

BS Industrial Engineering 5 Year Assessment Plan

PROGRAM LEARNING OUTCOMES (PLOS)

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. (ILO 1)
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. (ILO 1 & 5)
3. An ability to communicate effectively with a range of audiences. (ILO 2)
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. (ILO 3, 4 & 5)
5. 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. (ILO 3 & 4)
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. (ILO 1 & 2)
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (ILO 1, 2, & 4)

Assessment Plan:

Year 1: 2023-2024	
1. Which PLO(s) to assess	3. An ability to communicate effectively with a range of audiences. (ILO 2)
2. Is it aligned to ILO	Yes, ILO 2
3. Sample (courses/# of students)	c-INDE 492 Senior Design
4. SLO from the course	Analyze novel situations and identify engineering skills and standards that are most applicable -Critically review and improve technical written reports -Communicate technical results confidently and persuasively in multiple modalities - Assess ethical implications associated with engineering practice
5. Assessment indicators	c-Capstone project
6. Assessment instrument	Capstone design rubric
7. Time (which semester(s))	c-Spring 2024
8. Responsible person(s)	c-Prof. Bowen

9. <i>Ways of reporting (how, to who)</i>	The results (qualitative and quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industrial advisory board

Year 2: 2024-2025	
1. <i>Which PLO(s) to assess</i>	6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. (ILO 1 & 2)
2. <i>Is it aligned with ILO</i>	Yes ILO 1, 2
3. <i>Sample (courses/# of students)</i>	INDE 410, Facilities Planning, Design and Material Handling
4. <i>SLO from the course</i>	Ability to analyze industrial facilities including location and layout of production, service, and material handling processes. Ability to design and improve industrial and service facilities.
5. <i>Assessment indicators</i>	<i>Auto assembly simulation lab reports</i>
6. <i>Assessment instrument</i>	Program rubric
7. <i>Time (which semester(s))</i>	Spring 2025
8. <i>Responsible person(s)</i>	Prof. Motavalli
9. <i>Ways of reporting (how, to who)</i>	The results (qualitative and quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industrial advisory board

Year 3: 2025-2026	
1. <i>Which PLO(s) to assess</i>	7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (ILO 1, 2, & 4)
2. <i>Is aligned with an ILO</i>	Yes, ILO 1, 2, 4
3. <i>Sample (courses/# of students)</i>	INDE 492
4. <i>SLO from the course</i>	Ability to use CAD, spreadsheet, database, and mathematics software to solve simple engineering problems 2) Knowledge of global engineering issues including ethical, environmental, sustainability and energy use implications of engineering designs 3) Ability to convey engineering ideas in oral and written formats 4) Ability to understand logic and inductive

	and deductive processes, distinguish between claims, and analyze, criticize, and advocate ideas.
5. <i>Assessment indicators</i>	exam question; Ethics final exam question
6. <i>Assessment instrument</i>	Program rubric
7. <i>Time (which semester(s))</i>	a-Spring 2026
8. <i>Responsible person(s)</i>	a-TBD
9. <i>Ways of reporting (how, to who)</i>	The results (quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industrial advisory board

Year 4: 2026-2027	
1. <i>Which PLO(s) to assess</i>	<p>1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. (ILO 1)</p> <p>2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. (ILO 1 & 5)</p>
2. <i>Is it aligned with ILO</i>	Yes, ILO 1, 5
3. <i>Sample (courses/# of students)</i>	e-INDE 460 Manufacturing and service system modeling
4. <i>SLO from the course</i>	Apply systems engineering approach throughout the product life cycle. Apply models, tools and methods to formulate and analyze engineering problems. Interpret modeling results and select among alternatives by applying decision-making concepts utilized in systems engineering.
5. <i>Assessment indicators</i>	e-Team project; j-Final exam
6. <i>Assessment Instrument</i>	Program rubric
7. <i>Time (which semester(s))</i>	e-Spring 2027;
8. <i>Responsible person(s)</i>	e-Prof Ganjeizadeh;
9. <i>Ways of reporting (how, to who)</i>	The results (qualitative and quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.

10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industrial advisory board
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Year 5: 2027-2028

1. <i>Which PLO(s) to assess</i>	5. 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. (ILO 3 & 4).
2. <i>Is it aligned with an ILO</i>	Yes, ILO 3 and 4
3. <i>Sample (courses/# of students)</i>	c-INDE 492
4. <i>SLO from the course</i>	Analyze novel situations and identify engineering skills and standards that are most applicable -Critically review and improve technical written reports -Communicate technical results confidently and persuasively in multiple modalities - Assess ethical implications associated with engineering practice
5. <i>Assessment indicators</i>	c-Capstone project
6. <i>Assessment instrument</i>	Capstone design rubric
7. <i>Time (which semester(s))</i>	c-Spring 2028
8. <i>Responsible person(s)</i>	c-Prof. Bowen
9. <i>Ways of reporting (how, to who)</i>	The results (qualitative and quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. <i>Ways of closing the loop</i>	Interaction between chair, faculty and industrial advisory board