

**Graduate Handbook
for
Materials Science and Engineering**

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

Academic Year 2021-2022



Graduate Degrees in Materials Science and Engineering offered in the Department of Mechanical Engineering and Materials Science of the School of Engineering at the University of Pittsburgh

The Department of Mechanical Engineering and Materials Science (MEMS) offers advanced degrees in Materials Science and Engineering (MSE), including Master of Science (MS) and Philosophical Doctor (PhD).

Doctor of Philosophy Program

The doctor of philosophy (PhD) program in the Department of Mechanical Engineering and Materials Science is a research degree leading largely to careers in teaching and research in academia, government and industry. The program is designed for excellent students. Students develop an understanding at the highest level in their areas of specialization and their research must lead to an original contribution to the field in the PhD dissertation.

PhD studies are a demanding (and rewarding) experience that requires a strong interest in research in the selected area of specialization. The PhD program has been designed to optimize the fundamental education of students in materials science and engineering, at the same time providing much required advanced specialization. The program is designed to develop the student's ability to think about materials science and engineering at a high level in order to provide the foundation necessary to cross into other materials-related interdisciplinary areas, as required by future career developments.

Please view the [current graduate course listings](#).

Application Requirements

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 in materials science and engineering and/or other graduate-level courses as deemed necessary by the Graduate Admissions Committee.

PhD Program Requirements

A minimum of 72 credits beyond the BS level is required for the PhD. No more than 30 credits may be accepted for a master's degree awarded by another institution to meet the minimum credit requirement. In recognition of graduate study beyond the master's degree successfully completed elsewhere, no more than 12 additional

credits may be accepted at the time of admission to meet the minimum credit requirement. No more than 30 credits may be accepted for a previously earned PhD degree in recognition of master's degree work.

Fulfilling the minimum requirements of the PhD program in the Department of Mechanical Engineering and Materials Science involves

- a) Completion of course work,
- b) Passing the Qualifying Examination (can be attempted twice),
- c) Preparing a PhD Dissertation Proposal and Passing a Comprehensive Exam,
- d) Execution of PhD level Original Research,
- e) Preparation and Defense of the Doctoral Thesis.

Residency Requirement

Students seeking the PhD degree are required to engage in a minimum of one term of full-time doctoral study, which excludes any other employment except as approved by their departments.

Required Coursework

Of the total of 72 credits required for the PhD degree a minimum of 36 credits must be coursework beyond the Bachelor of Science (BS) degree. PhD students must maintain a minimum QPA of 3.3 (B+) in this coursework. The coursework consists of (I) a materials core (six required courses students must take in the first year of enrollment), (II) a group of courses tailored for each student's research and as required technical broadening beyond the MSE focus, (III) courses to address mathematical/numerical skills, and (IV) PhD Research and Dissertation credits. Information on and listings of Materials Science and Engineering graduate courses can be found [here](#). The student's advisor must approve the course sequence selection.

The 18 credits core course component must be taken within the first year of the program. Typically, PhD students will carry a **course load of three courses per term** until their coursework is completed. Not all of the advanced MSE courses can be offered each year. If a student's background is insufficient for a given graduate course, the student must prepare by attending appropriate undergraduate courses or through independent study. This should be arranged in consultation with the student's faculty advisor and the lecturing faculty of the relevant course(s).

(I) MSE Core Courses (18 credits)

As part of the MSE core a student must take the following six MSE courses (18 credits) within the first fall and spring term after admission:

- 1) MSE 2067: Elements of Materials Science and Engineering 1 (Fall),

- 2) MSE 2003: Structure of Materials (Fall),
- 3) MSE 2011: Thermodynamics of Materials/Energetics (Fall),
- 4) MSE 2013: Kinetics in Materials Science (Spring),
- 5) MSE 2015: Electromagnetic Properties of Materials (Spring),
- 6) MSE 2030: Mechanical Behavior of Materials (Spring).

Students must score at least a B (3.0) in each of these six classes. If a student does not get at least a letter grade of B, the class must be taken a second time. These classes must be successfully completed before the student can apply for admission to PhD Candidacy.

(II) Advanced and Technical Elective Courses (≥ 12 credits)

A student must take advanced courses and technical electives. These are comprised of at least two courses (6 credits) selected by the student and his or her advisor as the best advanced preparation for research in the area of the dissertation, and two courses, as a broadening experience, to complement the student's PhD specialization and contribute significantly to career preparation.

(III) Mathematical/Numerical Courses

The student is required to take two mathematics/numerical courses for six (6) credits beyond those required for the materials science and engineering Bachelor of Science degree. They can be satisfied by many courses. This requirement may be waived if it was met in a previous program.

(IV) PhD Research and Dissertation Credits

Each student must also have:

- At least six (6) credits of MSE 3997 (PhD Research);
- At least 12 credits of MSE 3999 (PhD Dissertation);

Please note that registration for MSE 3999 is allowed only after the student has passed the Comprehensive Examination and defended the PhD Proposal, which qualifies the student for the status of PhD Candidacy.

A total of up to twelve (12) credits may be taken in relevant science, math, engineering disciplines outside of the MSE designation of graduate level courses and in different departments than MEMS.

The selection of courses, in general, must be acceptable to the student's advisor. The course requirements described in these guidelines are a minimum requirement. The minimum requirement of 72 credits of graduate work must be satisfied by combinations of research, course work and transfer credits for the award of a PhD degree. Students are allowed to take additional courses with the

agreement of their advisors. In some cases, these courses may be suggested by the PhD Committee for better preparation for a given research area. Note that completion of the PhD degree and admission PhD candidacy require a GPA of B+ or better (≥ 3.3)

Qualifying Examination

The qualifying examination is a multi-component examination to assess the student's academic foundations, the ability to synthesize and analyze basic materials science and engineering concepts, and the student's aptitude for the successful execution of PhD level original research.

To advance towards preparation for the PhD dissertation proposal and the Comprehensive exam the student has to

- (i) Achieve academic excellence in the six (6) MSE core course sequence (grades of letter grade of B (3.0) or better in each of them, see above)

and

- (ii) Pass the PhD qualifying examination.

Format of the PhD Qualifying Examination:

The PhD qualifying examination is based on a literature review combined with a related mini-proposal in a general topic area suited to each student's anticipated research project. The student will write a paper and then present the paper orally (30 minute presentation) to the examining committee and then be examined orally on the topic area and related core course material.

Topic: The topic for the paper should be in the same general field as the student's research but not exactly the same as their specific research topic. Appropriate topic descriptions should be developed by the advisor and submitted to the Qualifying Exam committee for review in advance.

Written document: The written document must be submitted two (2) weeks prior to the oral presentation. The written document should be no more than 15 pages long (1 inch margins, single spaced, including any necessary figures). It should include a Motivational section describing why the topic is of general importance, a Background/Introduction section that summarizes what is known ("state-of-the-art"), a Remaining Questions section that describes the major issues that still need to be addressed, and a Research Plan that describes experiments and methods of interpretation that can be used to address these open questions. An appropriate list of References should be included at the end.

Oral exam: The examining committee consists of 3 faculty, 1 of whom is the coordinator for the entire qualifier process for that year – this person sits on all the committees. The other two members are independent faculty (not to include the advisor).

Timing: The qualifier will be given once per year at the end of the spring term – all new PhD degree students must take the exam in the first year. Special students (less prepared) may delay until the second year if the advisor petitions the graduation committee.

Second attempts: If the student does not pass the exam, a retake is allowed if the advisor petitions the graduate committee and commits to continuing to support the student for the 2nd year. The second attempt can occur the following spring semester or earlier in the fall, if the advisor and student can arrange for 3 committee members (which includes the previous year's examining committee chair) to be present and administer the exam. However, this will only be done in the fall for retakes. First time exams will not be given in the fall.

Comprehensive Examination

The dissertation proposal conference is the comprehensive examination in the research area of the dissertation. This is an oral examination, and the PhD Dissertation Committee administers it. To be eligible for this, a student must have:

- i) Passed the preliminary (qualifying) examination.
- ii) Met with the Dissertation Committee at least six months earlier.
- iii) Completed or be close to completion of the coursework of the common core, the advanced courses, and the math courses with a minimum QPA of 3.3 (B+).

The student should present the proposal for the thesis research as a public seminar shortly after approval by the dissertation committee has been obtained.

DISSERTATION COMMITTEE

As soon as possible after passing successfully the Qualifying Exam a request to appoint a Dissertation Committee must be submitted by the student's major advisor and within about six months a first meeting of the committee is to be held to guide the student in his or her final specialization. This meeting is not an examination. Only a broad definition of the PhD dissertation and the area of specialization are necessary in order to appoint the Dissertation Committee and hold the first meeting. The Dissertation Committee administers the PhD dissertation proposal conference and is required to meet with the student at least once a year after the dissertation proposal to monitor the student's progress.

A Dissertation Committee consists of four or more persons, including at least one from another department in the University of Pittsburgh or from an appropriate graduate program at another academic institution. At least three members or the

majority of the committee, including the major advisor, must be full or adjunct members of the Graduate Faculty in the Department of MEMS. Qualified individuals with non-academic affiliations, e.g. in industry or government research laboratories, may be committee members in addition to the minimum required four academic members. This committee must review and approve the proposed research project before the student may be admitted to candidacy. A published [Graduate Faculty Membership Roster](#) is updated three times a year.

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 of the dissertation. It conducts the final oral examination and determines whether the dissertation meets accepted standards.

Membership of the doctoral committee may be changed whenever it is appropriate or necessary, subject to the approval of the department chair and the dean.

Comprehensive Examination

In the comprehensive examination, the student must demonstrate excellent knowledge and understanding of the literature and the fundamentals of the selected subject area of the dissertation. In a well-designed course of study the coursework provides much of this foundation. In the dissertation proposal, the student presents a plan of research that develops logically and leads to the anticipated original contributions, which must be clearly stated. A clear presentation of professional quality not exceeding reasonable limits of time (≈ 45 minutes) is expected in the dissertation proposal. The student must submit a written dissertation outline to the members of the Dissertation Committee at least a week before the examination.

This comprehensive examination is designed to ascertain whether the student is prepared satisfactorily for the dissertation and to perform research in the selected area of specialization. From a broader perspective, it promotes skills necessary for oral presentations and demonstrates the ability of the student to "think on his or her feet". The student will be asked questions on the proposed research designed to gauge originality and feasibility of the proposed plan of work, and the student's command of the relevant literature. Questions typically relate to the fundamentals of the proposed research and the advanced courses taken by the student. As a result of their first meeting with the student the Dissertation Committee may have defined additional areas of responsibility in preparation for this Comprehensive Examination not listed here in these general guidelines.

Public Seminar

Shortly (typically two to six weeks) after completing successfully the closed-door, private presentation of the PhD proposal to the Dissertation Committee, the student will present his or her dissertation proposal to the department and the community in a public seminar. The student will have included the retained suggestions made during the private, closed-door dissertation proposal. This seminar must emphasize

the plans for the proposed study and their justification, methods selected, anticipated difficulties, sources of error, etc. Preliminary results should be used only to illustrate and support the pertinent points of the proposal. The audience is encouraged to ask questions and make suggestions. The Dissertation Committee will review the presentation and the answers to the questions as the final step of the Comprehensive Examination. The final decision is made by a unanimous decision of the committee. The PhD proposal examination can be attempted only twice. **Successful completion of the Comprehensive Examination and PhD-Dissertation Proposal entitles the student to transition to the status of PhD Candidacy.** The Dissertation Committee must complete the Application for Admission to Candidacy for Doctoral Degree and the student's faculty advisor must complete the relevant sections of a new Graduate Engineering Action Form.

Time Limit

Only considering Fall and Spring terms, it is expected that all previous requirements, which lead to the status of **Candidacy for the Doctoral Degree will be attained within four to five academic terms** after initial enrollment for students with an MSE background and within six or fewer terms for students with a non-MSE background. Students who do not meet this time limit must petition the Graduate Committee and Chair of the Department for a time extension. If the petition is rejected, the student will lose his or her financial support.

Role of the PhD Advisor

Every graduate student working toward a PhD must have a PhD advisor. In some cases, the graduate student coordinator could serve as the student's advisor for an initial period of one semester. This arrangement would be for an interim time period only, and the student must find a regular advisor for his or her PhD program before commencing the second semester of his or her program of study. The student's advisor plays a central role in planning with the student an appropriate course work selection that may be more specific than these guidelines. Registration for appropriate courses must be done in consultation with the advisor. If the student desires to follow a coursework program that does not fit within these guidelines, the approval of the MSE graduate faculty must be obtained. The advisor also plays an important role in guiding the PhD dissertation research and is responsible for organizing and conducting as chair the comprehensive examination and dissertation proposal conference and the dissertation defense.

Defending a PhD Dissertation

PhD Dissertation Preparation

The PhD dissertation reports and discusses original contributions to the field of specialization and should contain results that are suitable for publication in appropriate archival journals. The PhD dissertation generally involves extensive research (experimental or theoretical) that is usually carried out on campus. In all cases, the research work must be unclassified and available for publication. The

PhD dissertation must be based on the research performed personally and independently by the student and must constitute an original contribution to the field. It is the responsibility of the student to keep his or her advisor informed of the progress of the dissertation research and thesis preparation on a regular basis. It is also recommended that the student updates the PhD-Dissertation Committee on progress but somewhat less frequently than for the more closely involved faculty advisor. Assessing the originality of the PhD candidate's research is a particular focus of the faculty advisor and committee members.

PhD Dissertation Private Presentation

In order to produce research of the highest caliber, it is necessary that adequate time be given for the review to a dissertation before it is accepted. After a first review of the dissertation by at least the MSE members of the PhD-Dissertation Committee the oral dissertation defense is held in public.

Once it has been determined by the dissertation advisor that the student may begin to write up his or her dissertation in the form of a PhD thesis document, he or she writes a rough draft. The rough draft must contain all parts of the dissertation, including figures and graphs, bibliography, etc., in legible form. The School of Engineering through the Office of Administration strictly enforces the format requirements for the written PhD thesis document. Hence, it is strongly recommended and proven best practice to prepare even the rough draft to conform as much as possible to these requirements. This facilitates a more efficient preparation of the final copy of the dissertation document, which must be filed both in hardcopy and electronically. [Read guidelines on preparing a dissertation.](#) A *Style and Form Manual* for a thesis is available in the [Engineering Office of Administration](#).

A copy of the rough draft of the dissertation must be available to the Dissertation Committee at least two weeks before the closed-door meeting of the Dissertation Committee to conduct the private part of the PhD defense. In the closed-door meeting the student answers any questions deemed pertinent by the members of the committee in order to assess the suitability of the dissertation for fulfillment of the relevant requirements of the PhD degree.

PhD Dissertation: Public Presentation

After a closed-door review of the dissertation by the committee the dissertation is defended publicly in the presence of the full Dissertation Committee.

With the guidance of his or her advisor, the student modifies the dissertation draft to satisfy the committee. After the dissertation has been reviewed in this manner, it will be prepared in its final form. The student must supply at least three print-copies of the PhD dissertation, one each for the advisor, the MEMS department, and the library. One copy is to be made available in the department office for consultation by any member of the industrial or academic community for two weeks prior to the public presentation and final defense.

An announcement of the oral presentation of the dissertation defense is posted and distributed in the same way as departmental seminar presentations are announced at least two weeks prior to the date of the seminar. Best effort should be made to place an announcement in the University Times newspaper. Ideally, this oral PhD presentation and defense seminar will be held during the day and time (usually Thursday at 3 p.m.) allocated for the Departmental MSE Graduate Seminar series. The graduate seminar coordinator must be contacted well ahead of time to ensure availability of such a seminar date.

After a seminar-type presentation of the PhD dissertation the student answers any questions from the audience and the Doctoral Committee.

Exam Decision

The final decision on the examination is made by the Dissertation Committee considering the performance of the student in all parts of the examination. If the vote of the committee is not unanimous, it will be referred to the Department Chair.

Following the PhD public presentation, the advisor must complete any change-of- grade forms, as needed, and also complete the appropriate sections of a new Graduate Engineering Action Form. The final thesis document must be submitted and satisfy the [New guidelines](#) of the School of Engineering.

Academic Integrity and Avoiding Plagiarism:

The writing must represent student's own original work. Student must paraphrase information from textbooks or research articles into their own writing. All sources and statements must be properly cited. **Students are required to enroll in the University's online Academic Integrity Canvas Course & Badge** available at the following link:

<https://pitt.libguides.com/academicintegrity/plagiarism>

Plagiarism Checking

Students are required to submit a plagiarism report obtained from an online plagiarism detection software that allows uploading a written document and checking it against a massive record of published material. This report must be submitted along with the written research proposal. The University recommends iThenticate. Students can register for an account at the following link:

<https://www.osp.pitt.edu/ithenticate>. Turnitin is also another acceptable option for plagiarism checking. <https://www.etskb-fac.cidde.pitt.edu/other-applications/turnitin/>

Contact

MSE Graduate Director: Jung Kun Lee, PhD 538H
Benedum Hall
412-648-3395 E-mail: jul@pitt.edu

MEMS Graduate Administrator: Richard Mishler
636D Benedum Hall
412-624-9722 E-mail: rim76@pitt.edu

GRADUATE ENGINEERING ACTION FORM

STUDENT'S NAME - LAST

FIRST

MI

PEOPLESOFT ID

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DEPARTMENT

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MASTER DEGREE PROGRAM

STATUS

FULL PROVISIONAL

EFFECTIVE DATE (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

COMPREHENSIVE EXAM

PASS FAIL

DATE OF EXAM (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

FINAL DEFENSE (ORAL)

PASS FAIL

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

FULL PROVISIONAL

EFFECTIVE DATE (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

PRELIMINARY/QUALIFIER EXAM

PASS FAIL

DATE OF EXAM (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

COMPREHENSIVE EXAM

PASS FAIL

DATE OF EXAM (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

ADMISSION TO CANDIDACY

PASS FAIL

EFFECTIVE DATE (MONTH/DAY/YEAR) _____

GRADUATE COORDINATOR/ADVISOR SIGNATURE _____

FINAL DEFENSE

PASS FAIL

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

NAME OF APPLICANT	PSID	DEPARTMENT
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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.

APPLICANT'S SIGNATURE AND DATE	ADDRESS
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.

NAMES OF FACULTY MEMBERS	DEPARTMENT AFFILIATION

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 _____

NAME OF	DEPARTMEN
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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 Program¹ _____ 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 _____

¹Either 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)

Attribute	Very Deficient	Somewhat Deficient	Acceptable	Very Good	Outstanding	Comments
Quality of dissertation research	Barely acceptable, among the bottom 10% of dissertations at Pitt	Acceptable, but disappointing (10 th to 25 th percentile of dissertations at Pitt)	Acceptable (25 th to 75 th percentile of dissertations at Pitt)	Among 75 th to 90 th percentile of dissertations at Pitt	Among top 10% of dissertations at Pitt.	
Contributions	<ul style="list-style-type: none"> Requires committee to stretch to find contribution. Closer to MS than outstanding PhD dissertation 	<ul style="list-style-type: none"> Extends prior knowledge to some degree; In total is a contribution, but contains no single major contribution. 	<ul style="list-style-type: none"> Demonstrates originality Makes some contributions Introduces new methodology or techniques to field. 	<ul style="list-style-type: none"> Very original work; At least one important contribution 	<ul style="list-style-type: none"> Original and creative. Novel and important technical contributions; 	
Quality of writing	<ul style="list-style-type: none"> Requires a professional editor Sentence structure, language and style deficient Major revisions required for technical content 	<ul style="list-style-type: none"> Writing is weak A number of typos, grammatical and spelling errors A number of technical changes required. 	<ul style="list-style-type: none"> Limited number of typos (grammatical errors and spelling) that do not detract from work Some changes necessary Some new technical contributions 	<ul style="list-style-type: none"> Very well written; Easy to read and understand Few changes or additions required. <p>Significant technical contributions</p>	<ul style="list-style-type: none"> Well organized, relevant, and technically complete Excellent clarity and use of references Well edited 	

Attribute	Very Deficient	Somewhat Deficient	Acceptable	Very Good	Outstanding	
Defense	<ul style="list-style-type: none"> • Very poorly organized. • Disjointed presentation. • Unable to answer a number of questions. • Slides of very poor quality 	<ul style="list-style-type: none"> • Not well organized; • Rambled; dwelt too long on less important aspects • Had difficulty with questions. • Some slides difficult to read • Typos and other errors in slides. 	<ul style="list-style-type: none"> • Acceptable – slides clear • Good presentation skills • Able to answer most questions 	<ul style="list-style-type: none"> • Well thought out slides. • Professional presentation • Almost all questions addressed in a professional manner 	<ul style="list-style-type: none"> • Well organized, very professional, • All questions addressed in a knowledgeable and respectable manner. • Slides outstanding. 	
Other – explain						

(09/16/2008)

Any additional comments and explanations for any perceived deficiencies:

Rubric for Evaluating Masters Thesis (This page filled out by Committee Chair or Graduate Director)

Student _____ Advisor _____

Thesis Title _____

Date of entry into MS Program _____ Student was (check one) _____ part time or _____ full time.

Date of Defense _____

Total time to complete MS degree (circle one): > 36 mos 30-36 mos 24-30 mos 18-24 mos <18 mos (Time Score 1 to 5)

This student has produced (fill in the number): Scoring Factor (SF): Raw Scores: (Number × SF)

____ Accepted or published journal articles 2.5 _____

____ Additional submitted journal articles 2.0 _____

____ Conference publications 1.5 _____

____ National Conference presentations 1.0 _____

____ Additional potential Journal publications 0.5 _____

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)

Attribute	Very Deficient	Somewhat Deficient	Acceptable	Very Good	Outstanding	Comments
Quality of thesis.	Barely acceptable, among the bottom 10% of theses that we've reviewed	Acceptable, but disappointing (10 th to 25 th percentile of theses at Pitt.)	Acceptable (25 th to 75 th percentile of theses at Pitt.)	Among 75 th to 90 th percentile of theses at Pitt	Among top 10% of theses at Pitt	
Contributions	<ul style="list-style-type: none"> • Requires committee to stretch to find originality • Closer to BS than MS work 	Shows a little originality, but mostly pedantic and plodding	<ul style="list-style-type: none"> • Demonstrates originality • Makes limited contributions 	<ul style="list-style-type: none"> • Original, creative work; • At least one good contribution for an MS thesis. 	<ul style="list-style-type: none"> • Original and creative. • Several important contributions for an MS thesis. • Novel technical contributions; could be the basis of PhD work. 	
Quality of writing	<ul style="list-style-type: none"> • Requires a professional editor • Sentence structure, language and style deficient • Major revisions required for technical content 	<ul style="list-style-type: none"> • Writing is weak • A number of typos, grammatical and spelling errors <p>A number of technical changes required.</p>	<ul style="list-style-type: none"> • Limited number of typos (grammatical errors and spelling) that do not detract from work • Some changes necessary • Some new technical contributions 	<ul style="list-style-type: none"> • Very well written; • Easy to read and understand • Few changes or additions required. • Significant technical contributions 	<ul style="list-style-type: none"> • Well organized, relevant, and technically complete • Excellent clarity and use of references • Well edited 	

Attribute	Very Deficient	Somewhat Deficient	Acceptable	Very Good	Outstanding	Comments
Defense	<ul style="list-style-type: none"> • Very poorly organized. • Disjointed presentation. • Unable to answer a number of questions. • Slides of very poor 	<ul style="list-style-type: none"> • Not well organized; • Rambled; dwelt too long on less important aspects • Had difficulty with questions. • Some slides difficult to read • Typos and other errors in slides. 	<ul style="list-style-type: none"> • Acceptable – slides clear • Good presentation skills • Able to answer most questions 	<ul style="list-style-type: none"> • Well thought out slides. • Professional presentation • Almost all questions addressed in a professional manner 	<ul style="list-style-type: none"> • Well organized, very professional, • All questions addressed in a knowledgeable and respectable manner. • Slides outstanding. 	
Student has potential for PhD work	No	May have difficulty completing PhD at Pitt; should consider a lesser institution	Yes	Definitely at Pitt or an aspiration institution.	Without a doubt at Pitt or one of the top five institutions	

(09/10/2008) –

Any additional comments and explanations for any perceived deficiencies: