Graduate Handbook
for
Mechanical Engineering

Department of Mechanical Engineering and Materials Science
Swanson School of Engineering
University of Pittsburgh

Revised October 30, 2019
## Contents

1 **Mechanical Engineering** 2

2 **Doctor of Philosophy Program** 2

   2.1 Admission ................................. 3

   2.2 Plan of Study ................................. 3

      2.2.1 Course requirements ..................... 3

      2.2.2 QPA requirement ......................... 3

   2.3 Doctoral Committee ......................... 3

   2.4 Course of Study ............................. 4

      2.4.1 Preliminary Examination (Qualifier) ...... 4

      2.4.2 Comprehensive Examination & Dissertation Proposal ......................... 4

      2.4.3 PhD Candidacy ............................ 5

      2.4.4 Final Oral Examination (Dissertation Defense) ........................... 5

   2.5 PhD Dissertation ............................. 5

      2.5.1 Dissertation Copies ...................... 6

3 **Master of Science Program** 6

   3.1 Research MS Track............................ 6

      3.1.1 Admissions ............................... 6

      3.1.2 Plan of Study ............................. 6

      3.1.3 Course requirements ..................... 6

      3.1.4 QPA requirement ......................... 7

   3.2 Master’s Thesis .............................. 7

      3.2.1 Thesis Copies ............................. 7

   3.3 Professional MS Track ....................... 7

      3.3.1 Admissions ............................... 7

      3.3.2 Plan of Study ............................. 8

      3.3.3 Course requirements ..................... 8

      3.3.4 QPA requirement ......................... 8

4 **Academic Integrity** 8

   4.1 Student Obligations ......................... 8
1 Mechanical Engineering

The Mechanical Engineering program offers broad-based educational and research opportunities that apply the fundamentals of mechanical engineering to the solution of real-world engineering problems. The program offers education and research at the cutting edge of thermal-fluid science, engineering simulation and computation, solid mechanics, biomechanics, manufacturing, dynamic systems and control. Each graduate student’s program is developed individually within very broad limits and is carefully designed to focus on his or her individual interests and chosen field of specialization.

The range of research programs in the department reflects the broad spectrum of faculty interest. Importantly, the fundamentals of mechanical engineering is a unifying thread. Department research investigates basic phenomena and develops fundamental tools to address the hardest technological and social challenges.

Contact

ME Graduate Director: Inanc Senocak, PhD
1105 Benedum Hall
412-624-5430
E-mail: senocak@pitt.edu

MEMS Graduate Administrator: Carolyn Chuha
636D Benedum Hall
412-624-9722
E-mail: cac90@pitt.edu

2 Doctor of Philosophy Program

The aim of the doctoral program is to develop individuals to be independent researchers and to prepare them for careers in research. The program is flexible. Its primary emphasis is on innovative and distinctive research at the forefront of engineering, science, and technology. Students wishing to pursue the PhD should have an outstanding academic background and a desire and ability to carry out original research. As the studies progress, students develop an understanding at the highest level in their area of specialization that must lead to an original contribution to the field in the PhD dissertation. PhD students here are given independence and responsibility. They are not only encouraged, but are expected to, develop research ideas, which they propose and defend. They work closely with their faculty research advisors and participate in research addressing relevant engineering problems. To supplement their research, students take advanced courses in areas related to their research work. Candidates for the PhD achieve a high level of proficiency through this advanced course work and individual study in their research and related areas.

The goal of the Doctor of Philosophy program is to develop the student to be an independent researcher and to prepare them for a career of engineering research. Students learn how to conduct research at development to solve cutting-edge technology problems. This work requires a strong background in the fundamentals of engineering with a focus on a specialty area of interest to the student.
2.1 Admission

A bachelor’s or master’s degree holder applying to the program must have a QPA equal to or higher than 3.3 (B+) or equivalent. Students who do not meet this requirement may be able to enter the program based on experience demonstrating their excellence, as evaluated by the Graduate Committee.

In some cases, depending on previous background and QPA, students may be admitted initially on a provisional basis. This usually requires students to secure grades of 3.3 (B+) or better in courses that are required to obtain a better background courses as deemed necessary by the Graduate Admissions Committee.

The PhD student is expected to attend full time. It is possible, however, to seek candidacy as a part-time student provided the PhD students spends at least one full-time academic year on campus.

2.2 Plan of Study

During the first term in the doctoral program the student must submit a plan of study for approval by the Graduate Committee. This plan of study should be prepared under the guidance of the student’s major advisor.

2.2.1 Course requirements

Completion of the PhD program requires a total of 72 credits of which

- At least 36 credits must be didactic (classroom based) courses, and
- At least 18 credits must be dissertation research consisting of
  - ME 3997 RESEARCH, PHD, or
  - ME 3999 PHD DISSERTATION (after admission to PhD Candidacy)
- At least one of the following mathematics courses:
  - ME 2001 DIFFERENTIAL EQUATIONS
  - ME 2002 LINEAR AND COMPLEX ANALYSIS
  - ME/ECE 2646 LINEAR SYSTEM THEORY

2.2.2 QPA requirement

Students must maintain a minimum cumulative QPA of 3.30 in courses to be eligible to take the preliminary and comprehensive examinations and to graduate.

Quality Point Average (QPA) and Grade Point Average (GPA) are numerical indications of a student’s academic achievement. QPA is the average of letter grades earned toward a degree, whereas GPA is the average of total letter grades earned.

2.3 Doctoral Committee

Before admission to candidacy for the PhD degree, the student’s major advisor will work with the student to propose a dissertation committee. This committee must review and approve the proposed research project before the student may be admitted to candidacy. This doctoral committee has the responsibility to advise the student during the progress of the candidate’s research and has the authority to require high quality research and/or the rewriting of any portion or all of the
dissertation. It conducts the final oral examination and determines whether the dissertation meets acceptable standards.

The doctoral committee must consist of a minimum of four current members of the graduate faculty. At least three of these graduate faculty members, including the major advisor, must be from the Mechanical Engineering Faculty in the Department of Mechanical Engineering and Materials Science. At least one graduate faculty member must be from another department. The majority of the committee, including the major adviser, must be full or adjunct members of the Graduate Faculty. Other graduate and non-graduate faculty members may also serve on the committee.

Meetings of the doctoral candidate and his/her dissertation committee must occur at least annually from the time the student gains Admission to Doctoral Candidacy. During these meetings, the committee should assess the student’s progress toward degree and discuss objectives for the following year and a timetable for completing degree requirements.

2.4 Course of Study

2.4.1 Preliminary Examination (Qualifier)

The PhD preliminary examination is a diagnostic examination based on Master of Science-level courses (or equivalent) to assess student’s potential to complete the PhD program.

2.4.2 Comprehensive Examination & Dissertation Proposal

The Comprehensive Examination and Dissertation Proposal may be separate examinations, but are often combined.

Comprehensive Examination  The Comprehensive Examination assesses the student’s mastery of mechanical engineering doctoral study, the student’s acquisition of both depth and breadth in mechanical engineering, and the ability to use the research methods of the discipline.

The timing of the Comprehensive Examination should meet the following guidelines:

- It should be administered at approximately the time of the completion of the formal course requirements with a cumulative QPA of at least 3.0.
- It should be passed at least one (1) full term after successfully completing the Preliminary Examination (Qualifier).
- It should be passed at least eight (8) months before the scheduling of the final oral examination and dissertation defense.
- In no case may the comprehensive examination be taken in the same term in which the student is graduated.

A copy of the comprehensive exam document, signed by the major advisor, must be submitted to the ME Graduate Office. Examination results must be reported promptly to the Dean’s office but no later than the last day of the term in which the examination is administered.

Dissertation Research Proposal  Each student must prepare a dissertation proposal for presentation to the doctoral committee at a formal dissertation overview or prospectus meeting. The proposal requires the student to carefully formulate a plan for his or her doctoral research. The overview and prospectus meeting lets the doctoral committee members provide guidance in shaping the conceptualization and methodology of that plan.

The members of the doctoral committee will review the proposal and either reject, suggest revisions to the plan, or accept the proposed research project. The doctoral committee must
unanimously approve the dissertation research topic, plan, and proposal before the student may be admitted to candidacy for the doctoral degree. Approval of the proposal does not imply either the acceptance of a dissertation prepared in accord with the proposal or the restriction of the dissertation to this original proposal.

The student is responsible for ensuring that all appropriate regulatory approvals are obtained for the proposed research. For example, if the research proposed in the overview or prospectus involves human subjects, that proposed research must be approved by the University Institutional Review Board (IRB) before it may be carried out.

The dissertation proposal should be scheduled as soon as the candidate is prepared to present his or her proposal, since there must be at least two full terms between its successful completion and the Final Oral Examination (dissertation defense).

2.4.3 PhD Candidacy

Admission to candidacy for the Doctor of Philosophy degree constitutes a promotion of the student to the most advanced stage of graduate study and provides formal approval to devote essentially exclusive attention to the research and the writing of the dissertation. To qualify for admission to candidacy, students must meet the following criteria:

- be in full graduate status,
- passed the preliminary examination (qualifier),
- have completed formal course work with a minimum QPA of 3.00,
- have passed the comprehensive examination, and
- have received approval of the proposed subject and plan of the dissertation from the doctoral committee following an overview or prospectus meeting of the committee.

Admission to candidacy is a prerequisite to registration for dissertation credits, ME 3999 PHD DISSERTATION.

2.4.4 Final Oral Examination (Dissertation Defense)

This is the final examination of the PhD program, conducted by the doctoral committee, in which the student defends the validity of and the contributions made by his or her dissertation research as well as his or her ability to comprehend, organize, and contribute to the chosen field of research. The examination needs not be confined to materials in and related to the dissertation. One copy of the dissertation must be submitted to each member of the doctoral committee at least two weeks before the date set for the final oral examination. Other qualified individuals may be invited by the committee to participate in the examination. This examination begins with a seminar presented by the student that is open to all members of the University. Therefore the date, place, and time of the examination should be published at least a week in advance by submitting the dissertation title and abstract to the ME Graduate Office. Only members of the doctoral committee may vote on whether the candidate has passed the examination. The student must be registered in the term in which the degree is granted.

2.5 PhD Dissertation

Each student must prepare a dissertation embodying an extended original, independent investigation of a problem of significance in the student’s field of specialization. The dissertation must add to the general store of knowledge or understanding in that field. After the dissertation has been prepared and approved by the major advisor, the final oral examination shall be held. Non-native
English speakers are encouraged to take ENGR 2015 Technical Writing (however this course does not count toward graduation).

2.5.1 Dissertation Copies

Dissertations should be submitted in accordance with the Electronic Thesis and Dissertation guidelines: https://etd.pitt.edu/. After the final oral examination is successfully completed, the candidate must have their dissertation reviewed by the school before it can be submitted to the graduate school.

The student’s committee should have completed the PhD rubric sheet (sample in the appendix) and returned to the Graduate Administrator.

3 Master of Science Program

The goal of the Master of Science program is for the student to develop an advanced understanding in a specific area of interest. Students can tailor their individual MS program to emphasize different aspects of science and engineering. The Department offers MS degree programs that have two tracks: a professional track and a research track.

3.1 Research MS Track

The Research MS Track is designed for individuals seeking an in-depth research experience in mechanical engineering. Students will gain a deep understanding of their area of interest through an extended research project. This option is particular appropriate for students interested in a PhD. Students working under the MS research option are required conduct a thesis project and to present a thesis that demonstrates marked attainment in some area of the student’s major subject, as well as acquisition of the methods and techniques of scientific investigation.

3.1.1 Admissions

A bachelor’s or master’s degree holder applying to the program must have QPA equal to or higher than 3.0 (B) or equivalent. Students who do not meet this requirement may be able to enter the program based on experience demonstrating their excellence, as evaluated by the Graduate Committee.

In some cases, depending on previous background and QPA, students may be admitted initially on a provisional basis. This usually requires students to secure grades of 3.0 (B) or better in courses that are required to obtain a better background in materials science and engineering and/or other graduate-level courses as deemed necessary by the Graduate Admissions Committee.

3.1.2 Plan of Study

During the first term in the master’s program the student must submit a plan of study for approval by the department. This plan of study should be prepared under the guidance of the student’s major advisor.

3.1.3 Course requirements

Completion of the MS program requires a total of 30 credits of which

- At least 21 credits must be didactic (classroom based) courses
• At least 9 credits must be thesis research consisting of
  – ME 2997 RESEARCH, M.S.
  – ME 2999 M. S. THESIS (at least 6 credits)
• At least one of the following mathematics courses:
  – ME 2001 DIFFERENTIAL EQUATIONS
  – ME 2002 LINEAR AND COMPLEX ANALYSIS
  – ME/ECE 2646 LINEAR SYSTEM THEORY
• At most 9 graduate credits from other engineering, mathematics, or physics departments.

3.1.4 QPA requirement
Students must maintain a minimum cumulative QPA of 3.0.

Quality Point Average (QPA) and Grade Point Average (GPA) are numerical indications of a student’s academic achievement. QPA is the average of letter grades earned toward a degree, whereas GPA is the average of total letter grades earned.

3.2 Master’s Thesis
Each student must prepare a thesis embodying an extended investigation of a problem of significance in the student’s field of specialization. The thesis must add to the general store of knowledge or understanding in that field. After the thesis has been prepared and approved by the major advisor, the final oral examination shall be held. Non-native English speakers are encouraged to take ENGR 2015 Technical Writing (however this course does not count toward graduation).

3.2.1 Thesis Copies
Theses should be submitted in accordance with the Electronic Thesis and Dissertation guidelines: https://etd.pitt.edu/. After the final oral examination is successfully completed, the candidate must have their thesis reviewed by the school before it can be submitted to the graduate school.

The student’s committee should have completed the MS rubric sheet (sample in the appendix) and returned to the Graduate Administrator.

3.3 Professional MS Track
The Professional MS Track is designed for individuals seeking advanced study in mechanical engineering. The professional MS programs are oriented toward full-time students seeking a career in industry, and part-time students currently working in industry.

3.3.1 Admissions
A bachelor’s or master’s degree holder applying to the program must have cumulative grade point average (QPA) equal to or higher than 3.0 (B) or equivalent. Students who do not meet this requirement may be able to enter the program based on experience demonstrating their excellence, as evaluated by the Graduate Committee.

In some cases, depending on previous background and QPA, students may be admitted initially on a provisional basis. This usually requires students to secure grades of 3.0 (B) or better in courses that are required to obtain a better background in materials science and engineering and/or other graduate-level courses as deemed necessary by the Graduate Admissions Committee.
3.3.2 Plan of Study

During the first term in the program the student must submit a plan of study for approval by the department. This plan of study should be prepared under the guidance of the student’s major advisor.

3.3.3 Course requirements

Completion of the MS program requires a total of 30 credits of which

- At least 30 credits must be didactic (classroom based) courses
- At least one of the following mathematics courses:
  - ME 2001 DIFFERENTIAL EQUATIONS
  - ME 2002 LINEAR AND COMPLEX ANALYSIS
  - ME/ECE 2646 LINEAR SYSTEM THEORY
- At most 9 graduate credits from other engineering, mathematics, or physics departments.

3.3.4 QPA requirement

Students must maintain a minimum cumulative QPA of 3.0.

Quality Point Average (QPA) and Grade Point Average (GPA) are numerical indications of a student’s academic achievement. QPA is the average of letter grades earned toward a degree, whereas GPA is the average of total letter grades earned.

4 Academic Integrity

Students are expected to read and abide by the Guidelines on Academic Integrity of the University of Pittsburgh.

Students have rights under the Guidelines on Academic Integrity. If matters cannot be resolved between the student and professor, the matter will be referred next to the Department Chair, followed by the Associate Dean of Academic Affairs, and ultimately the University, if resolutions are not met at the lower levels. Sanctions range from receiving zero grade on an assignment to dismissal from the University, depending upon the seriousness of the offense.

It is the student’s responsibility to familiarize themselves with forms of violations of academic integrity. Some examples include plagiarism, unauthorized sharing of computer code or other work, receiving or giving unauthorized aid from/to other students.

Students should assume that they are to perform independent work, unless otherwise authorized by the faculty. If there is any confusion, please consult the faculty for guidance.

4.1 Student Obligations

A student has an obligation to exhibit honesty and to respect the ethical standards of the profession in carrying out his or her academic assignments. Without limiting the application of this principle, a student may be found to have violated this obligation if he or she:

1. Refers during an academic evaluation to materials or sources, or employs devices, not authorized by the faculty member.
2. Provides assistance during an academic evaluation to another person in a manner not authorized by the faculty member.
3. Receives assistance during an academic evaluation from another person in a manner not authorized by the faculty member.
4. Engages in unauthorized possession, buying, selling, obtaining, or use of a copy of any materials intended to be used as an instrument of academic evaluation in advance of its administration.
5. Acts as a substitute for another person in any academic evaluation process.
6. Uses a substitute in any academic evaluation proceeding.
8. Depends upon the aid of others in a manner expressly prohibited by the faculty member, in the research, preparation, creation, writing, performing, or publication of work to be submitted for academic credit or evaluation.
9. Provides aid to another person, knowing such aid is expressly prohibited by the faculty member, in the research, preparation, creation, writing, performing, or publication of work to be submitted for academic credit or evaluation.
10. Presents as one’s own, for academic evaluation, the ideas, representations, or words of another person or persons without customary and proper acknowledgment of sources.
11. Submits the work of another person in a manner which represents the work to be one’s own.
12. Knowingly permits one’s work to be submitted by another person without the faculty member’s authorization.
13. Attempts to influence or change one’s academic evaluation or record for reasons other than achievement or merit.
14. Indulges, during a class (or examination) session in which one is a student, in conduct which is so disruptive as to infringe upon the rights of the faculty member or fellow students.
15. Fails to cooperate, if called upon, in the investigation or disposition of any allegation of dishonesty pertaining to a fellow student.
16. Violates the canons of ethics of mechanical engineering.
### GRADUATE ENGINEERING ACTION FORM

#### MASTER DEGREE PROGRAM

**STATUS**

<table>
<thead>
<tr>
<th>FULL</th>
<th>PROVISIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EFFECTIVE DATE (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**COMPREHENSIVE EXAM**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE OF EXAM (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**FINAL DEFENSE (ORAL)**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE OF ORAL (MONTH/DAY/YEAR)

CHAIR’S SIGNATURE

### NON-THESIS OPTION

**THESIS OPTION**

TITLE: ____________________________

FORMAT APPROVED:

REVIEWER DATE

COPY RECEIVED:

GRADUATE COORDINATOR DATE

OFFICE OF ADMINISTRATION DATE

### DOCTORAL DEGREE PROGRAM

**STATUS**

<table>
<thead>
<tr>
<th>FULL</th>
<th>PROVISIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EFFECTIVE DATE (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**PRELIMINARY/QUALIFIER EXAM**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE OF EXAM (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**COMPREHENSIVE EXAM**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE OF EXAM (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**ADMISSION TO CANDIDACY**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EFFECTIVE DATE (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**FINAL DEFENSE**

<table>
<thead>
<tr>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DATE OF ORAL (MONTH/DAY/YEAR)

GRADUATE COORDINATOR/ADVISOR SIGNATURE

**DISSERTATION**

TITLE: ____________________________

FORMAT APPROVED:

REVIEWER DATE

COPY RECEIVED:

GRADUATE COORDINATOR DATE

OFFICE OF ADMINISTRATION DATE

### DEPARTMENTAL RELEASE

RETURNED ALL KEYS TO THE DEPARTMENT

VACATED ALL LAB AND OFFICE SPACE

CANCELLED ALL COMPUTER CHARGE NUMBERS

RETURNED ALL EQUIPMENT TO THE DEPARTMENT

APPROPRIATE DEPARTMENTAL SIGNATURES/DATE
APPLICATION FOR ADMISSION TO CANDIDACY FOR DOCTORAL DEGREE
SWANSON SCHOOL OF ENGINEERING – UNIVERSITY OF PITTSBURGH

PLEASE PRINT OR TYPE ALL ENTRIES

<table>
<thead>
<tr>
<th>NAME OF APPLICANT</th>
<th>PSD</th>
<th>DEPARTMENT</th>
</tr>
</thead>
</table>

PART I (To be completed by the applicant). When approved, copies will be forwarded to the adviser and departmental office.

I hereby petition the Graduate Faculty of the Swanson School of Engineering to be admitted to candidacy for the degree of Doctor of Philosophy. I have successfully completed all prerequisites of admission of candidacy: the Ph.D. Comprehensive Examination, the Non-Engineering Minor Requirement, and any Special Departmental Requirement.

It is requested that Professor __________________________ be designated as my major advisor to direct my research and the preparation of my doctoral dissertation. My proposed subject of research is:

_____________________________________________________

I will work with my proposed major advisor on a dissertation proposal and present my plan of research to the Doctoral Committee at a Dissertation Proposal Conference.

I understand that no final action will be taken until the Doctoral Committee approves my dissertation proposal.

<table>
<thead>
<tr>
<th>APPLICANT’S SIGNATURE AND DATE</th>
<th>ADDRESS</th>
</tr>
</thead>
</table>

ROUTING INSTRUCTIONS-AFTER PART I IS COMPLETED BY THE APPLICANT AND THE SIGNATURE OF THE GRADUATE COORDINATOR IS OBTAINED, FORWARD THE APPLICATION TO THE PROPOSED MAJOR ADVISOR.

CERTIFIED DEPARTMENTAL GRADUATE COORDINATOR SIGNATURE

PART II (To be completed by the major advisor and members of the proposed doctoral committee).

This will indicate my willingness to serve as the major advisor and chair of the Doctoral Committee for the applicant. The subject of the proposed research is acceptable to me. I recommend that the following persons be appointed to serve as the Doctoral Committee for this student.

<table>
<thead>
<tr>
<th>NAMES OF FACULTY MEMBERS</th>
<th>DEPARTMENT AFFILIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ROUTING INSTRUCTIONS: FORWARD THE APPLICATION TO THE ASSOCIATE DEAN FOR GRADUATE PROGRAMS. COPY WILL BE RETURNED TO THE GRADUATE COORDINATOR AFTER THE COMMITTEE IS APPROVED.

SIGNATURE OF MAJOR ADVISOR AND DATE

SIGNATURE OF DEPARTMENT CHAIR AND DATE

ACTION ON PROPOSED DOCTORAL COMMITTEE

_____________________________________________________

_____________________________________________________

_____________________________________________________

_____________________________________________________

_____________________________________________________

ASSOCIATE DEAN FOR GRADUATE PROGRAMS AND DATE
PART III (To be completed by the members of the Doctoral Committee at the conclusion of the Dissertation Proposal Conference).

To – Members of the Proposed Doctoral Committee

On the recommendation of Professor _____________________________________________, your services are requested as members of the Doctoral Committee, under their chairship, for the applicant who has petitioned for admission to candidacy for the Doctor of Philosophy degree.

Based on your judgement of the student’s progress and their presentation of the Dissertation Proposal, please indicate below “Yes” or “No” on the line with your signatures, your replies to the two questions concerning the application:

(1) Do you recommend that this student be admitted to the Ph.D. candidacy?

(2) Are you willing to accept membership of his/her Doctoral Committee?

(1) YES OR NO (2) YES OR NO SIGNATURES OF COMMITTEE MEMBERS DATES

Note: Committee members who do not approve this application or who are unwilling or unable to serve on this committee may (if they wish) forward comments directly to the Associate Dean for Graduate Programs, Swanson School of Engineering.

ROUTING INSTRUCTIONS: AFTER PART III IS COMPLETED: THE MAJOR ADVISOR WILL FORWARD APPLICATION TO THE ASSOCIATE DEAN FOR GRADUATE PROGRAMS FOR FINAL ACTION.

REMARKS AND ADDITIONAL INFORMATION

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

FINAL APPROVAL ON APPLICATION

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

ASSOCIATE DEAN FOR GRADUATE PROGRAMS AND DATE
Rubric for Evaluating PhD Dissertation (This page to be filled out by Committee Chair or Graduate Director)

Student _______________________________________          Advisor ______________________________________

Dissertation Title ___________________________________________________________________________________________________________

Date of entry into PhD Program

┴

____________________     Student was (check one) ______ part time   or   ______ full time.

Date of Passing Preliminary Exam ____________________   Date of Proposal ____________________ Date of Defense ____________________

Total time to complete PhD degree (circle one):        > 5.0 years       4.5-5.0 years       3.5-4.5 years      3.0-3.5 years      < 3.0 years

This student produced (fill in the number):

Scoring Factor (SF):   Raw Scores: (Number × SF)

____ Accepted or published journal articles  1.5 _____
____ Additional Submitted journal articles  1.0 _____
____ Conference publications  0.5 _____
____ National Conference presentations  0.3 _____
____ Additional Potential Journal publications  0.2 _____

Total Publication Performance Score: __________

Committee Members (and Department):

_____________________________________________________ ___________________________________________________________

_____________________________________________________ ___________________________________________________________

_____________________________________________________ ___________________________________________________________

_____________________________________________________ ___________________________________________________________

• At the conclusion of the defense, each committee member should fill out the response sheet. For each attribute which a committee member feels is somewhat or very deficient, a short explanation should be provided.

• This document should be completed, even if the committee feels that the thesis is unacceptable.

• Please attach a copy of the abstract and conclusions to this evaluation form. The adviser should also include copies of any journal publications or referred conference proceedings that have already resulted from this dissertation

• Place of employment or additional graduate study, if known __________________________________________________________________


\( ^1 \)Either when the student successfully completed an MS degree, successfully completed 8 courses beyond the BS degree if skipping the MS degree, or changed projects and/or research advisors.
Ph.D. Thesis Response Sheet

(one for each committee member – circle response and return directly and confidentially to designated department administrative staff)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Very Deficient</th>
<th>Somewhat Deficient</th>
<th>Acceptable</th>
<th>Very Good</th>
<th>Outstanding</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of dissertation research</td>
<td>Barely acceptable, among the bottom 10% of dissertations at Pitt</td>
<td>Acceptable, but disappointing (10th to 25th percentile of dissertations at Pitt)</td>
<td>Acceptable (25th to 75th percentile of dissertations at Pitt)</td>
<td>Among 75th to 90th percentile of dissertations at Pitt</td>
<td>Among top 10% of dissertations at Pitt.</td>
<td></td>
</tr>
</tbody>
</table>

**Contributions**

- Requires committee to stretch to find contribution.
- Closer to MS than outstanding PhD dissertation
- Extends prior knowledge to some degree; In total is a contribution, but contains no single major contribution.
- Demonstrates originality
- Makes some contributions
- Introduces new methodology or techniques to field.
- Very original work;
- At least one important contribution
- Original and creative.
- Novel and important technical contributions;

**Quality of writing**

- Requires a professional editor
- Sentence structure, language and style deficient
- Major revisions required for technical content
- Writing is weak
- A number of typos, grammatical and spelling errors
- A number of technical changes required.
- Limited number of typos (grammatical errors and spelling) that do not detract from work
- Some changes necessary
- Very well written;
- Easy to read and understand
- Few changes or additions required. Significant technical contributions
- Well organized, relevant, and technically complete
- Excellent clarity and use of references
- Well edited
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Very Deficient</th>
<th>Somewhat Deficient</th>
<th>Acceptable</th>
<th>Very Good</th>
<th>Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defense</td>
<td>• Very poorly organized.</td>
<td>• Not well organized; Rambled; dwelt too long on less important aspects</td>
<td>• Acceptable – slides clear Good presentation skills</td>
<td>• Well thought out slides. Professional presentation</td>
<td>• Well organized, very professional, All questions addressed in a knowledgeable and respectable manner. Slides outstanding.</td>
</tr>
<tr>
<td></td>
<td>• Disjointed presentation.</td>
<td>• Had difficulty with questions.</td>
<td>• Able to answer most questions</td>
<td>• Almost all questions addressed in a professional manner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Unable to answer a number of questions.</td>
<td>• Some slides difficult to read Typos and other errors in slides.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Slides of very poor quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other - explain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(09/16/2008)

Any additional comments and explanations for any perceived deficiencies:
### Rubric for Evaluating Masters Thesis

<table>
<thead>
<tr>
<th>Student</th>
<th>Advisor</th>
</tr>
</thead>
</table>

| Thesis Title | |
|---------------||

<table>
<thead>
<tr>
<th>Date of entry into MS Program</th>
<th>Student was (check one) ______ part time or ______ full time.</th>
</tr>
</thead>
</table>

| Date of Defense | |
|-----------------||

<table>
<thead>
<tr>
<th>Total time to complete MS degree (circle one):</th>
<th>&gt; 36 mos</th>
<th>30-36 mos</th>
<th>24-30 mos</th>
<th>18-24 mos</th>
<th>&lt;18 mos</th>
<th>(Time Score 1 to 5)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>This student has produced (fill in the number):</th>
<th>Scoring Factor (SF):</th>
<th>Raw Scores: (Number × SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>____ Accepted or published journal articles</td>
<td>2.5</td>
<td>____</td>
</tr>
<tr>
<td>____ Additional submitted journal articles</td>
<td>2.0</td>
<td>____</td>
</tr>
<tr>
<td>____ Conference publications</td>
<td>1.5</td>
<td>____</td>
</tr>
<tr>
<td>____ National Conference presentations</td>
<td>1.0</td>
<td>____</td>
</tr>
<tr>
<td>____ Additional potential Journal publications</td>
<td>0.5</td>
<td>____</td>
</tr>
</tbody>
</table>

| Total Publication Performance Score: | |

| Committee Members (and Department): | |
|-------------------------------------||
|-------------------------------------||
|-------------------------------------||
|-------------------------------------||

- At the conclusion of the defense, each committee member should fill out the response sheet. For each attribute which a committee member feels is somewhat or very deficient, a short explanation should be provided.
- This document should be completed, even if the committee feels that the thesis is unacceptable.
- Please attach a copy of the abstract and conclusions to this evaluation form. The adviser should also include copies of any journal publications or referred conference proceedings that have already resulted from this dissertation.
- Place of employment or additional graduate study, if known | |
### MS Thesis Response Sheet

*(one for each committee member – circle response and return directly and confidentially to designated department administrative staff)*

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Very Deficient</th>
<th>Somewhat Deficient</th>
<th>Acceptable</th>
<th>Very Good</th>
<th>Outstanding</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of thesis.</td>
<td>Barely acceptable, among the bottom 10% of theses that we’ve reviewed</td>
<td>Acceptable, but disappointing (10(^{th}) to 25(^{th}) percentile of theses at Pitt.)</td>
<td>Acceptable (25(^{th}) to 75(^{th}) percentile of theses at Pitt.)</td>
<td>Among 75(^{th}) to 90(^{th}) percentile of theses at Pitt</td>
<td>Among top 10% of theses at Pitt</td>
<td></td>
</tr>
<tr>
<td>Contributions</td>
<td>• Requires committee to stretch to find originality</td>
<td>Shows a little originality, but mostly pedantic and plodding</td>
<td>• Demonstrates originality</td>
<td>• Original, creative work;</td>
<td>• Original and creative.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Closer to BS than MS work</td>
<td></td>
<td>• Makes limited contributions</td>
<td>• At least one good contribution for an MS thesis.</td>
<td>• Several important contributions for an MS thesis.</td>
<td></td>
</tr>
<tr>
<td>Quality of writing</td>
<td>• Requires a professional editor</td>
<td>• Writing is weak</td>
<td>• Limited number of typos (grammatical errors and spelling) that do not detract from work</td>
<td>• Very well written;</td>
<td>• Novel technical contributions; could be the basis of PhD work.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sentence structure, language and style deficient</td>
<td>• A number of typos, grammatical and spelling errors</td>
<td>• Some changes necessary</td>
<td>• Easy to read and understand</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Major revisions required for technical content</td>
<td>• A number of technical changes required.</td>
<td>• Some new technical contributions</td>
<td>• Few changes or additions required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Significant technical contributions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>Very Deficient</td>
<td>Somewhat Deficient</td>
<td>Acceptable</td>
<td>Very Good</td>
<td>Outstanding</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Defense</td>
<td>• Very poorly organized.</td>
<td>• Not well organized;</td>
<td>• Acceptable – slides clear</td>
<td>• Well thought out slides.</td>
<td>• Well organized, very professional,</td>
<td>• Slides outstanding.</td>
</tr>
<tr>
<td></td>
<td>• Disjointed presentation.</td>
<td>• Rambled; dwelt too long on less important aspects</td>
<td>• Good presentation skills</td>
<td>• Professional presentation</td>
<td>• All questions addressed in a knowledgeable and respectable manner.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Unable to answer a number of questions.</td>
<td>• Had difficulty with questions.</td>
<td>• Able to answer most questions</td>
<td>• Almost all questions addressed in a professional manner</td>
<td>• Slides outstanding.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Slides of very poor quality</td>
<td>• Some slides difficult to read</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Typos and other errors in slides.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student has potential for</td>
<td>No</td>
<td>May have difficulty completing PhD at Pitt; should consider a lesser institution</td>
<td>Yes</td>
<td>Definitely at Pitt or an aspiration institution.</td>
<td>Without a doubt at Pitt or one of the top five institutions</td>
<td></td>
</tr>
<tr>
<td>PhD work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(09/10/2008) –

Any additional comments and explanations for any perceived deficiencies: