<tr>
<th>MSc final exam</th>
<th>PhD final exam</th>
<th>PhD candidacy exam</th>
</tr>
</thead>
<tbody>
<tr>
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<td>The following examination procedure should be followed:</td>
<td>the examiners.</td>
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<td><strong>2.3.1.</strong> Before the exam starts, ensure that all examiners are present.</td>
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<tr>
<td></td>
<td><strong>2.3.2.</strong> Introduce the members of the examining committee and the student to one another.</td>
<td><strong>2.9.1.</strong> Before the exam starts, ensure that all examiners are present.</td>
</tr>
<tr>
<td></td>
<td><strong>2.3.3.</strong> Declare the beginning of the exam. Introduce the student to the audience and state the purpose of the exam.</td>
<td><strong>2.9.2.</strong> Introduce the members of the examining committee and the student to one another.</td>
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<td></td>
<td><strong>2.3.4.</strong> Summarize the procedure (as described in the remainder of this document).</td>
<td><strong>2.9.3.</strong> Declare the beginning of the exam. Introduce the student to the audience and state the purpose of the exam.</td>
</tr>
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<td></td>
<td><strong>2.3.5.</strong> Ask the student to make his/her presentation. Remind the student of the duration of the presentation [= ~20']. If necessary, give the student a warning and interrupt the presentation if the time is exceeded.</td>
<td><strong>2.9.4.</strong> Summarize the procedure (as described in the remainder of this document).</td>
</tr>
<tr>
<td></td>
<td>**2.3.6.**Proceed with the closed-door part of the examination. Start the first round of questions with the external examiner, ending with the supervisor(s). Allow 10 to 15 minutes per examiner. Proceed with a second round of questions if necessary.</td>
<td><strong>2.9.5.</strong> Ask the student to make his/her presentation. Remind the student of the duration of the presentation [= ~30']. If necessary, give the student a warning and interrupt the presentation if the time is exceeded.</td>
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<tr>
<td></td>
<td><strong>2.3.7.</strong> Ask the examiners if they have any final questions or comments.</td>
<td><strong>2.9.6.</strong> Proceed with the closed-door part of the examination. Start the first round of questions with the external examiner, ending with the supervisor(s). Allow 10 to 15 minutes per examiner. Proceed with a second round of questions if necessary.</td>
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<td></td>
<td>**2.3.8.**Invite the student to make a final statement.</td>
<td><strong>2.9.7.</strong> Ask the examiners if they have any final questions or comments.</td>
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<td><strong>2.3.9.</strong> Ask the candidate to leave and initiate the closed-door deliberation.</td>
<td><strong>2.9.8.</strong> Invite the student to make a final statement.</td>
</tr>
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## 3. Procedures specific to MSc or PhD final oral examinations

<table>
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<td>The presentation should run ~20 minutes. The Chair is to inform the student, in advance, of the expected duration of the presentation. Prior to the start of a MSc or PhD final exam public seminar, the examiners should meet to review the student’s file, in a room other than the one where the presentation and exam will take place. Alternatively, the student, along with the audience, will</td>
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<td><strong>be asked to leave the room after the public seminar while the examiners review the student’s file.</strong></td>
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<td>Oral presentations are public for PhD and MSc exams. At the end of the public presentation, invite questions from the audience, other than from the examiners. Mention that these questions should be of a general nature, and aimed at clarifying aspects of the presentation. The total duration of this question period should not exceed 10 minutes. Ask the audience to leave. If the committee did not meet prior to the presentation to review the student’s file, ask the student to step out for a few minutes while his/her file is being reviewed.</td>
<td>Oral presentations are public for PhD and MSc exams. At the end of the public presentation, invite questions from the audience, other than from the examiners. Mention that these questions should be of a general nature, and aimed at clarifying aspects of the presentation. The total duration of this question period should not exceed 10 minutes. Ask the audience to leave. If the committee did not meet prior to the presentation to review the student’s file, ask the student to step out for a few minutes while his/her file is being reviewed.</td>
</tr>
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</table>

**For an MSc final oral:** The committee will review the thesis and conduct an oral examination designed to test the candidate's knowledge of the thesis subject and of related fields.

Each examiner in turn, starting with the external and ending with the supervisor(s), is asked to assess the thesis. The decision of the examining committee is based on:

- the content of the thesis,
- the candidate’s ability to defend it.

**3.1. The outcome of the examination**

The examination of the final defense will result in one of the following statements by the committee:

| a) Pass: | The thesis is accepted as is. |
| b) Pass subject to revisions: | The defense is satisfactory but changes are required to the thesis. In this case, the examining committee is not required to reconvene. *"There is no provision for a final examination to be passed subject to minor or major revisions."* |

If the examining committee agrees to a "Pass subject to revisions" for the student, the chair of the committee must provide the following, in writing within five working days, to the Dean, FGSR, the graduate coordinator and the student:

- the reasons for this outcome,
- details of the required revisions,
- the approval mechanism for meeting the requirement for revisions, e.g., approval of the committee chair or supervisor, or approval of the entire committee, or select members of the committee;
- the supervision and assistance the student can be expected to receive from committee members.
- The student must make the revisions within six months of the final examination. If the required revisions have not been made and approved by the end of the six months deadline, the outcome of the examination is a Fail.

| c) Adjourned: | The final oral examination should be adjourned in the following situations: |
| - The revisions to the thesis are sufficiently substantial | |

**For a PhD final exam:** *"The examining committee shall conduct a final oral examination, based largely on the thesis."*

Each examiner in turn, starting with the external and ending with the supervisor(s), is asked to assess the thesis. The decision of the examining committee is based on:

- the content of the thesis,
- the candidate’s ability to defend it.

**3.3. The outcome of the examination**

The examination of the final defense will result in one of the following statements by the committee:

| a) Pass: | The thesis is accepted as is. |
| b) Pass subject to revisions: | The defense is satisfactory but changes are required to the thesis. In this case, the examining committee is not required to reconvene. *"There is no provision for a final examination to be passed subject to minor or major revisions."* |

If the examining committee agrees to a "Pass subject to revisions" for the student, the chair of the committee must provide the following, in writing within five working days, to the Dean, FGSR, the graduate coordinator and the student:

- the reasons for this outcome,
- details of the required revisions,
- the approval mechanism for meeting the requirement for revisions, e.g., approval of the committee chair or supervisor, or approval of the entire committee, or select members of the committee;
- the supervision and assistance the student can be expected to receive from committee members.
- The student must make the revisions within six months of the final examination. If the required revisions have not been made and approved by the end of the six months deadline, the outcome of the examination is a Fail.

| c) Adjourned: | The final oral examination should be adjourned in the following situations: |
| - The revisions to the thesis are sufficiently substantial | |
### Procedures specific to MSc or PhD final oral examinations

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<tr>
<td>that they will require further research or experimentation or major reworking of sections, or if the committee is not satisfied with the general presentation of the thesis (that it will require a reconvening of the examining committee). In such circumstances the committee shall not propose that the student has passed, rather the committee shall adjourn the examination.</td>
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<td>The committee is dissatisfied with the student's oral presentation and defence of the thesis, even if the thesis itself is acceptable with or without minor revisions.</td>
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</tr>
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<td>Compelling, extraordinary circumstances such as a sudden medical emergency taking place during the examination.</td>
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<tr>
<td>Discovery of possible offences under the Code of Student Behaviour.</td>
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If the examination is adjourned, the committee should:

- Specify in writing to the student, with as much precision as possible, the nature of the deficiencies and, in the case of revisions to the thesis, the extent of the revisions required. Where the oral defence is unsatisfactory, it may be necessary to arrange some discussion periods with the student prior to reconvening the examination.
- Decide upon a date to reconvene. If the date of the reconvened examination depends upon the completion of a research task or a series of discussions, it should be made clear which committee members will decide on the appropriate date to reconvene. The final date set for reconvening shall be no later than six months from the date of the examination. A final decision of the examining committee must be made within six months of the initial examination.
- Make it clear to the student what will be required by way of approval before the examination is reconvened (e.g., approval of the committee chair or supervisor, approval of the entire committee, or of select members of the committee).
- Specify the supervision and assistance the student may expect from the committee members in meeting the necessary revisions.
- Advise the Dean of the department’s Faculty following the procedures established for this purpose.
- Advise the FGSR in writing of the adjournment and the conditions.
- When the date is set for the adjourned final examination, the department will notify the Dean of the department’s Faculty and the FGSR. Normally a Pro Dean attends the examination.

### d) Fail: If the final examining committee agrees that the student has failed, the committee chair shall provide the reasons for this recommendation and the department’s...
## 3. Procedures specific to MSc or PhD final oral examinations

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<th>MSc final exam</th>
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<tr>
<td>recommendation for the student’s program in writing to the Dean of the department’s Faculty and the FGSR and to the student. An Associate Dean, FGSR will normally arrange to meet with the student and with department representatives before acting upon any department recommendation that affects the student’s academic standing. A decision of the FGSR which affects a student's academic standing (e.g. termination, also known as “required to withdraw”) may be appealed by the student.</td>
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</tr>
</tbody>
</table>

### 3.2. Closing the final oral exam and signatures on the Thesis Completion form

After the deliberation period, invite the student back in the room and inform him/her of the decision of the examination committee.

#### 3.2.1. Possible outcomes of the examination are:

a) **Pass:** The thesis is approved as is. Examining committee members sign the Thesis Approval/Program Completion form immediately.

b) **Pass subject to revisions:** Members wishing to do so may sign immediately. The committee chair or supervisor withholds signature until the thesis is amended satisfactorily and all other committee members have signed. If problems arise in the amendment process, the chair or supervisor may wish to solicit opinions from the other committee members.

c) **Adjourned:** No member of the committee signs the Thesis Approval/Program Completion form.

d) **Fail:** No member of the committee signs the Thesis Approval/Program Completion form.

#### 3.2.2. The signatures on the Thesis Approval form will depend on the outcome of the exam as described above. Also note that:

- When the examination Chair is not a member of the examining committee, the Chair’s name and signature do not appear on the Thesis Approval/Program Completion form.

#### 3.2.3. Non unanimous decision

- For a MSc exam, if one of the examiners fails the student but the student passes, that examiner does not have to sign the thesis. The FGSR Graduate Program Manual states: A majority of examiners must agree to an outcome of Adjourned. All or all but one of the examiners must agree to an outcome of Pass, Pass subject to revisions, or Fail. If the Examining Committee fails to reach a decision, the department will refer the matter to the Dean, FGSR, who will determine an appropriate course of action.

- For a PhD thesis, as for a MSc defense, the dissenting committee member does not have to sign the thesis. It is stated that: A majority of examiners must agree to an outcome of Adjourned. All or all but one of the examiners must agree to an outcome of Pass, Pass subject to revisions, or Fail. If the Examining Committee fails to reach a decision, the department will refer the matter to the Dean, FGSR, who will determine an appropriate course of action.

### 3.4. Closing the final oral exam and signatures on the Thesis Completion form

After the deliberation period, invite the student back in the room and inform him/her of the decision of the examination committee.

#### 3.4.1. Possible outcomes of the examination are:

a) **Pass:** The thesis is approved as is. Examining committee members sign the Thesis Approval/Program Completion form immediately.

b) **Pass subject to revisions:** Members wishing to do so may sign immediately. The committee chair or supervisor withholds signature until the thesis is amended satisfactorily and all other committee members have signed. If problems arise in the amendment process, the chair or supervisor may wish to solicit opinions from the other committee members.

c) **Adjourned:** No member of the committee signs the Thesis Approval/Program Completion form.

d) **Fail:** No member of the committee signs the Thesis Approval/Program Completion form.

#### 3.4.2. The signatures on the Thesis Approval form will depend on the outcome of the exam as described above. Also note that:

- For PhD exams, when the external reader (or examiner if attending by teleconference) is not in attendance AND when the external examiner indicates general acceptance of the thesis AND when the outcome of the defense is “pass” or “pass subject to revisions”:
  - The external examiner's name and institution will be typed on the Thesis Approval/Program Completion form, and the chair of the examining committee will initial the external's signature line. The other examining committee members will sign the form as prescribed in this section (3.3) of the Department's examination guidelines.

- When the examination Chair is not a member of the examining committee, the Chair’s name and signature do not appear on the Thesis Approval/Program Completion form.

#### 3.4.3. Non unanimous decision

For a PhD thesis, as for a MSc defense, the dissenting committee member does not have to sign the thesis. It is stated that: A majority of examiners must agree to an outcome of Adjourned. All or all but one of the examiners must agree to an outcome of Pass, Pass subject to revisions, or Fail. If the Examining Committee fails to reach a decision, the department will refer the matter to the Dean, FGSR, who will determine an appropriate course of action.
Table 3.5 MSc or PhD final oral examination - Summary of conditions to reach a decision

<table>
<thead>
<tr>
<th>Condition</th>
<th>MSc final exam</th>
<th>PhD final exam</th>
<th>Signatures</th>
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<tbody>
<tr>
<td>Pass</td>
<td>Unanimous or all but one</td>
<td>Unanimous or all but one.</td>
<td>If not unanimous, the dissenting examiner may withhold his/her signature</td>
</tr>
<tr>
<td>Pass subject to revisions</td>
<td>Unanimous or all but one</td>
<td>Unanimous or all but one.</td>
<td>If not unanimous, the dissenting examiner may withhold his/her signature</td>
</tr>
<tr>
<td>Adjoined</td>
<td>Majority</td>
<td>Majority</td>
<td>No signatures</td>
</tr>
<tr>
<td>Fail</td>
<td>Unanimous or all but one</td>
<td>Unanimous or all but one.</td>
<td>No signatures</td>
</tr>
</tbody>
</table>

4. Procedures specific to PhD candidacy examinations

4.1. The PhD candidacy examination

The presentation should run ~20 minutes. The Chair is to inform the student, in advance, of the expected duration of the presentation. The presentation is made to the members of the examining committee only.

Prior to the start of a candidacy exam, the student is asked to leave the room while his/her file is being reviewed.

At the exam, before the question period, remind the examination committee members that the student is to be evaluated on the points as stated below in this section.

“The candidacy examination is an oral examination ... For candidacy examinations, students must demonstrate to the satisfaction of the examining committee that they possess:

1) an adequate knowledge of the discipline and of the subject matter relevant to the thesis; and
2) the ability to pursue and complete original research at an advanced level; and
3) the ability to meet any other requirements found in the department's published policy on candidacy examinations."

During the candidacy examination only minor attention should be given to the data collection. The examination should determine whether the student is adequately prepared to continue as a doctoral student.”

Also please note:

- the candidacy exam is not a pre- or mini-defense;
- contrary to common belief, it is not necessary to have a paper or two before taking the candidacy;
- emphasis must be on the points from the FGSR Grad manual excerpt quoted above, and not on the data collected or results obtained so far in the thesis project.

4.2. The outcome of the PhD candidacy examination

4.2.1. Explain that the examination committee is to evaluate the exam with one of the following statements:

a) **Pass**: The committee recognizes that the performance of the student was acceptable. In this case, "...the department shall complete the Report of Completion of Candidacy Examination form and submit it to the FGSR...Upon receipt of the form, the FGSR will add a comment of "Doctoral Candidacy Examination Completed" to the student’s central academic record, which will be reflected on the student’s transcript."

b) **Conditional Pass**: The committee considers that the student’s performance was weak. In that case, The Chair of the committee must provide the following, in writing within five working days, to the Dean, FGSR, the graduate coordinator and the student:

- the reasons for this recommendation,
- details of the conditions,
- timeframe for the student to meet the conditions,
- the approval mechanism for meeting the conditions, e.g., approval of the committee chair or supervisor, or approval of the entire committee, or select members of the committee,
- the supervision and assistance the student can be expected to receive from committee members.

Conditions are subject to final approval by the Dean, FGSR.

c) **Adjourned**: The candidacy examination should be adjourned in the event of compelling, extraordinary circumstances such as a sudden medical emergency taking place during the examination or possible offences under the Code of Student Behaviour.

d) **Fail**: The committee considers that the student’s performance was poor and not acceptable. In that case, the committee, through the Chair, should make one of three recommendations:

1. Repeat the candidacy
2. Change of Category to a Master’s program
3. Termination of the Doctoral program

"If the candidacy examining committee agrees that the student has failed, the committee chair shall provide the reasons for this recommendation and the department’s recommendation for the student’s program in writing to the Dean, FGSR, the graduate coordinator and to the student. For failed candidacy examinations,
<table>
<thead>
<tr>
<th>4.1. The PhD candidacy examination</th>
<th>4.2. The outcome of the PhD candidacy examination</th>
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<tr>
<td>an Associate Dean, FGSR, normally arranges to meet with the student and with department representatives before acting upon any department recommendation.&quot;</td>
<td></td>
</tr>
<tr>
<td>4.2.2. Starting with the examiner from outside the Department or the student's research area, ask each examiner how he/she assesses the outcome of the exam. In cases where the judgment is not unanimous, see if consensus can be reached. If no consensus is reached, however, the outcome will be decided by the majority in which case, the Committee Chair will report dissenting vote(s) to the Graduate Coordinator. The Graduate Coordinator will be responsible for making a final recommendation to FGSR.</td>
<td></td>
</tr>
<tr>
<td>4.2.3. Specific point to watch for: Avoid discussing the merit or feasibility of the research project. These points, important as they may, are to be considered by the student's supervisory committee and not the Candidacy Examination Committee. If this committee wishes, it may mandate the Chair to provide input on the research project in writing to the supervisory committee.</td>
<td></td>
</tr>
<tr>
<td>4.2.4. Non unanimous decision: “A majority of examiners must agree to an outcome of Adjourned, Conditional pass or Fail and repeat the candidacy. All or all but one of the examiners must agree to an outcome of Pass, Fail with a recommendation to terminate the doctoral program, or Fail with a recommendation to change of category to a Master’s program. If the Candidacy Committee fails to reach a decision, the department will refer the matter to the Dean, FGSR, who will determine an appropriate course of action.&quot;</td>
<td></td>
</tr>
<tr>
<td>If a student is deemed to have passed and the decision was not unanimous, the exam Chair should mention it in the report to the Graduate Coordinator.</td>
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</table>

| Candidacy examination : Summary of conditions needed to reach a decision: |
|-----------------------------|------------------|
| Pass                        | Unanimous or all but one |
| Conditional pass            | Majority          |
| Adjourned                   | Majority          |
| Fail and repeat             | Majority          |
| If the candidacy exam is repeated and the decision is fail: |
| Fail and change to MSc      | Unanimous or all but one |
| Fail and withdraw           | Unanimous or all but one |
5. PhD candidacy exam information for students and supervisors

“The candidacy examination must be held within three years of the commencement of the program in accordance with The Degree of PhD of the University Calendar. The candidacy examination must be passed no less than six months prior to taking the final examination.” (excerpt from the Calendar).

When preparing a candidacy exam, please keep in mind that:

1. the candidacy exam is not a pre- or mini-defense;
2. contrary to common belief, it is not necessary to have a paper or two before taking the candidacy;
3. emphasis must be on the points excerpted in section 4.1 of this document, and not on the data collected or results obtained so far in the thesis project.

5.1. For the supervisors: Remind the student that he/she is to produce a short document (10-20 pages) addressing the proposed research area and project. This document is to be handed in at least one week before the exam, and distributed to the examiners.

5.2. For the student:

a) Prepare a short (10-20 page) document summarizing the status of your research area and outlining your proposed contribution. This document must be distributed to the committee members no less than one week prior to the exam.

b) Prepare a 20 minute oral presentation.

c) Prepare to answer questions related to the evaluation criteria mentioned above in section 4.1 of these 'Guidelines'.

d) The following are suggested topics that you may want to include in your written document or oral presentation, and that you should be prepared to address during the oral exam period:

- General presentation of the research area:
  - Status of the field.
  - Main science questions being pursued in the area.
  - By whom and where the research is being done?
  - What methodology is being used (compare different approaches if possible pointing out constraints, advantages and disadvantages).
  - What infrastructure is required?

- General project objectives:
  - What significant contribution do you plan to make?
  - How does it relate to the research done elsewhere?
  - Who and where is the competition, if any.
  - What impact do you anticipate on the field?

- Timetable. Present a timetable with milestones for the completion of your project
  - For each task, estimate a duration, identify difficulties and possible alternative approaches.
  - Make a realistic estimate of the date of completion.