

Guidelines for the Qualifying Examination

For Students with Student ID 67 Onwards

Doctor of Philosophy Program in Materials Engineering

Department of Materials Engineering, Faculty of Engineering, Kasetsart University

1. Eligibility

Students must have submitted their dissertation proposal through the Graduate School system and obtained official approval from the Graduate School prior to applying for the Qualifying Examination.

2. Recommended Timeline

Students are expected to undertake the Qualifying Examination within the 4th semester and should not exceed the 6th semester.

3. Examination Format

The Qualifying Examination shall be conducted as an open oral examination, focusing on theoretical knowledge relevant to the student's dissertation research.

- The total examination duration shall be no less than 3 hours.
- The student shall deliver a seminar presentation (in a teaching format) for no less than 1 hour and 30 minutes.
- The examination committee shall conduct questioning and assess the student's understanding for no less than 1 hour and 30 minutes.

4. Composition of the Examination Committee

The examination committee shall consist of no fewer than four members, as follows:

4.1 The principal dissertation advisor, serving as Chair

4.2 The co-advisor(s)

4.3 The Ph.D. program committee representative

4.4 A qualified expert registered with the Graduate School

5. Application Procedure

Students must submit an application for the Qualifying Examination at least one month in advance to the Program Chair, through the departmental officer (Ms. Pitchayawadee), together with the following documents:

5.1 Application form for the Qualifying Examination (as specified by the department)

5.2 A comprehensive report of all theoretical foundations relevant to the research, prepared in the form of instructional/teaching materials (book format)

5.3 A progress report of the dissertation and/or published research works

Upon approval of the theoretical content by the program committee, the examination will be authorized. The department will then proceed with the nomination of the examination committee to the Graduate School for official appointment.

6. Post-Approval Procedures

After receiving approval from the program, the student must proceed in accordance with Graduate School regulations by submitting Form GS.06 (Comprehensive/Qualifying Examination Request) in order to:

- Appoint the examination committee
- Schedule the date, time, and venue of the examination
- Publicize the examination for interested attendees

7. Evaluation of Examination

7.1 **Fail:** In the case of an unsuccessful result, the student is permitted to reapply for the examination once within 60 days from the date of the first examination.

7.2 **Conditional Pass:** In the case of a conditional pass, the student must complete all required revisions within one week after the examination, or before the deadline for submission of the examination results to the Graduate School.

Roadmap to Success: Your Doctoral Qualifying Examination (QE) Guide



Eligibility First

Before applying, you must have submitted your dissertation proposal and received official approval from the Graduate School system.



The Ideal Window

Aim to take your QE during your 4th semester; however, it must be completed no later than your 6th semester.

4th semester

6th semester

Section 1: Pre-requisites & Timing

Section 2: The Application Procedure



- ☒ Departmental Application Form
- ☒ Research Progress Report
- ☒ Comprehensive Theoretical Report (Instructional Book Format)



1-Month Advance Notice

Submit your application to the Program Chair through the departmental officer (Ms. Pitchayawades) at least 30 days before your intended date.

Required Documentation

Administrative Approval

Once the program committee approves your theoretical content, you must submit Form GX 05 to the Graduate School to officially appoint the committee and schedule the venue.

Minimum of 4 Members

Section 3: The Examination Committee

Principal Advisor
(Chair)

Co-advisor(s)

Ph.D. Program
Representative

Qualified Expert
(Registered with
Graduate School)



3-Hour Oral Examination

The exam is an open oral session focused on theoretical knowledge relevant to your specific dissertation research.



1.5 Hours: Teaching Seminar

The first half of the exam requires the student to deliver a presentation in a formal instructional or teaching format.



1.5 Hours: Questioning

The second half consists of the committee questioning the student to assess their depth of understanding and theoretical mastery.

Section 5: Evaluation Results



Conditional Pass

You must complete all required revisions within one week of the examination or before the Graduate School result deadline.



Fail & Retake Option

If unsuccessful, you are permitted one re-application for the examination, which must be completed within 60 days of the first attempt.

Qualifying Examination Evaluation Form

Doctor of Philosophy Program in Materials Engineering

Student Name:..... Student ID: Date:...../...../.....

Evaluator:..... ☐ Advisor (☐ Principal / ☐ Co-advisor) ☐ External Expert ☐ Program Committee Member

PLO 1: Design problem-solving processes in materials engineering for industrial applications based on academic principles

PLO 2: Produce advanced materials research aligned with defined research frameworks by integrating newly acquired knowledge

PLO 3: Appropriately select tools for analyzing material properties in accordance with standards

PLO 4: Communicate materials engineering information in both Thai and English using digital technology in professional contexts

PLO 5: Demonstrate leadership and the ability to work collaboratively with others

PLO 6: Demonstrate ethical conduct and adherence to research ethics

Evaluation Category	PLO	Weight	Score (Max 4)	4 (Excellent)	3 (Good)	2 (Fair)	1 (Needs Improvement)
1. Theoretical Understanding and Application	1,2,3	40		Demonstrates deep theoretical understanding; clearly explains principles and equations; accurately connects to applications and tools	Good understanding; explanations are correct but not comprehensive	Partial understanding or some inaccuracies	Lacks understanding or provides incorrect explanations
2. Linking Theory to Research Context	2	20		Clearly connects theory to own research topic; demonstrates how theory supports the work	Good connection but not fully comprehensive	Partial connection	Unable to establish connections
3. Communication, Knowledge Transfer, and Time Management	4,5	20		Clear structure; smooth flow; teaching-style explanation; effective use of media; appropriate timing (85–95 minutes)	Good structure; generally clear with minor issues; acceptable timing (75–105 minutes)	Disorganized presentation or inappropriate timing	Unable to communicate effectively / poor time control
4. Question Handling and Analytical Thinking (Q&A)	1,3,6	20		Provides in-depth answers; explains reasoning/hypotheses; analyzes limitations; academically accurate	Answers correctly with reasonable explanations	Partially correct answers	Unable to answer or demonstrates misunderstanding

The student's average score can be calculated using the following equation:

$$\text{Average Score} = [0.4 \times S_1] + [0.2 \times (S_2 + S_3 + S_4)] \text{ where } S_1 \text{ to } S_4 \text{ represent the scores obtained in Categories 1–4, respectively.}$$

- The average score shall range between 1.0 and 4.0.
- The student must obtain an average score of not less than 3.00 from each evaluator in order to be considered as having passed the examination.
- Please submit this evaluation form to the Program committee for record keeping.

Average Score from this Evaluator:

Evaluator's Signature:Date