

Guidelines for the Qualifying Examinations in Science and Math

Purpose. Student in Science and Math must take a PhD Qualifying Examination (QE) to assess if the student has a good understanding of his/her research topic, the organizational and conceptual abilities to conduct a successful research, and the capability of clearly presenting his/her research outcomes in writing and oral presentation. Science and Math strives to extend the purpose of its QE beyond simply testing engineering and science competency to include

- providing a framework for success in research
- motivating analysis of the state-of-the-art in specific fields
- inspiring new questions and cross-disciplinary study (understand how different fields view the same problems)
- developing critical skills in evaluating a research project
- assessing the quality of research work done
- effectively presenting and defending research ideas and concepts.

Requirements for taking Qualifying Examination. The QE can only be taken if the student maintains a minimum cumulative GPA of 3.5 out of 5.0, and after completion of the course work components:

- 4/5 graduate level courses for the student with Master/Bachelor degree
- 2 seminars

The student should apply for the QE to the Post Graduate (PG) Committee of Science and Math at least **three months** ahead of the QE oral presentation.

Qualifying Examination Format. All Science and Math QEs will be scheduled by the student and supervisor within 12 to 24 months of the student's start date via the PG committee. It consists of one written report (around 10 pages) and one 45 minute oral presentation. The written report should contain:

- 1) Abstract
- 2) A problem statement, supported by a thorough literature review
- 3) Methods
- 4) Preliminary results
- 5) Future directions and timelines
- 6) References

The written report will provide the foundation for the oral presentation, where the student will defend the proposed research in front of the QE committee (QEC). The student should submit the written report to the QEC **one month** prior to the QE.

Science and Math Qualifying Examination Policy Version 1.1 (For Student)

Qualifying Examination Committee. The QEC consists of 4-5 faculty members including a chair (tenured faculty from Science and Math), the thesis advisor, and other 2-3 faculty members of SUTD (from any related pillars/clusters). The committee members can optionally include one additional external member not within SUTD.

The chair is responsible for convening the committee and determining the scheduling of the examination. The chair will also submit a QE results form with results and recommendations to the PG committee of Science and Math upon completion of the QE, no later than 7 days after completion of the examination.

The thesis advisor is responsible for inviting and organizing the QEC. The thesis advisor should inform **the HOC** and **the PG committee** of Science and Math about the members of QEC **two months** prior to the QE.

All the committee members are responsible for evaluating the student's research, as well as the student's ability to succeed as an independent researcher in the field.

The QEC will default to be the student's thesis advisory committee. Members can be added or removed after the QE, subject to notification of the PG Committee of Science and Math.

After the oral presentation, the QEC should fill out the Qualifying Examination Results Form in Appendix 1 to conclude the student has passed the QE /passed the QE with minor revision/failed the QE.

Timeframe

Timing	
Student apply for the QE to the (PG) Committee	At least 3 months in advance
Student and advisor will select QEC, and inform HOC and PG Committee	At least 2 months in advance
Student and advisor will schedule exam date with QEC	At least 1.5 months in advance
Student to provide written report to QEC for evaluation	At least 1 month in advance
Exam	
QEC chair submits QE results form to PG Committee	Not later than 7 days after completion

APPENDIX 1: Qualifying Examination Results Form

SECTION A – TO BE COMPLETED BY STUDENT DURING THE QE ORAL PRESENTATION

Name: _____

Student ID: _____ Date of Enrolment (Intake Month and Year): _____

Date of Oral Presentation: _____ Main Advisor: _____

Co-Advisor (if any) : _____ Co-Advisor (if any): _____

Title of Thesis: _____

SECTION B – TO BE COMPLETED BY QUALIFYING EXAMINATION COMMITTEE

SN		Name & Signature	Date
1	QE Committee Chair		
2a	Main Advisor		
2b	Co-advisor (if any) (SUTD / External)*		
3	QEC Member (SUTD)		
4	QEC Member (SUTD)		
5	QEC Member (SUTD / External^)*		
6	QEC Member (SUTD / External^)*		

^ The appointment of External TEC Member is optional

* Delete where appropriate

APPENDIX 1: Qualifying Examination Results Form

SECTION C – QEC’s DECISION ON THE QE ORAL PRESENTATION

1. **Pass**

Comments for Pass:

2. **Pass with Minor Revision**

For pass with MINOR revision, the student is given **2 weeks** for revision and subsequent submission to PhD main advisor to verify that the revision has met the recommendation given by the QEC.

Comments for Minor Revision:

After the minor revision, the PhD advisor and the committee chair are required to endorse in following table to confirm the student has passed the QE with minor revision.

We certify that the minor revision has been corrected and the candidate has passed the QE.

	Name & Signature	Date
Main Advisor		
QE Committee Chair		

5. **Fail**

Comments for Fail: