**UT Department of Materials Science and Engineering (MSE)**

***PhD Dissertation* Learning Outcome Evaluation Form**

*The student’s committee is to agree upon and complete this form at the time of submission of the Written Dissertation and the Defense of Dissertation Oral Examination and turn it into the MSE Director of Graduate Studies.*

***General information:***

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ UTK ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date of Examination/Defense: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Provide an assessment of the student with respect to the following learning outcomes, based on the Written Dissertation and the Defense of Dissertation Oral Examination:***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Circle one for each outcome (1 = low, 2= medium, 3 = high)** | | |
| **Outcome / Assessment** | (1) Does Not Meet Expectations | (2) Meets Expectations | (3) Exceeds Expectations |
| **(1) Effectively analyze the literature to identify and evaluate important and related scholarly activities** | **Serious problems** exist, including the following: (1) fails to cite important literature and prior research in the topical area; and (2) if asked, demonstrates **little knowledge** of scholarly activities related to the subject matter. | Performs an **adequate** literature survey including: (1) cites some of the most important prior research regarding the topical area; and (2) if asked, demonstrates **sufficient knowledge** of scholarly activities related to the subject matter. | Performs a **comprehensive** literature survey including: (1) cites all of the most important prior research regarding the topical area; and (2) if asked, demonstrates **exceptional knowledge** of scholarly activities related to the subject matter. |
| **Outcome / Assessment** | (1) Does Not Meet Expectations | (2) Meets Expectations | (3) Exceeds Expectations |
| **(2) Effectively plan and conduct independent original research in materials science and engineering** | **Serious problems** exist, including any or all of the following: (1) research objectives are poorly defined; (2) research hypotheses are incoherent or flawed; (3) originality, creativity and insight are limited; and (4) expansion upon previous research is **limited**. | Demonstrates **satisfactory** ability to conduct original research, including: (1) research objectives are fairly clear; (2) research hypotheses are purposeful and sound; (3) originality, creativity and insight are all apparent; and (4) expansion upon previous research is **adequate**. | Demonstrates **exceptional** ability to conduct original research, including: (1) research objectives are unassailable; (2) research hypotheses are compelling and precisely crafted; (3) originality, creativity and insight are all exceptional; and (4) expansion upon previous research is evident and **exemplary**. |
| **Outcome / Assessment** | (1) Does Not Meet Expectations | (2) Meets Expectations | (3) Exceeds Expectations |
| **(3) Clearly communicate scholarly research and results through the *Dissertation* (and conference papers or journal articles)** | **Serious problems** exist, including any or all of the following: (1) numerous grammatical or spelling errors; (2) poor organization; and (3) **poor documentation** (citations, references, etc.). | **Adequate writing**, including the following: (1) few grammatical and spelling errors; (2) logical organization; and (3) **adequate documentation** (citations, references, etc.). | **Excellent writing**, including the following: (1) no grammatical and/or spelling errors; (2) reasoned and thoughtful organization; and (3) **good documentation** (citations, references, etc.). |
| **Outcome / Assessment** | (1) Does Not Meet Expectations | (2) Meets Expectations | (3) Exceeds Expectations |
| **(4) Clearly communicate scholarly research and results though an oral presentation (specifically, the *Defense of Dissertation Examination*)** | **Serious problems** exist, including any or all of the following: (1) delivers an unsatisfactory presentation on the topic; (2) fails to provide adequate coverage of the topic; and (3) if asked, provides **insufficient insight** regarding the subject matter. | Demonstrates **satisfactory** communication skills, including: (1) delivers a satisfactory presentation on the topic; (2) provides adequate coverage of the topic; and (3) if asked, provides **sufficient insight** regarding the subject matter. | Demonstrates **exceptional** communication skills, including: (1) delivers an excellent presentation on the topic; (2) provides good coverage of the topic; and (3) if asked, provides **comprehensive insight** regarding the subject matter. |
| **Outcome / Assessment** | (1) Does Not Meet Expectations | (2) Meets Expectations | (3) Exceeds Expectations |
| **(5) Critically think and create innovative solutions to engineering or scientific problems** | **Serious problems** exist, including the following: (1) demonstrates little knowledge of fundamental materials science concepts; and (2) demonstrates **little understanding** of the roles of either experiments or theory in the topical area. | Demonstrates **adequate** critical thinking, including: (1) an understanding of basic, fundamental materials science concepts; and (2) **sufficient insight** into the roles of experiment and theory in the topical area. | Demonstrates **excellent** critical thinking, including: (1) a mastery basic, fundamental materials science concepts; and (2) **impressive understanding** regarding the roles of experiment and theory in the topical area. |

***Approval:***

Major Professor Signature

Minor Professor (if applicable) Signature

Committee Member Signature

Committee Member Signature

Committee Member Signature

Committee Member Signature