

# Academic Assessment Plan Ph.D. / Mechanical Engineering

The following academic program assessment plan will demonstrate educational achievement and improvement through ongoing assessment of student learning. This academic assessment plan provides (1) specific program goals, (2) measureable student learning outcomes, and (3) a clearly defined timeline for student assessment, data analysis and reporting.

## Program Goals

*(Program goals are broad general statements of what the program intends to accomplish and describes what a student will be able to do after completing the program. The program goals are linked to the mission of the university and college.)*

1. Prepare students for independent research in mechanical engineering.
2. Prepare students to contribute new knowledge of fundamental or applied importance.
3. Prepare students to disseminate new knowledge of fundamental or applied importance.

## Student Learning Outcomes (SLO)

*(Student Learning Outcomes are defined in terms of the knowledge, skills, and abilities that students will know and be able to do as a result of completing a program. These student learning outcomes are directly linked to the accomplishment of the program goals.)*

1. Students will gain advanced knowledge in mechanical engineering.
2. Students will show proficiency in the foundational topics of mechanical engineering.
3. Students will gain an understanding of their research field to contribute new knowledge.
4. Students will contribute new knowledge of fundamental or applied importance.
5. Students will be able to communicate effectively during oral presentations.
6. Students will be able to communicate effectively in writing.

## Process and Timeline for Assessment

*(A process must be defined and documented to regularly assess student learning and achievement of student learning outcomes. The results of the assessment must be utilized as input for the improvement of the program.)*

1. Timeline for assessment and analysis

### Prerequisite actions

Action	Timeline
Student selects a major advisor.	First semester or early second semester.
Student selects an advisory committee and submits all necessary documentation to the department.	Early in second semester.

### Annual assessments

Action	Timeline
Student submits the Ph.D. Program of Study form to the department signed by their major advisor.	Annually prior to registration for spring classes (fall registration period).

Student submits Annual Graduate Student Academic Review form to the department signed by their major advisor.	Annually prior to registration for summer/fall classes (spring registration period).
Student and advisor complete online (Qualtrix) Graduate Student Performance Survey.	Annually prior to registration for summer/fall classes (spring registration period).
Student will give a research seminar in MEEG6800 Graduate Seminar.	Seminar meets once per week and students will give a seminar annually.

### ***One-time assessments***

Action	Timeline
Student takes three selected Ph.D. qualifying exams.	Direct BSME to Ph.D.: 3 <sup>rd</sup> semester in program. MSME to Ph.D.: 2 <sup>nd</sup> semester in program.
Student prepares a Ph.D. proposal and gives a seminar on their proposed work for their candidacy exam.	No later than 1 year after passing Ph.D. qualifying exams (including completing any conditions).
Student writes their Ph.D. dissertation and is given a final comprehensive exam (dissertation defense).	Minimum seven days before Graduate School Ph.D. dissertation submission deadline.

All data will be collected by the Assistant to the Graduate Program Coordinator and recorded in an Access and/or Excel database of graduate student progress. This database will be reviewed annually by the MEEG Graduate Studies Committee.

## 2. Means of assessment (indirect/direct)

### ***One-time assessments***

Student Learning Outcome	Assessment
1. Academic Progress	Cumulative GPA. Annual Graduate Student Academic Review.
2. Foundational Proficiency	Cumulative GPA. Ph.D. qualifying exams in 3 selected areas of mechanical engineering.
3. Understanding of Field	Student self-assessment in Graduate Student Performance Survey. Candidacy exam, Dissertation, Graduate Student Performance Survey.
4. Contribute New Knowledge	Student self-assessment in Graduate Student Performance Survey. Candidacy exam, Dissertation, Graduate Student Performance Survey.
5. Communicate Orally	Graduate Seminar, Student self-assessment in Performance Survey. Candidacy exam, Dissertation defense.
6. Communicate in Writing	Student self-assessment in Graduate Student Performance Survey. Candidacy exam, Dissertation.

## 3. Reporting of results

Results of graduate program assessment and plans for continuous improvement motivated by assessment data will be reported to the Dean of the College of Engineering annually by the Chair of the MEEG Graduate Studies Committee.

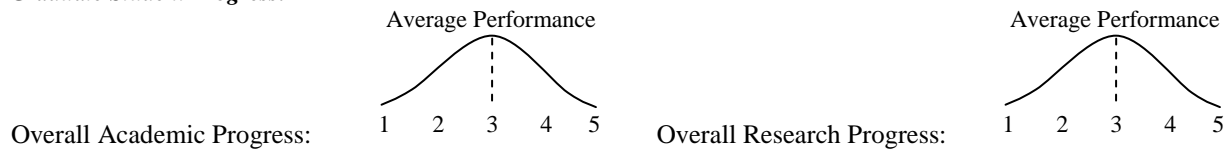
## Graduate Student Performance Survey Department of Mechanical Engineering

Graduate Student: \_\_\_\_\_ Major Professor: \_\_\_\_\_

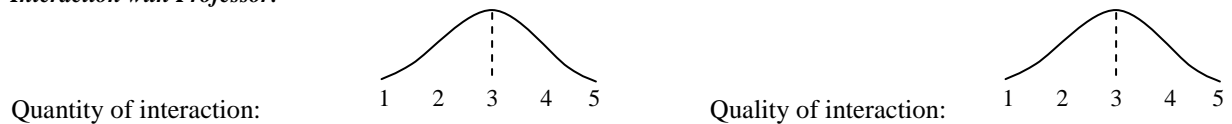
Review Period: \_\_\_\_\_ Date of review: \_\_\_\_\_

This form is designed to give the graduate student a one page visual indicator of the major professor's judgment of their performance during the previous academic year. This document is a qualitative assessment of the major professor's perceptions, not a quantitative assessment requiring justifying documentation. The data from this document will be maintained in a database in the Department of Mechanical Engineering and used for continuous improvement of the graduate program.

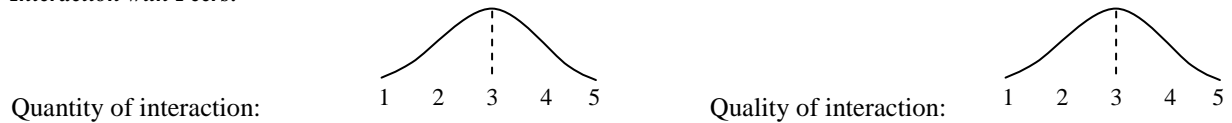
**Graduate Student Progress:**



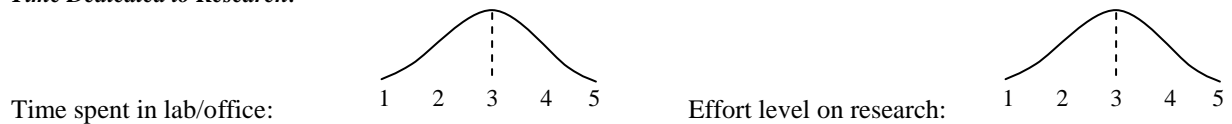
**Interaction with Professor:**



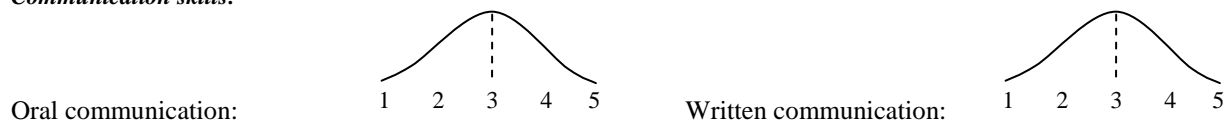
**Interaction with Peers:**



**Time Dedicated to Research:**



**Communication skills:**



Yes No I hereby attest that the student has made satisfactory progress toward the completion of his/her degree requirements.

**Comments:** \_\_\_\_\_

Yes No I recommend that the student continue to receive funding in support of his/her graduate studies.

**Comments:** \_\_\_\_\_

**Professor's Signature** \_\_\_\_\_ **Student's Signature** \_\_\_\_\_

# Graduate Student Performance Survey

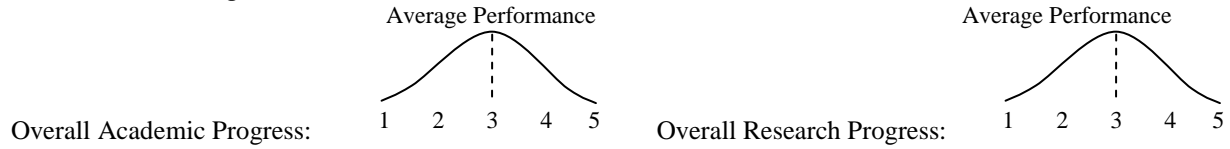
## Department of Mechanical Engineering

**Graduate Student:** \_\_\_\_\_

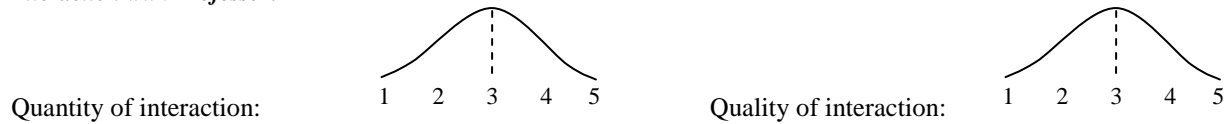
Review Period: \_\_\_\_\_ Date of review: \_\_\_\_\_

This form is designed to allow the graduate student to create a one page self-assessment of their performance during the previous academic year. This document is a qualitative assessment of the student's perceptions, not a quantitative assessment requiring justifying documentation. The data from this document will be maintained in a database in the Department of Mechanical Engineering and used for continuous improvement of the graduate program.

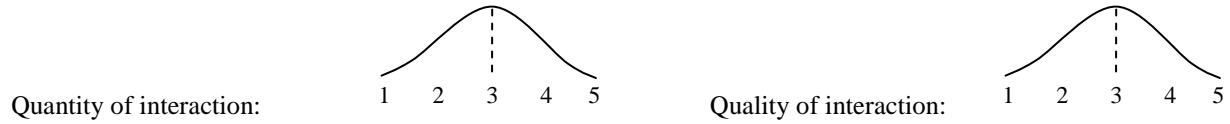
**Graduate Student Progress:**



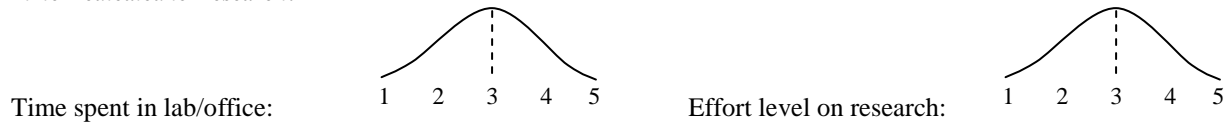
**Interaction with Professor:**



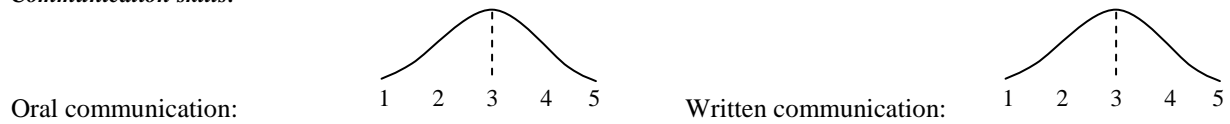
**Interaction with Peers:**



**Time Dedicated to Research:**



**Communication skills:**



Data from this form will be retained by the Department of Mechanical Engineering

**Student's Signature** \_\_\_\_\_