School of Nuclear Engineering

Briefing for Students

PhD Qualifying Examination
Spring 2018

October 25, 2017
1:00PM-2:00PM

NUCL 137
Overview

• Purpose of qualifying exam.
• Components of the exam.
• Schedule.
• How the exam will be graded.
• Passed only part of the exam? Now what?
• Questions.

• Q & A with QE writers.
Purpose of Qualifying Exam.

To determine whether the student has the knowledge, skills, and ability to conduct independent thinking and creative research.
Components of the Exam

- General knowledge - Written exam.

- Specialization area – Written research assessment paper with oral presentation of the paper followed by questions related to both the paper and basic knowledge in the specialization area.
**Written Exam**

- **90 minutes-exams (1 each = 4 total).**
  - Nuclear radiation detection and protection
  - Nuclear Engineering Fundamentals and Reactor Physics
  - Nuclear materials including fuel cycle and waste management.
  - Fluids, heat transfer, and reactor safety.

- **2 exams per day, 2 days exams.**
- Students will have **90 minutes** for each exam (exam collected at end of each exam).

- If students are interested, they can review written exams used last year until one week prior to written exam. Please contact Kellie.
Closed book – No notes.

Each student will be given an ID number. That number, not the student’s name, will be used on the exam.

The ID number will only be known to the examination graders and is generated by Head’s office.

A list of concepts that may be covered on each written exam will be available to students.
2017-2018 QE Committees

Committee Chairs

<table>
<thead>
<tr>
<th>Materials</th>
<th>Reactor Physics</th>
<th>Radiation Detection &amp; Protection</th>
<th>Thermal Hydraulics</th>
<th>Fusion*</th>
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<tbody>
<tr>
<td>Prof. Hassanein</td>
<td>Prof. Abdel-Khalik</td>
<td>Prof. Choi</td>
<td>Prof. Ishii</td>
<td>Prof. Choi</td>
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Committee Members

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<tr>
<td>Prof. Wharry</td>
<td>Prof. Bertodano</td>
<td>Prof. Taleyarkhan</td>
<td>Prof. Revankar</td>
<td>Prof. Hassanein</td>
</tr>
<tr>
<td>Prof. Miloshevsky</td>
<td>Prof. Bean</td>
<td>Prof. Garner</td>
<td>Prof. Bertodano</td>
<td>Prof. Revankar</td>
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</tbody>
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*) Research Assessment Paper and Oral Examination Only

Faculty indicated by green color: Grader for written exam.

Committee chairs are responsible to submit hardcopy of camera-ready exams and solution manual with rubric and journal papers for assessment to Kellie by Thursday November 23, 2017.

Note: Please see the following rule indicated on page 3 in QE Handbook 2016

“If the thesis advisor of any student who is planning to do the research assessment paper and oral examination in a specialty area is not on the Area Committee that will administer the student’s exam, the Head will appoint the advisor to that Area Committee as a full member-”
Specialization Exam

- 2 parts
  - Written research assessment paper.
  - Oral presentation of the paper followed by questions related to both the paper and basic knowledge in the specialization area.
Research Assessment Paper

- A journal article will be assigned in each specialization area.
- Article will be selected by the Area Committee.
- Article will not be directly related to any student’s research.
- Students are expected to work independently.
Format:

- A general outline of the paper containing
  - Key Summary of the results
  - Critique and placing the paper in historical perspective
  - Extension of the work
  - Relevant references.
- 15-20 pages long.
- Double spaced.
Oral Portion of Specialization Exam

- 2 hours will be scheduled for the exam.
- Area Committee will conduct the exam.
- 30-minute presentation on the research assessment paper.
- Area Committee will first ask questions related to the research assessment paper.
- Area Committee will then ask questions related to the basic knowledge in specialization area.
Schedule for Qualifying Exam

- **Oct. 25, 2017** – Briefing for students.
- **Nov. 10, 2017** – Students planning to take the exam must notify Grad Chair (cc to Kellie and Nancy) in writing with official registration form.
- **Dec. 8, 2017** – Research assessment paper assigned.
- **Feb. 5 (Mon) and 7 (Wed), 2018** – Written exam given.
- **Feb. 19-23, 2018** – Oral exams to be held.
- **Week of Mar. 5, 2018** – Results to be announced.
QE Location & Time (tentative)

Written Exam Schedule

February 5, 2018
13:00 - 14:30 Nuclear radiation detection and protection
14:45 - 16:15 Nuclear Engineering Fundamentals and Reactor Physics

February 7, 2018
13:00 - 14:30 Fluids, heat transfer, and reactor safety
14:45 - 16:15 Nuclear Materials including fuel cycle and waste management

Location: NUCL137
Registration for QE

➤ Students planning to take the exam must notify Grad Chair in writing with official registration form.
  • CC Nancy Vestal, Student Services
  • Deadline: Nov. 10, 2017

➤ A test email will be sent to registered students
  • If you do not receive an email following registration—please contact Nancy Vestal as soon as possible
    • CC Grad Chair
How the Exam Will Be Graded

Written exam

- Each of the 4 exams are graded separately
- Each exam scored by the faculty members that prepared the exam
- Results are reported to the Head
- Students will be known by ID numbers only
- Students who fail the Qualifying Examination will have an opportunity to receive relevant advice from the Graduate Committee Chair to improve his or her preparedness for next Qualifying Examination by the end of 2017 March
How the Exam Will Be Graded

Specialization exam (written research assessment paper & oral presentation and questions)

1. Grades on the written research assessment paper and the oral portion will be determined using the rubrics in the Qualifying Examination Procedure manual

2. The combined votes on the written research assessment paper & oral presentation and questions will be used to determine whether a student passes or fails

3. A student must receive a minimum of 60 percent “pass” votes in order to pass the examination
If You Pass Part of the Exam

- **Written Exam**
  - Fail one part – take it again- given during the next spring
  - Fail more than one part – take failed parts the next spring

- **Specialization Exam**
  - If this exam is failed, it must be taken the next spring
How Many Attempts?

1. A student must pass all 5 parts (4 written & 1 oral exams) of the exam to continue in the Ph.D. program

2. A student may take each part only twice
Questions?

1. QE committee members may answer for Q & A session in this QE briefing.

2. If QE members are not able to attend the QE briefing, students can visit QE writers to ask about QE.