

Qualifier Exam Seminar

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(Last updated: 9/29/2010)

Objective of This Presentation

- Convey the degree of qualifier exam (QE) preparation expected of you by the faculty.
- My main objective in this seminar is to communicate to you the overall opinions of the faculty concerning the QEs.
- First, some basic information...

Logistics

- **Scheduling:** Quals must be taken for the first time no later than the second semester of enrollment, excluding summer sessions. For example:
 - Arrive in Fall 2009, take QEs January 2010.
 - Arrive in Spring 2010, take QEs August 2010.

Exception: If you enter the Ph.D. program without an M.S. degree, you get one additional semester.

Logistics

Purpose:

- Provide students with an opportunity to review the core disciplines in mechanical engineering (approximately 75% at the undergraduate and 25% at the graduate level) and a focus area of central importance to their specialization;
- Provide an assessment as to whether students possess attributes of a doctoral candidate by demonstrating understanding of and the ability to apply fundamental principles; and
- Evaluate a student's potential for satisfactorily completing the doctoral program.

Logistics

Web Information:

- Old exams (do not rely heavily on these):

http://www.clemson.edu/ces/me/graduate/qualifying_exams/index.html

- Topic lists – Very Important:

http://www.clemson.edu/ces/me/graduate/qualifying_exams/QualifyingExamTopicList.pdf

Significance

- The QEs are important!
- You are required to take these, because the faculty **want** this to be the case (the faculty aren't required to have QEs – we **choose** to have them).
- Being expert in the area of your thesis research is not sufficient to obtain a Ph.D. Expertise in other areas is important.
- Each year ~10% of Ph.D. candidates are removed from the Ph.D. program because of QE failure.
- If you fail, your thesis advisor has zero ability to prevent your removal from the Ph.D. program, no matter how well you are doing on your research.

Attitude

- The faculty believe that the majority of QE failures are due to insufficient studying.
- The faculty feel that these exams need to be taken very seriously and should be viewed as a significant event in your educational career – not just a hoop to jump through.
- You need to take ownership of your preparation, make a plan for studying, and take all necessary steps to become expert in each of the three areas that you will be tested in.

Extent of Preparation

Difficult to give quantitative numbers that will 'guarantee' a pass on a QE. Here are some qualitative guidelines.

- On the day of your exam, you should be better prepared than the best student in the undergraduate course corresponding to the QE topic.
- The amount of time spent preparing should be measured in months, not weeks.

Extent of Preparation

Sample responses from your professors on their QE preparation expectations:

- “[You should spend] the better part of a whole summer reading and studying [for the QEs].”
- “[You should study] the material in the recommended texts by working problems from those texts. I think the students are ‘studying’ the old exams, which is a poor strategy.”
- “Graduate students should spend two months doing nothing but studying for the QEs.”

Caveat

- Note that your advisor may feel differently.
- Note that your advisor may expect research productivity during your QE preparation.
- However, you will still be taking the same exam as everybody else!
- It remains your responsibility to be expert in every topic in the QE topic list, on the day of the exam.