**Rubric for Self-Assessment Processes**

**Student Outcome #1:** Ability to identify, formulate, and solve complex engineering problems applying principles of engineering, science, and mathematics.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Performance Indicators** | **Unsatisfactory** | **Developing** | **Meeting Expectations** | **Exceeding Expectations** |
| **Identify a mathematical and physical model of a system or process appropriate for a required solution of complex engineering problem** | The student does not identify mathematical and physical models applicable to complex engineering problems | The student identifies some mathematical and physical models applicable to complex engineering problems | The student identifies all mathematical and physical models applicable to complex engineering problems, making only minor mistakes | The student identifies all mathematical and physical models applicable to complex engineering problems with no mistakes and with justification |
| **Formulate complex engineering problems by applying physical and mathematical models** | The student does not formulate complex engineering problems using mathematical and physical models | The student formulates complex engineering problems using some mathematical and physical models | The student formulates complex engineering problems using mathematical and physical models, making only minor mistakes | The student correctly formulates complex engineering problems using mathematical and physical models with justification |
| **Solve complex engineering problems based on the identified model and present the solution** | The student does not solve complex engineering problems based on mathematical and physical models | The student partially solves complex engineering problems based on mathematical and physical models | The student solves complex engineering problems using mathematical and physical models, making only minor mistakes | The student solves complex engineering problems correctly using mathematical and physical models with justification |