ACADEMIC SENATE

Committee on Academic Planning and Review

College	Science
Department	Engineering
Program	B.S. Industrial Engineering
Reporting for Academic Year	202
Last 5-Year Review	09/2022
Next 5-Year Review	2027-2028
Department Chair	Farnaz Ganjeizadeh
Date Submitted	10/1/2023

ANNUAL PROGRAM REPORT

SELF-STUDY *(suggested length of 1-3 pages)*

A. Five-Year Review Planning Goals

1. The semester –based Industrial Engineering curriculum is designed such that students have many opportunities to achieve program-learning outcomes. We just completed and external review by the Accreditation Board of Engineering and Technology (sept 2022). We have submitted an interim report and awaiting the response

2. Faculty: We have not hired any faculty in this program since 2004.

3. Research: The Industrial Engineering faculty are active in research and are publishing in refereed journals. They have strong industry connections and as such, our students have the opportunity to complete several real-life projects before graduation

4. Laboratory Development: We have been successful in receiving A2E2 funds for lab development every year. Our labs are up-to-date.

5. Equipment: Through A2E2 annual funding and the normal refresh cycle of computers by IT, we are keeping the Industrial Engineering Laboratories current. The refresh of the Engineering computer laboratory was completed last year.

6. Enrollment: Student enrollment in Industrial Engineering program has been declining in recent years. We believe that some of this decline is due to pandemic. However, we are expecting upward trend due to offering more engineering disciplines which would attract a larger freshmen and transfer students to engineering who might transfer to IE.

7. Excess credits: The program requires 121 credit hours to complete. The transformed curriculum just meets the minimum accreditation requirements in areas of basic science and engineering hours. No engineering electives could be added to the program.

B. Progress Towards Five-Year Review Planning Goals

1. We transformed the senior design course in accordance to program reviewers feedback.

2. Due to current pandemic the new manufacturing equipment have not been fully utilized.
3. Assessment and continuous improvement of the program is an ongoing process.

C. Program Changes and Needs

Overview: The industrial engineering program started in the year 2000 and had been steadily growing until 2018. During the past couple of years, we have observed a decline in enrollment. We contribute this decline in large part to the decreasing number of international students and pandemic. We expect the enrollment to start an upward trend.

The program has 2.5 full-time equivalent faculty and two lecturers. There is a need for new faculty to keep the program current.

Curriculum: The transformed curriculum is designed to include more active learning practices and includes courses and material that are in line with the industry trends in industrial engineering.
Students: Demand for industrial engineering graduates are relatively strong. Most of our graduates are employed in engineering positions, mainly in the Bay Area. We have a strong advisory board that its members routinely hire our graduates to permanent positions and our students as interns.
Faculty: Since 2004 we have had 3 faculty dedicated to the industrial engineering and M.S. in engineering management programs. These include Helen Zong (currently in FERP program), David Bowen, Saeid Motavalli and Farnaz Ganjeizadeh (current Chair of the School of Engineering). The program needs new faculty to stay current.

Staff: The College of Science has recently reporganized the staff support for all departments. Enginnering and computer science are served by three full time staff work are working in CS/ENGR hub. We also have an SSP staff, Mrs. Lisa Holmstrom and a laboratory technician, Mr. Linh Nguyen. The School is fully supported by the staff.

Resources: We have upgraded our Manufacturing processes equipment and the engineering computer laboratory, VBT 223.

Assessment: An extensive assessment process is in place for the industrial engineering program. Sample results are provided in the following section.

II. SUMMARY OF ASSESSMENT

A. Program Learning Outcomes (PLO)

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)

B. **Program Learning Outcome(S) Assessed**

We have assessed the following SLO for the Industrial Engineering rs LngineeO

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. *Ways of reporting (how, to*	The results (qualitative and quantitative) will be reported by faculty to tfeae12 231.24 554.16 Tm[(f)3 - (y)20 (t)-2 (o)q226.08 537.72 304.5

1. Some downturn in enrollment for the last three years

2. Strong industry demand for the graduates

3. Active Advisory Board Council

4. Maintaining accreditation

5. Diverse student body

Reflections on Trends and Program Statistics:
Nationally the industrial engineering programs draw students from other majors in the colleges of engineering. Such that student enter other more recognized engineering programs such as mechanical, electrical or civil engineering and then transfer to industrial engineering. Therefore, typically freshmen enrollment in IE is low. We expect that with the addition of Civil Engineering program, the enrollment in industrial engineering would also be positively affected.