

**Department of Electrical and Computer Engineering  
University of Alberta**

**Effective December 2021**

## MSc Final Examination

### Examining Committee:

- Minimum of three faculty members consisting of:
  - The Supervisor
  - A faculty member from the ECE Department
  - An arm's-length faculty member. Although this faculty member may be from within the ECE Department, it is recommended that this faculty member be from outside the department.
- FGSR describes an arm's-length examiner as follows: must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the university, nor be related to the student or supervisor(s).
- The examination must be chaired by a faculty member of the Electrical and Computer Engineering Department who is at arm's length from the supervisor and the student. The Chair cannot be one of the examiners.

### Timeline:

- Four weeks prior to the examination, the supervisor of the student should contact the Graduate Student Advisor with details of the oral exam. A *Notice and Approval of Oral Examination Committee* must be approved by the Department.
- Three weeks prior to the final examination, the examining committee members must receive the final copy of the written thesis.
- The student must give their public seminar at the beginning of the exam.

### Procedure for the final examination:

- The Chair of the examination ensures that proper introductions are made and reviews the procedures to be followed, as noted below.
- The student gives a 20 to 25 minute oral presentation of his or her thesis work.
- Questions are solicited from the audience members (other than the examining committee members.) Questions from the audience shall be limited to at most 10 minutes.
- The audience is asked to leave, and the student is asked to step out of the room while the committee reviews his or her academic file and background.
- The student is asked to return to the room, and questioning from the examining committee commences.

- There are normally two rounds of questions. Each round starts with the arm's-length member. Questions are then asked by the ECE Department faculty member, and finally the supervisor.
- In each round of questions, each examiner shall have approximately 10 minutes to ask questions.
- After questioning has concluded the student is invited to make a final statement. The student is then asked to leave the room for the examining committee to deliberate and reach its final decision.

Outcome:

- The final decision shall be one of the following:
  - Pass. No revisions are required.
  - Pass with revisions. This means that the student has satisfactorily defended the thesis but the thesis document requires changes that are minor in substance or of an editorial nature.
  - Adjourned. An oral examination should be adjourned if (a) the revisions are more substantial than editorial or minor reworking; (b) if the committee is dissatisfied with the student's oral presentation and defense of the thesis; or (c) in case of extraordinary circumstances such as sudden medical emergency during the exam.
  - Fail.

## PhD Candidacy Examination

### Examining Committee:

- Minimum of five faculty members consisting of:
  - The supervisory committee (normally three faculty members)
  - Two arm's-length faculty members. Although both faculty members may be from within the ECE Department, it is recommended that at least one faculty member be from outside the department.
- FGSR describes an arm's-length examiner as follows: must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the university, nor be related to the student or supervisor(s).
- The examination must be chaired by a faculty member of the Electrical and Computer Engineering Department who is at arm's length from the supervisor and the student. The Chair cannot be one of the examiners.

### Timeline:

- The candidacy examination is normally taken after all course work is completed and thesis work has begun. FGSR requires that the candidacy examination be completed before the end of the second year of registration in the PhD program.
- Four weeks prior to the examination, the supervisor of the student should contact the Graduate Student Advisor with details of the oral exam. A *Notice and Approval of Oral Examination Committee* must be approved by the Department.
- Two weeks prior to the examination, all examiners must receive a copy of the *candidacy examination thesis status report*. This document will typically consist of 20-30 pages, but no more than 30 pages, and contain a literature survey and a description of the research project. It should include work conducted to date, future work and a statement outlining the original contribution and impact expected. It should conclude with a time-line for completion of the thesis.

### Procedure for the candidacy examination:

- The Chair of the examination ensures that proper introductions are made and reviews the procedures to be followed, as noted below.
- The student gives a 20 to 25 minute oral presentation of the thesis work.
- Questions are solicited from the audience members (other than the examining committee members.) Questions from the audience shall be limited to at most 10 minutes.

- The audience is asked to leave, and the student is asked to step out of the room while the committee reviews his or her academic file and background.
- The student is asked to return to the room, and questioning from the examining committee commences.
  - There are normally two rounds of questions. Each round starts with the arm's-length faculty members, then members of the supervisory committee, and finally the supervisor.
  - In each round of questions, each examiner shall have approximately 10 minutes to ask questions.
- After questioning has concluded the student is invited to make a final statement. The student is then asked to leave the room for the examining committee to deliberate and reach its final decision.

Outcome:

- The final decision shall be one of the following:
  - Pass. No revisions are required.
  - Conditional pass. The student is asked to meet some extra conditions to achieve a pass (for example, to write a report on a background area in which they were deemed to be deficient in knowledge). In this case, the committee should provide in writing the mechanism as well as the time frame for the student to meet the conditions.
  - Fail. Possible recommendation: (i) Repeat the candidacy, (ii) Change of category to a Master's program, (iii) Termination of the doctoral program.

## PhD Internal Final Examination

The purpose of this process is to ensure that the thesis is examined by the supervisor and all supervisory committee members and to verify that it is of sufficient substance and quality to proceed to the defense.

### Examining Committee:

- Consists of the supervisory committee.
- The examination is normally chaired by one of the supervisory committee members other than the supervisor.

### Timeline:

- Two weeks prior to internal department exam the student must submit a completed Internal Exam form to the Department and provide all members of the supervisory committee with a copy of the PhD thesis.

### Procedure for the internal examination:

- The Chair of the examination ensures that proper introductions are made and reviews the procedures to be followed, as noted below.
- The student gives a 30 minute oral presentation of the thesis work.
- Questions are solicited from the audience members (other than the examining committee members.) Questions from the audience shall be limited to at most 10 minutes.
- The audience is asked to leave, and the student is asked to step out of the room while the committee reviews his or her academic file and background.
- The student is asked to return to the room, and questioning from the examining committee commences.
  - There are normally two rounds of questions. Each round finishes with questions from the supervisor.
  - In each round of questions, each examiner shall have approximately 10 minutes to ask questions.
- After questioning has concluded the student is invited to make a final statement. The student is then asked to leave the room for the examining committee to deliberate and reach its final decision.

Outcome:

- The final decision shall be one of the following:
  - That both the student and the thesis are ready to proceed to the final defense. The supervisory committee will sign the thesis sign-off sheet and return it to the Graduate Student Advisor.
  - That the student can proceed to the final PhD oral exam after some conditions are met. In this case, the supervisory committee shall discuss with the student the details of the conditions and the time frame for the student to meet the conditions. When all conditions have been met, the supervisory committee will then sign the thesis sign-off sheet and return it to the Graduate Student Advisor.
  - That the student will not be prepared to defend his or her thesis within the timeframe allowed for completing a PhD program. In this case, the supervisory committee shall discuss options with the student and may recommend that the student transfer to a Master's program if circumstances allow.

## PhD Final Defense

### Examining Committee:

- Minimum of the Chair and five voting faculty members consisting of:
  - The supervisory committee (normally three faculty members)
  - An additional arm's-length faculty member from the University of Alberta. Although this faculty member may be from within the ECE Department, it is recommended that he or she be from outside the department.
  - An external examiner/reader from outside the University of Alberta. The external examiner may attend the examination in person, may attend by teleconference, or may submit a written report and questions. In the latter case the external examiner is referred to as a reader. The external examiner must be approved by the Department.
  - The external examiner is considered a voting member of the examining committee, whether or not he or she attends in person, via teleconference, or is a reader who has submitted questions.
- FGSR describes an arm's-length examiner as follows: must not be (or have been) a member of the supervisory committee, or have been connected with the thesis research in a significant way. The examiner should not have been associated with the student, outside of usual contact in courses or other non-thesis activities within the university, nor be related to the student or supervisor(s).
- The examination must be chaired by a faculty member of the Electrical and Computer Engineering Department who is at arm's length from the supervisor and the student. The Chair cannot be one of the examiners.

### Timeline:

- Once the student has successfully completed the internal departmental final examination, the supervisor can nominate an external examiner to the Department by submitting a completed "*Request to Invite External Reader or Examiner for the Final Doctoral Oral Examination form*" accompanied by a CV of the proposed external examiner. This CV should indicate the number of PhD students that the person being nominated has supervised to completion of their programs, and the number of PhD defenses in which this person has participated as an examiner.
- Following approval of the external examiner by the Department, the supervisor of the student should contact the Graduate Student Advisor with details of the final PhD oral exam at least 5 weeks before the exam date. A *Notice and Approval of Oral Examination Committee* must be approved by the Department.
- At this time, the student must provide a copy of the PhD thesis, abstract and a copy of their Summary of Student Record to the Department to send to the external examiner, and the student must also ensure that the rest of the examining committee has a copy of the thesis.



#### Procedure for the final defense:

- The Chair of the examination ensures that proper introductions are made and reviews the procedures to be followed, as noted below.
- The student gives a 20 to 25 minute oral presentation of the thesis work to the exam committee
- The student is asked to step out of the room. At this time:
  - The committee reviews the student's academic file and background.
  - The Chair reads to the rest of the examining committee the report of the External Examiner, up to the point at which questions (if included) begin.
- The student is asked to return to the room, and questioning from the examining committee commences.
  - There are normally two rounds of questions. The questions start with questions from the external examiner. If the external is a reader who is not in attendance, the Chair asks the questions in the report from the external examiner, or delegates the asking of these questions to one of the examining committee members.
  - Questions are then solicited from the arm's-length examiner, and then from members of the supervisory committee. Each round finishes with questions from the supervisor.
  - In each round of questions, each examiner shall have approximately 10 minutes to ask questions.
- After questioning has concluded the student is invited to make a final statement. The student is then asked to leave the room for the examining committee to deliberate and reach its final decision.

#### Outcome:

- The final decision shall be one of the following:
  - Pass. No revisions are required.
  - Pass with revisions. This means that the student has satisfactorily defended the thesis but that the thesis document requires changes that are minor in substance or of an editorial nature.
  - Adjourned. An oral examination should be adjourned if (a) the revisions are more substantial than editorial or minor reworking; (b) if the committee is dissatisfied with the student's oral presentation and defense of the thesis; or (c) in case of extraordinary circumstances such as sudden medical emergency during the exam.
  - Fail.