

Department of Mechanical Engineering
Assessment of Graduate Program – Ph.D. Degree
Student Learning Outcomes (SLO)

Student: _____ Faculty: _____ Date: ___/___/___

- The SLOs are evaluated by the Ph.D. committee at the time of defense.
- Both the written dissertation and oral defense are used as evidence.
- Each SLO is scored on a 1 to 4 scale roughly corresponding to grades of D/F through A.

1. Student demonstrates **expert knowledge of the literature** in a sub area of mechanical engineering.

Performance	Score	Evaluation of SLO
Exemplary	4	Student thoroughly documents and explains previous work relevant to the subject area and the bibliography has “review” quality.
Satisfactory	3	Student appropriately documents and explains previous work and the bibliography is not “review” quality.
Developing	2	Student demonstrates knowledge in most areas of his/her work but is weak in some others.
Unsatisfactory	1	Student cannot adequately document previous work and his/her knowledge of subject area is weak.

2. Student demonstrates the ability to **clearly explain and document** his/her research.

Performance	Score	Evaluation of SLO
Exemplary	4	Student clearly, logically and completely explains his/her work both in his/her technical arguments and in accompanying narratives at an accomplished and professional level.
Satisfactory	3	Student clearly, logically and completely explains his/her work at an appropriate level.
Developing	2	Student clearly explains his/her work in most areas but his/her explanations are weak in some others.
Unsatisfactory	1	Student fails to present clear, logical and complete arguments.

3. Student demonstrates the ability to **identify research directions independently**.

Performance	Score	Evaluation of SLO
Exemplary	4	Student demonstrates thorough self-critique of his/her own work, consistently identifies open questions, makes proposals for future work, and appears ready for independent research.
Satisfactory	3	Student demonstrates the ability to identify new research directions at an appropriate level.
Developing	2	Student identifies new areas of research when prodded, but does not do so independently.
Unsatisfactory	1	Student does not reflect on his/her own work or make proposals for future work.

4. Student obtains results **publishable in peer-reviewed journals or conferences**.

Performance	Score	Evaluation of SLO
Exemplary	4	Student produces one or more peer-reviewed publications.*
Satisfactory	3	Student obtains publishable results that must be prepared for submission.
Developing	2	Student must obtain additional results before research is publishable.
Unsatisfactory	1	Student does not produce work of publishable quality.

*Publication may be through a journal or conference.

Turn all completed forms into the departmental assessment coordinator.