VIP Senior Design Reflection, Outcomes, and Rubric (ROR)

Student: Major: Sem of SD: \_\_\_ 1st \_\_\_\_ 2nd

Team/Project: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Term (Fall/Spring and Year): \_\_\_\_\_\_ Mid/Final: \_\_\_\_\_

***Instructions: Edit/add to this document throughout your two Senior Design semesters (i.e., you will edit and resubmit this document for both the mid-semester and final assessment assignments instead of the “Individual Performance Evaluation (IPE)”.***

**A. Outcomes**

|  |  |
| --- | --- |
| **Outcome** | **Describe how you have demonstrated each outcome and the location of the evidence to support each claim. If not the final submission of the 2nd SD semester, indicate your plans to contribute to the demonstration of the outcome.**  |
| 1. An ability to apply engineering design to create a product that meets the specified needs of this engineering design experience with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
 |  |
| 1. An ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to the development of the product of this engineering design experience.
 |  |
| 1. An ability to identify, formulate, and solve complex engineering problems arising from this engineering design experience by applying principles of engineering, science, and mathematics.
 |  |
| 1. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives associated with this design experience.
 |  |
| 1. An ability to communicate effectively with a range of audiences appropriate to this design experience in both a written report and oral presentation.
 |  |
| 1. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the engineering design experience associated with this course.
 |  |
| 1. An ability to recognize ethical and professional responsibilities associated with this engineering design experience and make informed judgments which must consider the impact of the product of this engineering design experience in global, economic, environmental, and societal contexts.
 |  |

**B. Professional Development Record Completed to Date for current Semester**

|  |  |
| --- | --- |
| Activity | Completion or Planned Completion Date |
| 1. Welcome to VIP
 |  |
| 1. Purdue Undergraduate Research Conference – Abstract submission (or equivalent)
 |  |
| 1. Purdue Undergraduate Research Conference – Oral or Poster Presentation (or equivalent)
 |  |
| 1.
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*Consider team/project work and Professional Development (PD) activities in your reflection*

**C. Reflection**

1. **Describe your personal contributions to the project.**
2. **Describe how your contributions to this project built on the knowledge and skills you acquired in earlier course work.**
3. **Describe how you acquired and applied new knowledge as needed to contribute to this project. What learning strategies did you employ to do so?**
4. **How has your learning from this semester contributed to and/or impacted your long-term professional and educational goals?**
5. **Discuss your ethical and professional responsibilities as they relate to this engineering design experience.**
6. **Consider what the impact of the product of this engineering design experience could have in economic, environmental, societal, and global contexts. Discuss how you would make (or did make) an informed judgement as to your product’s impact in each of these four contexts?**

*To be completed by the VIP advisor:*

**Accomplishments and effort:**

\_\_Quantity of project accomplishments

\_\_ Quality of project accomplishments

\_\_ Initiative

\_\_ Work ethic

\_\_ Ability to overcome project setbacks

\_\_ Learning needed for the project

\_\_ Focuses effort on achieving goals

 \_\_ Manages time and tasks well

**\_\_ Overall**

**Documentation:**

\_\_ Individual documentation (quality/quantity)

\_\_ Contributions to team documentation

 (quality/quantity)

\_\_ Contributions to team poster and/or

 presentations

\_\_ Use of appropriate tools (e.g., Git)

**\_\_ Overall**

**Teamwork and Interactions:**

 \_\_ Participates fully in team (lab) meetings

 \_\_ Participates fully in sub-team meetings

 \_\_ Contributes fair share of team’s work with

 acceptable quality

 \_\_ Keeps commitments and completes

 assignments on time

 \_\_ Listens to teammates and respects their

 contributions

 \_\_ Communicates clearly. Shares information

 with teammates

 \_\_ Respects and responds to feedback from

 teammates

 \_\_ As appropriate, involves and assists others

 in efforts

 \_\_ Demonstrates leadership and/or project

 management skills

 \_\_ Development and implementation of PD plan

 **\_\_ Overall**

|  |  |  |  |
| --- | --- | --- | --- |
| **Indicators**(rate each indicator on a scale from 1 to 4, where 4 is “Excellent”, 3 is “Good”, 2 is “Adequate/Acceptable”, and 1 is “Inadequate/Unacceptable” | **Overall Rating for Outcome** | **Weight** | **Rating x Weight** |
| 1. An ability to apply engineering design to create a product that meets the specified needs of this engineering design experience with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
 |  | 30% |  |
| 1. An ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to the development of the product of this engineering design experience.
 |  | 15% |  |
| 1. An ability to identify, formulate, and solve complex engineering problems arising from this engineering design experience by applying principles of engineering, science, and mathematics.
 |  | 15% |  |
| 1. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives associated with this design experience.
 |  | 10% |  |
| 1. An ability to communicate effectively with a range of audiences appropriate to this design experience in both a written report and oral presentation.
 |  | 10% |  |
| 1. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the engineering design experience associated with this course.
 |  | 10% |  |
| 1. An ability to recognize ethical and professional responsibilities associated with this engineering design experience and make informed judgments which must consider the impact of the product of this engineering design experience in global, economic, environmental, and societal contexts.
 |  | 10% |  |
| **Total** |  |

**Expected Grade Based on Current Performance:**

**Comments:**

**Senior Design Learning Outcomes Rubric – VIP (Completed at end of 2nd SD Sem)**

Student: Major: Course: \_\_VIP \_\_\_\_\_\_\_\_ Team: \_\_\_\_\_\_\_\_Term: \_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Outcome** | **Indicators**(rate each indicator on a scale from 1 to 4, where 4 is “Excellent”, 3 is “Good”, 2 is “Adequate/Acceptable”, and 1 is “Inadequate/Unacceptable” | **Rating** |
| i. | An ability to apply engineering design to create a product that meets the specified needs of this engineering design experience with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. | Student was proficient at applying engineering design processes to create the product resulting from this senior design experience. |  |
| Careful consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors was evident. |  |
| ii. | An ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to the development of the product of this engineering design experience. | Student demonstrated a strong ability to develop and conduct experimentation, analyze and interpret data in the context of this senior design experience. |  |
| Student demonstrated sound engineering judgment to draw conclusions related to the development of the product of this senior design experience. |  |
| iii. | An ability to identify, formulate, and solve complex engineering problems arising from this engineering design experience by applying principles of engineering, science, and mathematics. | This design experience contained elements associated with complex engineering problems (see definitions). |  |
| Student demonstrated ability to apply principles of engineering, science, and mathematics in the context of this senior design experience. |  |
| iv. | An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives associated with this design experience. | Student demonstrated leadership. |  |
| Student contributed to creating a collaborative and inclusive environment. |  |
| Student fully participated in establishing team goals, planning tasks, meeting objectives. |  |
| v. | An ability to communicate effectively with a range of audiences appropriate to this design experience in both a written report and oral presentation. | The quality of the student's contributions to the written report(s) associated with this senior design experience was excellent. |  |
| Student demonstrated effective oral presentation skills. |  |
| vi. | An ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the engineering design experience associated with this course. | Student demonstrated an ability to acquire and apply new knowledge as needed, using appropriate learning strategies to complete the product of this senior design experience. |  |
| vii. | An ability to recognize ethical and professional responsibilities associated with this engineering design experience and make informed judgments which must consider the impact of the product of this engineering design experience in global, economic, environmental, and societal contexts. | Student demonstrated an ability to recognize ethical and professional responsibilities associated with this engineering design experience. |  |
| Student demonstrated an ability to make informed judgments in the context of this senior design experience. |  |
| Careful consideration of the impact of the product of this senior design experience in global, economic, environmental, and societal contexts was evident. |  |