CALIFORNIA STATE UNIVERSITY EAST BAY

ACADEMIC SENATE

Committee on Academic Planning and Review

ANNUAL PROGRAM REPORT

College	Science
Department	Engineering
Program	B.S. Civil Engineering
Reporting for Academic Year	2024-2025
Last 5-Year Review	n/a
Next 5-Year Review	2028-2029
Department Chair	Cristian Gaedicke
Date Submitted	10/12/2025

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

A. Five-Year Review Planning Goals

1. The Civil Engineering program started accepting students in Fall or 2023. The faculty have worked hard to develop this program, with special emphasis on civil infrastructure. We plan to apply for accreditation by the Accreditation Board of Engineering and Technology **(ABET)** after sufficient assessment data has been collected.

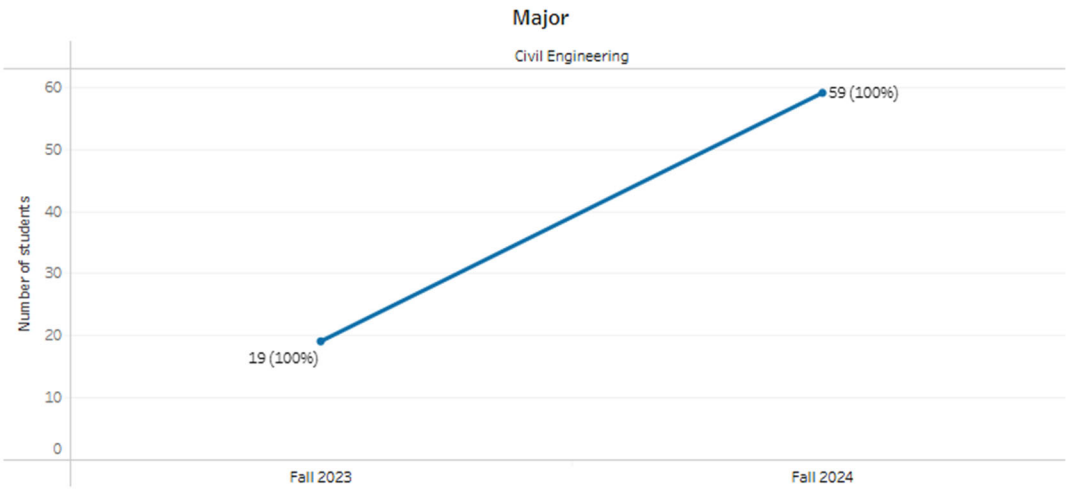
2. Faculty: We hired one additional faculty member, Dr. Roya Nasimi, starting in Fall 2023. She brings expertise in structural engineering and laboratory development. Dr. Nasimi primarily teaches structural engineering and general engineering (ENGR) courses. Dr. Astaneh supports geotechnical areas, and Dr. Gaedicke supports engineering materials and transportation. Dr. Shahbodaghlou facilitates job fairs and specializes in construction engineering.

3. Research: Civil Engineering faculty are active in research and have successfully secured funding. Their work focuses on construction/engineering education and virtual reality in construction. The STEM camp for high school students from West Contra Costa County, funded by Chevron for the 11th consecutive year (Summer 2024), is a key initiative.

Faculty are also involved in other STEM education grants. A new research area and lab in seismic engineering has been initiated.

4. Equipment: Through A2E2 annual funding, IT refresh cycles, and support from the College of Science, we've maintained and upgraded the Engineering Materials labs. Dr. Nasimi invested her startup funds to develop a seismic engineering lab and recently acquired a shake table to simulate seismic activity. We also opened a new active learning classroom/lab in South Science 125.

5. Enrollment: Enrollment has grown significantly since the program's inception. In Fall 2023, we had 19 students; in Fall 2024, 59 students (a 310% increase); and as of Fall 2025, we have 100 students.



6. Excess credits: n/a.

B. Progress Towards Five-Year Review Planning Goals

1. We hired Dr. Roya Nasimi, who primarily teaches Civil Engineering courses. With increasing enrollment, we anticipate needing one additional faculty member. We continue to engage a diverse team of lecturers with strong industry experience.

2. We completed our Civil Engineering Lab in SSC 125, acquiring equipment such as the shake table to support student training, faculty research, and industry collaboration.

3. Our Civil Engineering student population is diverse, with 53% Latinx and 59% URM.

Civil Engineering: Race/Ethnicity

	Fall 2024	
	n	%
Asian	12	20%
Black	4	7%
International	1	2%
Latinx	31	53%
Multirace	1	2%
NHPI	1	2%
Unknown	2	3%
White	7	12%
Total	59	100%
	59	100%

C. Program Changes and Needs

Report on changes and emerging needs not already discussed above. Include any changes related to SB1440, significant events that have occurred or are imminent, program demand projections, notable changes in resources, retirement/new hires, curricular changes, honors received, etc., and their implications for attaining program goals. Organize your discussion using the following subheadings.

- Overview: The Civil Engineering program launched in Fall 2023 and has grown steadily (20 students in 2023, 59 in 2024, and 100 in 2025).

- Curriculum: The curriculum is designed to meet the needs of the Bay Area's civil infrastructure industry, with emphasis on roads, bridges, and pavements. It prepares students for careers in both private industry and public agencies (e.g., Caltrans, counties, cities).

- Students: Demand for Civil Engineering graduates is strong. We maintain strong industry connections and plan to leverage them for internships and job placements.

- Faculty: All faculty are Civil Engineers. Dr. Shahbodaghlou (Construction Engineering) joined in 2009; Dr. Gaedicke (Materials, PE in Texas) joined in 2012; Dr. Astaneh

(Geotechnical and Advanced Construction Technologies); and Dr. Nasimi (Structural and Seismic Engineering) joined in 2023. Drs. Shahbodaghlou and Gaedicke are tenured full professors; Drs. Astaneh and Nasimi are tenure-track.

- Staff: We have one full-time staff advisor, Mrs. Lisa Holmstrom, and a laboratory technician, Mr. Linh Nguyen. We also receive administrative support from the Computer Science–Engineering HUB.

- Resources: Room SCS 247 (Materials Testing Lab) has been remodeled to a lab-lecture space for 36 students. Room SC 125 is our Civil Engineering lab.

- Assessment: We are conducting regular assessments aligned with our five-year plan..

SUMMARY OF ASSESSMENT *(suggested length of 1-2 pages)*

Program Learning Outcomes (PLO)

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)**

We have assessed the following PLOs for the Civil Engineering program during the 2024-2025 Academic Year:

The following SLOs for the **Civil Engineering Bachelor Program** were assessed during the

2024-25 Academic Year:

Year 2: 2024-2025	
1. *Which PLO(s) to assess*	6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. (ILO 1 & 2)
2. *Is it aligned with ILO*	Yes ILO 1, 2
3. *Sample (courses/# of students)*	a- CIVE 330 – Strength of Materials
4. *SLO from the course*	a) Understand the basic principles of stress and strain, and deformations in materials. Analyze and solve problems related to axial, shear, torsional, and bending loads. b) Analyze material properties and their implications for structural design. Understand and analyze basic structural members such as columns and beams.
5. *Assessment indicators*	Midterm, final exam, group and in class activities.
6. *Assessment instrument*	Program rubric
7. *Time (which semester(s))*	Fall 2024
8. *Responsible person(s)*	Prof. Nasimi
9. *Ways of reporting (how, to who)*	The results (qualitative and quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. *Ways of closing the loop*	Interaction between chair, faculty and industrial advisory board

Midterm, final exam, group and in class activities.

Assessment of SLOs:

Instructor: Roya Nasimi

Course: CIVE330

Term: Fall 2024

Enrollment 10

Course Summary: This course introduces the principles of mechanics of materials, focusing on the behavior of solid bodies under various types of loading. Key topics include force, stress, strain, and deformation. The course covers the design and analysis of structures subjected to different loadings, such as axial, torsional, and bending loads, as well as shear and torsion. Pre-requisite: ENGR220; Grading: A-F grading only. Equivalent Quarter Course: NA

Summary of Student course performance:

The assessment tool was a problem from the midterm exam.

SLO a) Understand the basic principles of stress and strain, and deformations in materials. Analyze and solve problems related to axial, shear, torsional, and bending loads

The purpose of this problem was to evaluate students' capability and capacity in implementing their knowledge about the course content such as stress and strain and deformation to solve a real world problem. This problem focused mainly on a reinforced concrete post/column and asked the students to find the stresses carried by in each material in a reinforced concrete post, such as concrete an steel bar, with a given load. The problem not only helped the students to show their understanding of stress and deformation it also exposed them to the use of these contents in civil engineering profession and make them prepared for higher level courses such as concrete and steel design and had them learn about critical thinking and paying attention to the physics and nature of the problem to form and develop their solution.

The assessment tool was conducted in Fall of 2024, 78% of students had a score of 80% or above on this midterm. (Note: the class size was small)

Student comments: Student comments were generally positive with a median of 5 for all evaluation categories. Students liked the layout of the class, some of them find in class activities challenging.

Summary of Faculty experience & observations:

This course was being offered for the first time at Cal State East Bay, with the first cohort of civil engineering students taking it. The students enrolled in this class without having required pre-requisite (ENGR220-Statics). This was a challenging work load on me and the students. I had to cover two 3-unit course within this one 3units course. However, I communicated this openly with the students, and due to small size of the class and efforts shown on both ends of instructor and the students the course concluded very successful. I dedicated time to solve several practical problems to help students to connect the theoretical and mathematical content they learned to the real-world applications, in addition to covering the core fundamentals. I prepared my course content using three books and made the course that had emphasize on various types of problems and taught problem solving and critical thinking. Additionally, all of the major formulas used in this course were derived mathematically and drawing appropriate Free Body Diagrams, to help the students to have an in depth and intuitive understanding of the concepts. This is important because without it, they can use the correct equation but mistake correct parameters to solve the problems.

SUMMARY OF ACHIEVEMENT OF COURSE OUTCOMES

RECOMMENDED CHANGES

- Adhering to the standards of imposing the pre-requisite courses. This is especially true for core and fundamental engineering courses such as CIVE330.
- Having more hands-on activities or field visits, or seeking for donation of small prototype of structural connections and members can help students to better visualize the members and forces interactions.
- Offering a course like engineering drawings which could help the students to understand different perspectives and section views of the members and help to improve their 3D visualization.
- Dedicate time to review statics (ENGR220), even if they have already passed it.
- Offer it both Fall or Spring semesters or offer it in an alternating semester schedule with ENGR220.

Assessment Plans for Next Year

Summarize your assessment plans for the next year, including the PLO(s) you plan to assess, any revisions to the program assessment plan presented in your last five-year plan self-study, and any other relevant information.

We will assess the following PLO's in this academic year.

Year 3: 2025-2026	
1. *Which PLO(s) to assess*	7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (ILO 1, 2, & 4)
2. *Is aligned with an ILO*	Yes, ILO 1, 2, 4
3. *Sample (courses/# of students)*	a- CIVE 421 – Structural Engineering Design
4. *SLO from the course*	a- Analyze an indeterminate structure and calculate all the structure's reactions
5. *Assessment indicators*	Course project;
6. *Assessment instrument*	Program rubric
7. *Time (which semester(s))*	a-Spring 2026
8. *Responsible person(s)*	a-TBD
9. *Ways of reporting (how, to who)*	The results (quantitative) will be reported by faculty to the department chair via completion of the course Faculty Self-Assessment form.
10. *Ways of closing the loop*	Interaction between chair, faculty and industrial advisory board

DISCUSSION OF PROGRAM DATA & RESOURCE REQUESTS

A. *Discussion of Trends & Reflections Notable Trends*

The enrollment data shows that the Civil Engineering is growing and has high interest among students. However, we are aware that the demographics of the Bay and other external factors are a challenge to any recruitment effort.

We believe the synergies between Civil Engineering and our Construction Management program will aid the growth of Civil Engineering.

The construction industry is strong is California, and it providing plenty of job opportunities to our graduates. The construction industry hires BOTH Civil Engineers and Construction Management. Majors.

Notable Trends:
Summarize and discuss any notable trends occurring in your program over the past 3-5 years

based on program statistics (1-2 paragraphs). You may include 1-2 pages of supplemental information as appendices to this report (e.g., graphs and tables).

1. We have successfully achieved growth since the program inception in Fall of 2023.
2. Our Civil Engineering students in their Junior and Senior year are able to join the Career Day/Job fair for Construction Management and Civil Engineering students.
3. We have developed a new laboratory exclusively for Civil Engineering
4. We have established a local chapter of the Society of Women Engineers on campus. Additionally, we also established a local student chapter for the Society of Hispanic Professional Engineers (SHPE).

Reflections on Trends and Program Statistics:
Provide your reflections on the trends discussed above and statistics and supplemental information presented in this report.

We anticipate that this program will continue to grow given the level of interest and our outreach efforts. However, it is very important that the university continues to provide support to allow our faculty to interact with the construction industry, visit high schools, and community colleges, to promote this new program. Our faculty are interested to participate in such outreach activities as long as our School of engineering and College can provide the travel funds.

Request for Resources (suggested length of 1 page)

Upkeep of the laboratory software and hardware, access to large computer lab/classes for some of the courses. The calibration of our lab equipment is not current. We anticipate that calibrating the equipment will cost approximately $15 - $20k.

Request for Tenure-Track Hires:

We are requesting one tenure-track position for the Construction Management and Civil Engineering programs. This position would have a job description to attract candidates able to teach in both disciplines.

Request for Other Resources

We request support in terms of student assistants and faculty time to allow our students and faculty to visit different schools and community colleges to promote this new program.

We also need faculty time release to work on our upcoming accreditation.