Engineering Management 5 year assessment plan

PROGRAM LEARNING OUTCOMES (PLOS)

Students graduating with a M.S. Engineering Management degree from Cal State East Bay will be able to:		I.L.O Alignment
a	Develop advanced analytical skills in optimization, planning and control, and other quantitative management techniques.	1, 6
b	Effectively manage teams of multi-disciplinary and multi-cultural professionals.	3, 4
c	Understand the impact of engineering and management decisions in a global, economic, environmental, and societal context.	5
d	Have the ability to effectively and persuasively communicate	2
e	Recognize the need for; and have an ability to engage in, life-long learning.	2, 6

▪ **Year 1: 2023-2024** ▪	
1. *Which PLO(s) to assess*	PLO a - Develop advanced analytical skills in optimization, planning and control and other quantitative management techniques (ILO 1, 6)
2. *Is it aligned to an ILO?*	Yes (ILO 1, 6)
3. *Course name and number*	INDE 620 System Modeling with Simulation
4. *SLO from course*	Use queuing theory to measure system performance and to design systems -Conduct simulation studies for system design and performance measurements -Interpret simulation results and recommend system improvements
5. *Assessment activity*	Queuing midterm exam question
6. *Assessment Instrument*	Department rubric
7. *Responsible person(s)*	Prof. Zong
8. *Strategies on reporting (how, to who)*	The results (quantitative and qualitative)will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
9. *Strategies on closing the loop*	Interaction between chair, faculty and industry advisory board
10. *Time (which semester(s))*	Spring 2024

▪ **Year 2: 2024-2025** ▪	
1. *Which PLO(s) to assess*	PLO b - Effectively manage teams of multi-disciplinary and multi-cultural professionals. (ILO 3,4)
2. *Is it aligned with ILO?*	Yes, (ILO 3,4)
3. *Course name and number*	ENGR 670 Design and Management of Human Work Systems
4. *SLO from the course*	Ability to apply learned concepts and tools to improve organizational performance in novel situations. Understand the function and management of professionally and culturally diverse teams. Ability to communicate convincingly in writing and orally regarding the efficacy of a particular course of action, supported by description and application of relevant theory.
5. *Assessment activity*	Class project and exams
6. *Assessment Instrument*	Department rubric
7. *Time (which semester(s))*	Spring 2025
8. *Strategies on reporting (how, to who)*	The results (quantitative and qualitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
9. *Strategies on closing the loop*	Interaction between chair, faculty and industrial advisory board
10. *Responsible person(s)*	Prof. Bowen

▪ **Year 3: 2025-2026** ▪	
1. *Which PLO(s) to assess*	PLO c - Understand the impact of engineering and management decisions in a global, economic, environmental, and societal context (ILO 5)
2. *Is it aligned to an ILO?*	Yes, ILO 5
3. *Course name and number*	ENGR 660 Sustainable Product and Process Design
4. *SLO from Course*	Student Learning Outcomes: Convincingly argue the merits and strategic importance of new product design and development for attaining competitive advantage. Apply Function-means analysis techniques and Functional mapping techniques. Understand and apply Life Cycle Analysis to improve sustainability of a product's design, manufacture, operation and disposition after primary intended use. Utilize taught techniques and tools in a team environment to design sustainable products and processes, and to communicate design results orally and in writing.
5. *Assessment activity*	Midterm performance on related question

6. *Assessment instrument*	Department rubric
7. *Responsible person(s)*	Prof. Bowen
8. *Strategies on reporting (how, to who)*	The results (quantitative and qualitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
9. *Strategies on closing the loop*	Interaction between chair, faculty and industrial advisory board
10. *Time (which semester(s))*	Spring 2026

▪ **Year 4: 2026-2027** ▪	
1. *Which PLO(s) to assess*	PLO d - Have the ability to effectively and persuasively communicate (ILO 2)
2. *Is it aligned to an ILO?*	Yes, ILO 2
3. *Assessment activity*	Team project
4. *Assessment instrument*	Department rubric
5. *Sample (courses name)*	ENGR 650 Project Management
6. *SLO from the course*	Understand the importance of work breakdown structures and networks to planning, scheduling, and controlling projects. Ability to identify and rectify potential conflicts and problems that can occur on projects. An ability to use computer-based information systems for managing projects. Ability to communicate convincingly in writing and orally regarding the efficacy of a particular managerial decision criteria with various constraints e.g., time, budget and resources, etc. supported by description and application of relevant theories.
7. *Time (which semester(s))*	Fall 2026
8. *Responsible person(s)*	Prof. Ganjeizadeh
9. *Strategies on reporting (how, to who)*	Oral presentation score results (qualitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. *Strategies on closing the loop*	Interaction between chair, faculty and industrial advisory board

▪ **Year 5: 2027-2028** ▪	
1. *Which PLO(s) to assess*	PLO e - Recognize the need for, and have an ability to engage in, life-long learning (ILO 2,6)
2. *Is it aligned to an ILO?*	Yes, ILO 2, 6
3. *Assessment activity*	Capstone project
4. *Assessment instrument*	Department rubric
5. *Sample (courses/# of students)*	ENGR 693A Applied Research in Engineering Management
6. *SLO from the course*	Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. Ability to communicate engineering management concepts and results orally and in writing.
7. *Time (which semester(s))*	Spring 2028
8. *Responsible person(s)*	Prof. Motavalli
9. *Strategies on reporting (how, to who)*	The results (quantitative and qualitative) will be reported by faculty to the department chair through course self assessment form
10. *Strategies on closing the loop*	Interaction between chair, faculty and industrial advisory board