INTENT TO TAKE ORAL QUALIFYING EXAM

(To be completed by student and signed by advisor)

Name__________________________________ Date:____________________

CSU ID: ______-____-____ Phone: ______-____-____ Email _______________________

*Form must be submitted 60 days prior to exam date

TEST TO BE TAKEN:

Fall 20____ Date of Exam: ______
Spring 20____ Date of Exam: ______

TOPIC
EXAMINER (Name, Title, & Department)

CORE*: __________________________
Signature_______________________

CORE*: _________________________
Signature_______________________

TOPICAL: _______________________
Signature_______________________

TOPICAL: _______________________
Signature_______________________

* For core areas, students can examine in MECH 538, MECH 529, MECH 532, CIVE 560, MECH 539, or MECH 544, MATH 530, and Computational Methods for Mechanical Engineers (Coming Soon: MECH 551).

☐ Two faculty members from Mechanical Engineering.
☐ Three required core courses have been completed.
☐ All examiners are tenured/tenure-track faculty at Colorado State University
☐ Not all examiners are tenured/tenure-track faculty at Colorado State University (a petition for consideration must be attached)

Semester and Year you entered the Ph.D. program: _______________________

This is a:   _____ 1st Attempt of Oral Qualifying Exam
           _____ 2nd Attempt of Oral Qualifying Exam

Previous Score/Results & Conditions:
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Student’s Signature___________________________ Date:_____________________

Advisor’s Signature___________________________ Date:_____________________

Examination Committee Approved by Associate Department Head
## REPORT OF ORAL QUALIFYING EXAM

**SCORE:** _______

Examination Committee Chair: ______________________________________

<table>
<thead>
<tr>
<th>EXAM:</th>
<th>EXAM:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXAM:</th>
<th>EXAM:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

0-2.0 FAIL, 2.5-4.0 FAIL with Permission to Retake, 4.5-5.5 PASS with Conditions, 6.0-8.0 PASS

Departmental Approval:

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
Purpose of the exam:
The main objective of the exam is to ensure that all PhD graduates satisfy Outcome 5, which is listed as follows:

All Ph.D. graduates from the CSU Department of Mechanical Engineering will demonstrate a mastery of the underlying theory specific to their dissertation research and a thorough understanding of theory in their engineering sub-discipline.

Who will administer the exam?

1. The Qualifying Exam will be administered by an Examination Committee, which could be populated predominantly by the student’s Research Committee. The Examination Committee must have at least 2 faculty members from the Department of Mechanical Engineering.

2. The Thesis Advisor may be present for the exam, will only serve as an observer, will be entirely non-communicative and will not participate in the examination process. Since the faculty advisor will not participate in the examination process, the Examination Committee will include at least one member who is not on the student’s Research Committee. The advisor cannot be present during the post-exam deliberation, but will be debriefed once the committee has come to a decision regarding the points and outcome of the exam.

3. The Examination Committee will be selected by the student with approval by the student’s advisor.

When will the exam be taken?

1. The student must complete at least one year of graduate course work and all of the required Core Courses prior to taking the Qualifying Exam.

2. The student must take the exam within 24 months of admission into the PhD program. The exam can be taken earlier provided that criterion 1 is satisfied.

3. The student and examination committee must establish a day and time for the exam to be administered and the student must submit the intent to take the oral qualifying exam form at least 60 days prior to exam date [http://www.engr.colostate.edu/me/pages/graduate/phd.html](http://www.engr.colostate.edu/me/pages/graduate/phd.html).

4. The report of the oral qualifying exam must be submitted to the Graduate Program Coordinator within 1 week of the examination.

Examination Content:

1. The exam will be a 2-hour oral exam administered in four 30-minute segments by the Examination Committee.

The exam will consist of 4 topical areas, at least 2 of which will be from the following list of core subject areas. The associated Core Course is listed in parentheses as a general guideline for the topical area. However, the topical content of the oral exam is at the discretion of the examiner.

- Thermodynamics (MECH 538)
- Dynamics of Mechanical Systems (MECH 529)
- Materials (MECH 532)
- Solid Mechanics (CIV 560)
- Fluid Mechanics (MECH 539)
Heat Transfer (MECH 544)
Mathematics for Scientists and Engineers (MATH 530)
Computational Methods for Mechanical Engineers (MECH 551)
Computational Fluid Dynamics (MECH 651) can be used as a substitution for MECH 551 only if course is completed in Fall 2015

The remaining 2 subject areas will be based on the candidate’s dissertation research topic subject to approval by the Advisor, Research Committee and Examination Committee.

2. The Examination Committee can choose to conduct the oral examination on these topics in the context of the candidate’s dissertation topic.

3. The Examination will be graded on a scale of 0 to 8.0 (scoring in increments of 0.5), with a maximum grade of 2.0 for each of the four topical areas. The final number grade will determine the outcome of the exam as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0 to 8.0</td>
<td>Pass</td>
</tr>
<tr>
<td>4.5 to 5.5</td>
<td>Pass with Conditions</td>
</tr>
<tr>
<td>2.5 to 4.0</td>
<td>Fail with Permission to Retake</td>
</tr>
<tr>
<td>0 to 2.0</td>
<td>Fail</td>
</tr>
</tbody>
</table>

Note that any committee member can require that a student complete additional work for any score less than 8.0.

**Examination Committee Responsibilities:**

1. The Examination Committee will consist of at least 4 members (excluding the candidate’s Research Advisor).

2. At least 2 members of the Examination Committee must have their primary appointment in the Mechanical Engineering Department.

3. Each member of the Examination Committee will conduct a 30 minute exam in 1 of the 4 subject areas.

4. Each member will record a rough score for their 30-minute exam on a 0 to 2 scale using 0.5 increments.

5. The Examination Committee will meet in private (without the presence of the thesis advisor) to determine a final score on the 0 to 8 scale and assign the associated final grade of pass, pass with condition, fail with permission to retake, or fail. Those students who fail with permission to retake will only be allowed to retake the exam once.

6. The Examination Committee will report the results of the qualifying examination to the Associate Department Head for Graduate Studies.

**Research Advisor Responsibilities:**

1. The student’s Research Advisor will work with the student to identify the 4 subject areas of the Qualifying Exam and the appropriate members of the Examination Committee for each subject area. Note that the intent is for the Examination Committee to have the same members as the Research Committee to the fullest extent possible.

2. After agreeing on the recommended constitution of the Examination Committee, the student will contact the members of the Examination Committee to request their participation in the Qualifying Exam process.
3. Having obtained consent from the Examination Committee members and Research Advisor, the student will obtain approval for the proposed topical areas and Examination Committee make-up by the Associate Department Head for Graduate Studies.

4. The Research Advisor may be present during the Qualifying Exam but will not participate in the examination process.

5. The Research Advisor may not be present for the private Examination Committee deliberation during which the final grade is assigned but will be a part of the post-examination debriefing (after the score has been determined).

6. The Research Advisor or his/her designee will communicate the final grade to the student after the exam.