GAVILAN COLLEGE
HISPANIC SERVING INSTITUTION

Program Review All Fields

Division 20 - Science, Technology, Engineering, and Math - Division Office, STEM

I. Main

Overview
Academic Year 2024 - 2025
Originator Nari, Jennifer
Division Division 20 - Science, Technology, Engineering, and Math
Department Division Office, STEM
Programs

II. Co-Contributors

Questions? Find answers in CurricUNET User Manual.
Contributor
Open the Form Properties to select co-contributors and assign permissions.

III. Program Mission and Accomplishments

Gavilan College Mission Statement

Gavilan College actively engages, empowers and enriches students of all backgrounds and abilities to build their full academic, social, and economic potential.

1. Provide a brief overview of how the program contributes to accomplishing the mission of Gavilan College. In addition to a basic overview of your program's structure and services, be specific in connecting your program's services to elements of the mission statement (300 words or less).
The STEM Division at Gavilan College plays a pivotal role in advancing the college's mission to engage, empower, and enrich students of all backgrounds and abilities. By offering comprehensive academic pathways in Biology, Chemistry, Physics, Mathematics, and Engineering, the division supports students in achieving associate degrees, transferring to four-year institutions, and enhancing skills necessary for academic success. These efforts directly contribute to helping students build their full academic potential.

The division's commitment to empowerment is evident through its extensive student support services. The STEM Center and Math Lab provide free tutoring in key disciplines, while specialized support like embedded tutoring and MESA Academic Excellence Workshops foster academic confidence and persistence. These services cater to diverse learning needs, aligning with the college's mission to engage students across all backgrounds and abilities.

Economic and social enrichment is facilitated through the division's robust internship program and partnerships with local industry and educational institutions. These opportunities offer students practical experience and career guidance, helping them maximize their economic potential. Furthermore, the division's

focus on equity—through targeted efforts to close achievement gaps for disproportionately impacted groups—ensures inclusivity in student success initiatives.

Through initiatives like Guided Pathways and the institutionalization of grant-funded services, the STEM Division continues to streamline degree completion processes and expand access to essential resources. These concerted efforts not only enhance academic achievement but also strengthen the division's alignment with Gavilan College's core values of engagement, empowerment, and enrichment.

2. On the PIPR website, locate and review your previous program plan and subsequent annual updates. After reviewing, enter your previous goals below and comment on the progress/accomplishments of each goal.

Enter each goal separately by clicking Add Item

1. **Previous Goal: Create community and industry partnerships to create more job/internship opportunities for students**

   Status: In Progress

   52 students participated in internships in Summer 2024: 25 at Gavilan and 27 at SJSU. We are expanding the internships for Summer 2025 to include opportunities with CSUMB, USDA, and Sasken.

   Previous Goal: Create SAOs for the division by Spring 2022

   Status: Completed

   SAOs have been created for the STEM Division and are as follows:

   SERVICE AREA OUTCOME 1: Increase the number of students pursuing calculus-based degrees in Science, Technology, Engineering, and Mathematics (STEM).

   SERVICE AREA OUTCOME 2: Increase STEM students' retention, persistence, graduation, and transfer rates.

   SERVICE AREA OUTCOME 3: Identify and provide programming and resources to support STEM students' professional growth.

2.

   Previous Goal: Institutionalize grant efforts (tutoring, tutor training, STEM Counselor, etc.)

   Status: In Progress

   Many of the successful grant efforts of STEM III continue to be funded by STEM IV (2021-2026) such as STEM tutoring, STEM Center support, student internships, and STEM Counseling. We have been able to institutionalize the STEM Counselor position as the district is picking up an additional cost each year for the life of the grant.

3. Have the services or courses of your program changed over the past three years? Please explain (300 words or less).

The STEM program at Gavilan College has experienced several notable changes over the past three years, particularly with its integration of new support services, academic pathways, and initiatives aimed at improving student success and workforce readiness.

One of the significant changes has been the increased focus on offering diverse support services to students in STEM fields. For example, a dedicated STEM counselor was introduced, providing tailored academic and career guidance. Additionally, the college launched the NSF-funded Circle of Champions project, which aims to expand access to STEM resources and mentor support for underrepresented groups.

Further strengthening the STEM pathway, the hiring of a STEM Career and Academic Pathways (CAP) Specialist has helped improve student engagement and transition from education to career opportunities. This position works closely with local transfer institutions and industry partners to develop internship opportunities, providing real-world experiences and increasing employability.

In line with the broader goals of the college, the integration of these services aligns with strategic efforts to streamline STEM degree requirements through Guided Pathways.

In terms of academic changes, the addition of support classes such as Math 25 (Pathways to Calculus) and increased use of hybrid learning models are significant. These modifications aim to increase success and retention, particularly in gateway courses like Calculus. As part of the response to AB 705/1705, the STEM Division also worked to improve the math placement process, ensuring that students are placed in the right courses for their skill level, helping them succeed in their transfer-level math classes.

Overall, these changes reflect a concerted effort to enhance student success and expand the opportunities available within the STEM fields at Gavilan College.

IV. Student and Program Outcomes

College Goal for Student Achievement

The following questions refer to data regarding student achievement. To access program review data, go to the Institution Data Dashboard.

1. (For Instructional Programs Only) Find your program's course success information. Consider your program success rate trends over the last three years. Compare your overall success to the college average. Are these rates what you expected after comparing with the college average? Are there any large gaps? Is there anything surprising about the data? What trends are suggested by the data?

	2021-2022	2022-2023	2023-2024
STEM Enrollment	4618	4700	5264
STEM Success	70%	70%	71%
College Enrollment	28598	30218	36857
College Success	71%	72%	72%

The success rate of students in STEM courses is within 1-2 percentage points of Gavilan College overall.

2. (For Instructional Programs Only) Now find your program persistence information. Consider your retention rate trends over the last three years. Compare your overall retention to the college average.

Persistence Rate (term to term)	2021-2022	2022-2023	2023-2024
STEM	72%	80%	78%
Gavilan College	56%	61%	62%

The persistence rate for STEM courses is significantly higher than that of Gavilan College overall.

3. Are these rates what you expected after comparing with the college average? Are there any large gaps? Is there anything surprising about the data? What trends are suggested by the data.

The data reveals that STEM students generally have higher success and persistence rates compared to the overall college averages. Despite fluctuations, STEM programs have maintained relatively stable success rates, indicating consistent support and engagement. The gradual increase in Gavilan College's overall persistence rate reflects positive trends in student retention and engagement.

Success

The following questions refer to data regarding student achievement. To access instructional program review data, go to the Institution Data Dashboard.

**4. (For Instructional Programs Only) What are your set goals for course success? Do your individual course and department rates meet this goal?
 Helpful Question: If your rates for success are lower than your goals, what are your plans to improve them (200 words or less)?**

Program	Success Rate 2021-2022	Success Rate 2022-2023	Success Rate 2023-2024
Biology	77%	78%	80%
Chemistry	74%	75%	78%
Physics	80%	83%	84%
Math	63%	60%	61%
Engineering	76%	70%	69%

Our division maintains a goal of 80% course success. The Biology, Chemistry, and Physics programs have met or exceeded the STEM division's goal of an 80% course success rate. However, the Math and Engineering programs have not achieved this target.

To enhance success rates in Math and Engineering, we will implement the following strategies:

1. **Curriculum Enhancement:** Review and update course materials to ensure they are relevant, challenging, and aligned with current industry standards.
2. **Faculty Development:** Provide professional development opportunities for instructors to adopt innovative teaching methods and stay informed about best practices in STEM education.
3. **Implement Active Learning Strategies:** Incorporating active learning techniques—such as problem-solving sessions, collaborative projects, and interactive simulations—can significantly boost student engagement and comprehension in STEM subjects.

4. **Enhance Support Services:** Providing robust support services, including tutoring, mentoring, and academic advising, addresses the diverse needs of STEM students. Programs like the Mathematics, Engineering, Science Achievement (MESA) offer academic assistance and career guidance, contributing to higher success rates among participants.

5. How many students did your area serve (if you don't have an exact count, please provide an estimate)? How did they perform in comparison to those that did not use your services, if applicable? (200 words or less)

	2021-2022	2022-2023	2023-2024
STEM Enrollments	4618	4700	5264

Term	Declared STEM Majors
Fall 2022	354
Fall 2023	421
Fall 2024	452

As mentioned in #3, STEM students generally have higher success and persistence rates compared to the overall college averages.

6. Given this information, how has your service or area supported student success and retention over the past three years? (200 words or less)

- **Targeted Support Services:** The STEM division has prioritized the implementation of various support services aimed at addressing the unique needs of its students. Key initiatives include the establishment of STEM Academies and the integration of bilingual STEM counseling services. These services are designed to provide academic, social, and economic support, particularly for Hispanic and low-income students, a group that is underrepresented in STEM fields.

- **Research and Internship Opportunities:** Efforts to expand hands-on research and internship opportunities have been central to improving workforce preparedness. This includes collaborations with local tech companies to provide real-world experiences through internships. Moreover, the STEM division has set goals for increasing undergraduate research projects and industry internships to further enrich student engagement.

- **Engagement with Local High Schools:** The division has also focused on strengthening partnerships with local high schools to offer dual enrollment courses, thereby enabling students to complete foundational STEM coursework earlier in their academic journey. This initiative is expected to accelerate students' readiness for transfer and increase their engagement in STEM fields.

- **Inclusive and Flexible Learning Models:** In response to diverse student needs, the STEM division has implemented hybrid and HyFlex learning models.

7. In your area, what trends do you see and what initiatives need to be developed to support success and retention? (200 words or less)

The STEM division at Gavilan College has demonstrated strong success and retention rates, outperforming the college average. However, there are several trends and opportunities for further development:

1. **Trends in Enrollment and Success:** The division has seen steady growth in enrollment and success rates, especially among Hispanic students. However, retention rates remain a challenge, particularly in high-impact courses such as Math and Physics. Despite high success rates, certain demographics, such as African American and Foster Youth students, face disproportionately lower success rates.

2. **Need for Enhanced Support Services:** While the STEM Center and tutoring services have contributed positively to student success, there is an ongoing need to expand these resources. Increasing personalized support, such as mentoring and more targeted interventions, would help further bridge the achievement gaps.

3. **Strengthening Pathways:** Expanding dual enrollment opportunities and developing structured, guided pathways for STEM majors are essential to increase transfer readiness and early exposure to STEM careers. Initiatives that integrate career exploration with coursework and provide additional hands-on research or internship experiences will further improve retention and workforce readiness.

V. Equity

Equity

Gavilan College has identified the following populations as experiencing disproportionate outcomes: Males, African American, Native American, Students with Disabilities and Foster Youth.

1. Examine your equity data over the last three years. Comment on what your program has done to address any differences or gaps in the past three years. What has worked? What has not worked? (200 words or less) Helpful Questions: What current factors or potential causes can be connected to these areas of disproportional impact? How might your program or department address student equity gaps? How can your area help increase disproportionate student success? (200 words or less)?

Over the past three years, the STEM division at Gavilan College has worked to close equity gaps by implementing targeted support programs and resources. While overall success rates have improved from 70% in 2021-22 to 71% in 2023-24, disparities persist among ethnic groups. Latinx students (69% success rate), Black students (75%), and Pacific Islander students (53%) continue to face challenges compared to Asian (84%) and White students (74%).

What Has Worked:

1. **STEM Support Services:** The STEM Center, tutoring programs, and faculty mentoring have helped improve retention and success rates, particularly for first-generation students.
2. **Targeted Interventions:** Programs such as supplemental instruction and embedded tutoring in high-failure courses have helped students, particularly in gateway math and science classes.
3. **Guided Pathways & Counseling:** Strengthening academic advising and career pathways has helped students stay on track, contributing to an increase in persistence rates from 72% to 78%.

What Has Not Worked:

1. **Gaps in Outreach:** Despite efforts, underrepresented groups still have lower success rates, indicating a need for earlier intervention.
2. **Retention in STEM Majors:** While enrollment has increased, persistence in advanced STEM courses remains a challenge.

Moving forward, expanding internship programs and culturally responsive teaching strategies will be key to further closing these gaps.

2. (Instruction Only) Find your Distance Education success information. If distance education is offered, consider any gaps in success rates between distance education and face-to-face courses. Do you notice any trends? Do these rates differ? If disparity exists, how do you plan on closing the achievement gaps between distance education and face-to-face courses (300 words or less)?

3. Our 2023 Equal Employment Opportunity (EEO) Plan States "Gavilan Joint Community College District (District) is dedicated to proactively cultivating and sustaining a welcoming and inclusive work environment. The District aspires to be Diverse, Purposeful, Inclusive, and Equitable, as reflected in the District's Principles of Community. The District values the worth and dignity of every person, the pursuit of truth, the acquisition of knowledge, and the nurture of democratic citizenship. These values provide the foundation for an environment of civility, honesty, cooperation, and professionalism." What is your area doing to support district efforts in creating an inclusive college environment? With what departments are you partnering? Did you identify barriers and institute change? How are you creating/ ensuring diversity in your department or in the classroom? (300 words or less) (Some examples might be sponsoring cultural events and diverse speakers on issues dealing with diversity, exploring how to infuse diversity into the classroom and curriculum, integrating diversity into the evaluation of employees, promoting learning opportunities and personal growth in the area of diversity, or evaluating how the physical environment can be responsive to diverse employee and student populations.)

4. How do you plan on addressing issues of student and employee equity? In other words, how do you plan on creating opportunities for success of students who have historically been underserved? How do you plan to address EEO outcomes in your employee hires?

Addressing Student Equity:

The STEM division will expand culturally responsive support services, including increased bilingual STEM counseling, enhanced tutoring and mentoring programs, and targeted interventions in high-failure courses. We will strengthen dual enrollment with high schools serving underrepresented students and develop STEM summer bridge programs to improve college readiness. Additionally, we will secure more scholarships, paid internships, and research opportunities to reduce financial barriers. Faculty will receive training in equity-minded teaching, and we will expand flexible course offerings, including hybrid and HyFlex options, to meet diverse student needs.

Addressing Employee Equity & EEO Outcomes:

To ensure diverse hiring, we will implement targeted recruitment strategies to attract underrepresented faculty and staff in STEM. EEO training for hiring committees will be required to mitigate bias, and we will strengthen mentorship programs to support new hires from diverse backgrounds. Ongoing Diversity, Equity, and Inclusion (DEI) training will be promoted to faculty and staff to foster an inclusive workplace.

By focusing on these strategies, we aim to close achievement gaps, increase representation, and create an equitable and supportive STEM environment for both students and employees.

VI. Learning and Area Outcome

Have you reviewed all your Learning and Area Outcomes to ensure that they remain relevant for evaluating the performance of your area?

Report

1. Are your SLOs, PLOs, SAOs, and ILOs mapped in CurriQunet?
No

2. Are your SLOs, PLOs or SAOs up-to-date in CurriQunet?
No

3. Have all of your SLOs, PLOs or SAOs been assessed in the last five years?
No

4. Have you reviewed all of your SLOs/SAOs to ensure that they remain relevant for evaluating the performance of your program?
Yes

5. If you answered no to any of the above questions, what is your plan to bring SLOs/PLOs/SAOs into compliance?
Below are the SAOs we have developed since the last program review:

SERVICE AREA OUTCOME 1: Increase the number of students pursuing calculus-based degrees in Science, Technology, Engineering, and Mathematics (STEM).

SERVICE AREA OUTCOME 2: Increase STEM students' retention, persistence, graduation, and transfer rates.

SERVICE AREA OUTCOME 3: Identify and provide programming and resources to support STEM students' professional growth.

VII. Outcome Assessments

Review Outcomes data located in CurriQunet Assessment Area. After you have examined your results, what do your findings suggest?
Student Learning Outcomes (SLO) or Service Area Outcomes (SAO)
1. Review the SLOs or SAOs assessment data located in CurriQunet. What improvement do you plan to implement based on your assessment data and when will you implement these changes and how will you know they are successful?
There is no assessment data provided.

Institutional Learning Outcomes (ILO)
2. How do your SLOs/SAOs support the college ILOs or how do your PLOs support the college ILOs? Be specific.
SAO 1: Increase the number of students pursuing calculus-based degrees in STEM

- This SAO aligns with ILO A (Critical and Creative Thinking) by encouraging students to develop and apply complex problem-solving and analytical skills essential for success in STEM fields. Pursuing a calculus-based degree helps students refine their ability to think critically, logically, and creatively, which are crucial for solving real-world challenges.

SAO 2: Increase STEM students' retention, persistence, graduation, and transfer rates

- This SAO supports ILO B (Effective Communication) by ensuring that students gain proficiency in exchanging ideas across various modes of communication, including written reports, presentations, and

group discussions, all common in STEM disciplines. It also ties into ILO D (Constructing Personal, Educational, and Career Goals) by promoting retention strategies that encourage students to set and pursue academic and career goals, helping them make informed decisions that balance their education and personal well-being.

SAO 3: Identify and provide programming and resources to support STEM students' professional growth

- This SAO supports ILO C (Ethical, Social, and Civic Awareness) by preparing students for STEM careers where ethical decision-making and awareness of societal challenges, such as sustainability and equity, are paramount. By offering professional development resources, students learn to navigate complex social issues in their careers. Additionally, it helps students construct personal, educational, and career goals that align with their values and aspirations, supporting ILO D.

3. Are you meeting your SLO/SAO success outcomes? What patterns stand out in your results? If your SLO/SAO results are lower than expected, what are your plans to improve them?
There is no assessment data at this time.

VIII. Curriculum and Course Offerings Analysis

1. (Instruction Only) Are there plans for new courses or educational awards (degrees/certificates) in this program? If so, please describe the new course(s) or award(s) you intend to propose (200 words or less).

- Develop and offer a new elective or certificate focused on data science and semiconductor applications in engineering.
- Curriculum approved for new course in Data Science
- Certificates of Achievement in Engineering
- Certificate of Achievement in Environmental Science
- AD-T in Environmental Science, AD-T in Nutrition & Dietetics
- Revision of Biotechnology curriculum and associated certificate

2. (Instruction Only) Provide your plans to either inactivate or teach each course not taught in the last three years (200 words or less).

- Deactivate pre-transfer level Math courses (Math 402, Math 411, Math 205, Math 240, etc.)
- Deactivate existing Biotechnology courses

3. (Instruction Only) Consider and analyze your location, time, and delivery method trends. Are classes offered in the appropriate sequence/ available so students can earn their degree or certificate within two years? Are courses offered face-to-face as well as have distance education offerings? Are they offered on the main campus as well as the off-site areas? Different times of day? (300 words or less).
In the STEM DIvision, where students take courses from multiple programs simultaneously, the chair and dean work closely together to set a schedule that eliminates conflicts and allows students to take the needed courses and graduate on time. STEM programs at Gavilan College are carefully scheduled to ensure students can complete their required courses within two years. Faculty members from the biology, chemistry, engineering, and physics areas collaborate to avoid conflicts between major classes, ensuring students progress through their programs efficiently. This coordination is critical, especially in STEM fields where sequential course offerings are necessary for timely completion. The STEM Division offers courses across

multiple modalities, including traditional in-person formats, fully online options, and hybrid classes. We offer Biology, Chemistry, Ecology, and Math courses at the new Hollister site.

IX. Program and Resource Analysis

1. Please list the number of Full and Part Time faculty, staff and/ or managers/ administrator positions in this program over the past three years. Focus on your individual program.

Click Add Item to enter information for each year

1. **2024**

   Full Time Faculty
   12

   Part Time Faculty
   31

   Full Time Classified Professional
   3

   Part Time Classified Professional or Student Worker
   6

   Full Time Manager, Confidential or Administrator
   1.00

   Part Time Manager, Confidential or Administrator
   0.00

2. **2023**

   Full Time Faculty
   12

   Part Time Faculty
   32

   Full Time Classified Professional
   2

   Part Time Classified Professional or Student Worker
   6

   Full Time Manager, Confidential or Administrator
   1.00

   Part Time Manager, Confidential or Administrator
   0.00

3. **2022**

   Full Time Faculty
   11

   Part Time Faculty
   33

   Full Time Classified Professional

2

Part Time Classified Professional or Student Worker
6

Full Time Manager, Confidential or Administrator
1.00

Part Time Manager, Confidential or Administrator
0.00

2. How have and will those with reassigned time, grant commitments and activity, projected retirements and sabbaticals affect personnel and load within the past in the next three years? What future impacts do you foresee (200 words or less)?

- Three retirements are expected for FT Math faculty in 2025-2026.
- FT Physics/Engineering faculty has release time for three different grant projects.

We have requested a FT Physics faculty through the Academic Staffing Committee, but this position has not ranked highly. A request for a FT Math faculty will be submitted in Spring 2025.

3. Additional Comments
We have approximately 30 student workers which I did not include above.

X. Evaluation of Resource Allocations and Program Efficiency

Resource Allocation

- 2022 - 2023
  Number of Students Served. How many students did your area serve in this year (if you don't have the exact count, please provide an estimate)?
  2402 (Unduplicated Headcount)
  Total Allocation (Irrespective of Funding Source) $2,500,177
  Funding Source
  At least 1 item needs to be checked.
    - Unrestricted General Fund
    - Grants & Categorical Programs

  Total Spent (Irrespective of Funding Source) $2,941,938
- 2023 - 2024
  Number of Students Served. How many students did your area serve in this year (if you don't have the exact count, please provide an estimate)?
  2662 (Unduplicated Headcount)
  Total Allocation (Irrespective of Funding Source) $2,809,053
  Funding Source
  At least 1 item needs to be checked.
    - Unrestricted General Fund
    - Grants & Categorical Programs

  Total Spent (Irrespective of Funding Source) $3,325,325
- 2024 - 2025

Number of Students Served. How many students did your area serve in this year (if you don't have the exact count, please provide an estimate)?
2953 (Unduplicated Headcount)
Total Allocation (Irrespective of Funding Source) $2,736,885
Funding Source
At least 1 item needs to be checked.

- Unrestricted General Fund
- Grants & Categorical Programs

Total Spent (Irrespective of Funding Source) $2,227,087

2. Please evaluate the effectiveness of the resources utilized for your program. How did these resources help student success and completion? (200 words or less)
Note: There was no money budgeted for adjunct faculty for Biology, Chemistry, Math.

The STEM division at Gavilan College has strategically used resources to enhance student success and completion rates. Key investments include:

1. Academic Support Services: The STEM Center and tutoring programs have significantly improved student retention and success, particularly in gateway STEM courses. These resources have been instrumental in closing achievement gaps among underrepresented students.
2. Faculty Development & Curriculum Innovation: Funding for professional development has helped faculty integrate technology-enhanced learning, such as HyFlex and hybrid courses, increasing accessibility for diverse student populations.
3. Internships & Career Readiness: Grants and institutional support have expanded transfer and industry partnerships, leading to more internship and research opportunities that bridge academic learning with real-world applications.
4. Equity-Focused Initiatives: Increased investment in bilingual counseling and mentorship programs has improved persistence rates among underserved students.

Challenges: While grants have supported key initiatives, long-term institutional funding is needed to sustain these efforts beyond grant funding cycles. Strengthening financial commitments to proven student success programs will ensure continued growth and impact.

3. Evaluate your program costs. Are your costs in alignment with your budget? If not, what improvements can be made? Please explain any trends in spending, inconsistencies and unexpected results. (200 words or less)
The STEM division's budget has been primarily allocated toward faculty salaries/stipends, student support services, instructional supplies, and student stipends. While spending has been generally aligned with projected costs, some inconsistencies and challenges have emerged:

1. Rising Costs of Instructional Supplies and Services: Increased demand for STEM lab equipment, maintenance contracts, and instructional supplies has led to higher-than-expected expenditures in some areas.
2. Grant Dependency: Some student success initiatives, such as tutoring, mentorship programs, and internship partnerships, rely heavily on external grants rather than institutional funding, making long-term sustainability a concern.

3. Faculty & Staffing Needs: While full-time faculty hiring has increased, the program still relies on part-time faculty, impacting budget allocations. Expanding full-time faculty positions would stabilize instructional quality but requires greater financial investment.

Improvements:

- Secure more institutional funding for critical student services to reduce reliance on grants.
- Improve budget forecasting to anticipate rising costs in technology, lab materials, and student support initiatives.
- Advocate for additional full-time faculty to enhance program stability and reduce adjunct dependency.

Ensuring sustainable funding for successful initiatives will be crucial for long-term STEM student success.

XI. Integrated Planning and Initiatives

1. What other areas is your program partnering with (i.e. guided pathways, grant collaboration, etc.) in new ventures to improve student success at Gavilan College? What is the focus of this collaboration? Helpful question: What are the department and your Integrated Planning/ Guided Pathways partners' plans for the next three years? (200 words or less)
The STEM division at Gavilan College is partnering with several key areas to improve student success, including Guided Pathways, grant collaborations, and industry partnerships.

1. **Guided Pathways:** The division is working within the Guided Pathways framework to streamline STEM degree requirements, creating clear academic pathways for students. This helps students navigate their academic journey more efficiently and provides a structured approach to course selection and career planning, improving retention and persistence.

2. **Grant Collaborations:** The STEM division is leveraging grants like the NSF-funded Circle of Champions project and STEM IV initiatives to provide additional resources for student support, mentorship, and professional development. These grants help expand tutoring services, provide faculty training, and offer students valuable internships and research opportunities.

3. **Industry Partnerships:** Collaborations with local transfer institutions and industry partners provide STEM students with internship opportunities, career workshops, and real-world experiences. These partnerships aim to enhance workforce readiness, bridge the gap between academic learning and industry demands, and increase job placement rates

XII. Other Opportunities and Challenges

1. Review for opportunities or challenges to your program, or an analysis of important subgroups of the college population you serve. Examples may include environmental scans from the Education Plan/Strategic Plan, changes in matriculation or articulation, student population, community and/ or labor market changes, etc. Helpful Question: What are the departmental plans for the next three years? (200 words or less)
The STEM division at Gavilan College has significant opportunities, including its proximity to Silicon Valley, which enables valuable industry partnerships for internships and job placement. Additionally, growing STEM enrollment presents a chance to expand programs and enhance student success. Grants and funding, such as

from NSF and Title III, provide resources for student support services and curriculum development. Expanding dual enrollment with local high schools offers early exposure to STEM fields, increasing retention and success.

However, challenges include persistent equity gaps, particularly among Hispanic, African American, and Foster Youth students, which requires more targeted support to ensure their success. Retention and persistence remain an issue, especially in rigorous STEM courses, and attracting qualified part-time faculty. Long-term sustainability of programs is another challenge, as the division must find ways to institutionalize successful initiatives without over-relying on external funding. Finally, adapting to rapidly changing workforce needs requires continuous curriculum updates and professional development for faculty to stay aligned with emerging technologies and industry demands.

In conclusion, while there are exciting growth opportunities, the division must address equity gaps, retention, and resource sustainability to support continued success and relevance in the evolving STEM landscape.

2. What are you discovering about instruction and/or services in a remote environment that you would want to maintain post-pandemic? (300 words or less)

3. What kinds of issues are exacerbated or emerging that are likely to remain, unless addressed? (300 words or less)

XIII. New Goals

Click Add Item to Enter a Goal

Information for Strategic Goals

1. **Goal**
   Enhance Industry Partnerships and Internship Opportunities
   Alignment to Strategic Goal

   Alignment to SLO or SAO SAO
   Describe the connection of Goal to Mission Statement, Strategic Plan and SLO/SAO Results
   Mission Statement
   Connection to Mission Statement: Aligns with Gavilan College's mission to empower students by providing career-aligned education and hands-on experiences that enhance economic potential.
   Connection to Strategic Plan: Supports workforce development initiatives and Guided Pathways by creating clear career pathways for STEM students.
   Connection to SLO/SAO Results: Strengthens SAO 3 by increasing access to industry resources that support students' professional growth, leading to higher retention and post-graduation success.

   Proposed Activity to Achieve Goal
   Develop formal agreements with industry partners Develop formal agreements with CSUMB Collaborate with STEM CAP Specialist Integrate research projects into coursework Host career panels and networking events with STEM employers.
   Responsible Party Dean of STEM & Learning Resources. STEM Activities Director, MESA Director, STEM Career and Academic Pathways Specialist
   Timeline to Completion: Semester/Year Summer 2026

How Will You Evaluate Whether You Achieved Your Goal
Evaluation Metrics: Number of internships and research placements secured annually. Student participation rates in internships and research projects. Feedback from students and industry partners on the effectiveness of internships. Post-program outcomes, including transfer rates of students who participated in research/internships. Grant funding secured for student research opportunities.

2. **Goal**
Expand STEM Support Programs
Alignment to Strategic Goal

Alignment to SLO or SAO SAO
Describe the connection of Goal to Mission Statement, Strategic Plan and SLO/SAO Results
Mission Statement
Connection to Mission Statement: Advances the college's mission to serve diverse student populations by closing achievement gaps through targeted mentorship, tutoring, and culturally responsive curriculum.

Connection to Strategic Plan: Aligns with the Student Equity and Success Initiative, increasing retention, persistence, and graduation rates for historically underserved students.

Connection to SLO/SAO Results: Supports SAO 2 by improving persistence and success rates, particularly among Latinx and first-generation students in STEM fields.

Proposed Activity to Achieve Goal
Increase targeted tutoring and mentoring services for underrepresented students in STEM through peer-led and faculty-supported initiatives. Develop culturally responsive STEM curriculum that reflects diverse contributions to STEM fields. Strengthen outreach and support for first-generation and Latinx students through specialized workshops and community-building events. Enhance bilingual support services, including tutoring and counseling, to address language and accessibility barriers. Expand STEM bridge programs that help students transition from high school to college-level STEM coursework.
Responsible Party Dean of STEM & Learning Resources, MESA Director, STEM faculty, STEM Counselors
Timeline to Completion: Semester/Year Spring 2027
How Will You Evaluate Whether You Achieved Your Goal
Evaluation Metrics: Improvement in success and retention rates among underrepresented student groups in STEM courses. Student engagement levels, measured through participation in tutoring, mentoring, and bridge programs. Survey results from underrepresented students on the effectiveness of support services. Increase in the number of bilingual tutoring and counseling sessions provided. Equity gaps in STEM course completion rates, comparing pre- and post-implementation data.

3. **Goal**
Expand Dual Enrollment Opportunities in STEM
Alignment to Strategic Goal

Alignment to SLO or SAO SAO

Describe the connection of Goal to Mission Statement, Strategic Plan and SLO/SAO Results
Mission Statement
Connection to Mission Statement: This goal aligns with Gavilan College's mission by increasing access to higher education for high school students, particularly those from underrepresented backgrounds, and providing them with a clear pathway to STEM careers.

Connection to Strategic Plan: Supports the Early College & Dual Enrollment Initiative, which aims to improve college readiness, student success, and seamless transitions from high school to college STEM programs.

Connection to SLO/SAO Results:

- SAO 1: Encourages more students to pursue calculus-based STEM degrees by introducing rigorous STEM coursework early.
- SAO 2: Enhances retention, persistence, and transfer rates by allowing students to complete college-level STEM courses while still in high school.
- SAO 3: Provides structured support and programming to help students explore STEM careers and academic pathways.

Proposed Activity to Achieve Goal
Strengthen High School Partnerships: Work with local high schools to identify demand for STEM dual enrollment courses. Develop articulation agreements ensuring that courses align with high school and college curricula. Expand Dual Enrollment Course Offerings: Offer college-level math, physics, engineering, and computer science courses at high school campuses. Implement STEM pathway tracks, allowing students to earn STEM certificates or significant college credits before graduation. Increase Student & Family Outreach: Conduct STEM dual enrollment workshops for students, parents, and high school counselors. Promote internship opportunities for dual enrollment students. Support Dual Enrollment Student Success: Provide dedicated STEM counselors and mentors for dual enrollment students. Offer academic support services, including tutoring, career guidance, and STEM faculty mentorship.
Responsible Party Dean of STEM & Learning Resources, STEM Faculty, STEM Counselors, High School Partners, Director of Outreach & Educational Partnerships
Timeline to Completion: Semester/Year Summer 2027
How Will You Evaluate Whether You Achieved Your Goal
Evaluation Metrics: Increase in dual enrollment participation among high school students, particularly from underrepresented groups. Student success rates in dual enrollment STEM courses, comparing them to traditional college-entry STEM students. Retention and persistence rates of dual enrollment students who continue in STEM fields at Gavilan College. Number of credits completed by dual enrollment students before high school graduation. Increase in the number of students who transfer to four-year institutions after participating in dual enrollment.

XIV. Resource Requests

Click Add Item to Enter a Resource Request

XV. Additional Questions

Please consider providing answers to the following questions. While these are optional, they provide crucial information about your equity efforts, training, classified professional support, and recruitment.

1. Does your division (or program) provide any training/mentoring for faculty and/ or classified professionals regarding professional development?

The STEM Division at Gavilan College supports our faculty when they seek professional development. We have provided Humanizing STEM training for the past three summers.Our STEM Counselors attend multiple conferences and workshops throughout the year to improve their knowledge base of STEM programs and transfer requirements. Math faculty engage in professional learning around OER resources and effective teaching practices in calculus with corequisite support classes. Many of our faculty engage in training around utilizing AI inside and outside the classroom. We have provided in-house training around SLO assessment. Gavilan College STEM faculty and SJSU faculty participate in an intersegmental workgroup that aligns program outcomes, inclusive teaching practices, and expectations for internship opportunities.

2. If there is a need for more faculty and/ or classified professional support in your area, please provide data to justify request. Indicate how it would support the college mission and college goals for success and completion.

STEM Division Assistant: The STEM division at Gavilan College has expanded significantly since 2019, yet it still shares a single Division Assistant with the Arts, Humanities, and Social Sciences (AHSS) Division. This shared staffing structure creates challenges in effectively managing course scheduling, student support, budget oversight, and grant administration. Supporting Data & Trends: STEM Division Growth: Enrollment has increased from 5,065 to 5,712 between the 2020-2021 and 2024-2025 academic years. Expanded Responsibilities: STEM now oversees Library & Learning Resources and multiple federal/state grants, including NSF, MESA, Title III, and K-16 Coast Collaborative grants. Funding Availability: The division has a vacant Department Assistant position that can be reallocated to fund this request, minimizing financial impact. Impact on Student Success & College Goals: Improved Course Scheduling & Accuracy: A dedicated Division Assistant will enhance schedule production, reducing errors and ensuring students can enroll in required courses without delays. Increased Student Support: Faster responses to student inquiries and issues, improving retention and completion rates. Better Budget & Resource Management: A dedicated assistant ensures full utilization of STEM division budgets and grant resources, directly supporting program expansion and student success. Conclusion: Hiring a Division Assistant for STEM will streamline administrative functions, improve student experiences, and align with Gavilan College's mission to support student success and program growth while keeping costs minimal. Full-Time Physics Faculty The STEM division urgently requires a full-time (FT) Physics faculty to stabilize and grow its Physics program, which serves as a foundation for engineering and other STEM disciplines. Currently, the majority of Physics courses are taught by part-time (PT) faculty, creating inconsistencies in instruction and limiting program expansion. Supporting Data & Trends: Declining FT Faculty Coverage: FT faculty taught only 13% of Physics courses in 2022-23, down from 32.3% in 2021-22, leaving 87% of courses to PT faculty. Enrollment Stability & High Fill Rates: Enrollment has remained above 90% for PHYS 1, 4A, and 4B, yet instructional instability risks future retention and success rates. Challenges in Hiring PT Faculty: The supply of qualified PT faculty is shrinking, making it difficult to maintain course offerings. Impact on Student Success & College Goals: Program Stability & Expansion: A dedicated FT Physics instructor would allow for consistent lab experiences, curriculum development, and improved scheduling at both Gilroy and Hollister campuses. Faculty Workload Balance: The current FT Physics/Engineering faculty is overextended, impacting both the Physics and Engineering programs. Alignment with College Mission & Goals: Increasing FT faculty presence supports student retention, program stability, and workforce readiness, ensuring high-quality STEM education. Conclusion: Hiring a FT Physics faculty is critical to maintaining Physics course offerings, improving student outcomes, and ensuring long-term program viability. It is also critical to the success of the Engineering program.

3. What, if anything, is your program doing to assist the District in attracting and retaining faculty and classified professionals who are sensitive to, and knowledgeable of, the needs of our continually changing constituencies, and reflect the make-up of our student body?

The STEM division at Gavilan College is committed to attracting and retaining faculty and classified professionals who reflect the diversity of our student body and understand the needs of our community. Key efforts include: Equity-Focused Hiring Practices: Job postings emphasize experience with diverse student populations, and outreach efforts target underrepresented groups in STEM. Faculty & Staff Mentorship and Development: New faculty receive mentorship from experienced STEM instructors, with a focus on inclusive teaching strategies and student-centered learning. The division supports professional development through workshops, STEM teaching conferences, and cross-disciplinary collaboration to strengthen faculty engagement and retention. Culturally Responsive Student Support Initiatives: The division has increased the availability of bilingual faculty, tutors, and counselors to support Latinx and other underrepresented students. Faculty are encouraged to incorporate culturally relevant pedagogy in STEM courses to improve engagement and success rates. These strategies help ensure that faculty and staff reflect the diversity of our students, creating an inclusive and supportive learning environment that enhances student success.

4. Are there program accomplishments/ milestones that have not been mentioned that you would like to highlight?

N/A

5. Please share any recommendations for improvements in the Program Integrated Plan and Review process, analysis, and questions. Your comments will be helpful to the PIPR Committee and will become part of the permanent review record.

N/A

XVI. Executive Summary

1. Please provide a brief executive summary regarding program trends and highlights that surfaced in the writing of this report. Summarize, using narrative, your program goals for your next three years. Your audience will be your Peer Review Team, the Program Review Committee, President's Cabinet, Dean's Council, ASGC, Academic Senate, Budget Committee and Board of Trustees (300 words or less).

The STEM division at Gavilan College continues to expand and evolve, demonstrating growth in enrollment, student support initiatives, and workforce preparation. Over the past three years, we have increased student retention and success rates, strengthened transfer and industry partnerships, and enhanced STEM support programs. Despite these advancements, challenges such as equity gaps, faculty and staff shortages, and the need for sustained funding remain.

To address these challenges and further our mission, we have developed the following strategic goals for the next three years:

1. Expand Student Research and Internship Opportunities – Strengthen transfer and industry partnerships, provide paid research experiences, and integrate internships into STEM coursework to increase workforce readiness.

2. Expand STEM Support Programs – Increase bilingual academic support services, tutoring, and mentoring, and expand culturally responsive STEM curriculum to close achievement gaps and improve retention.

3. Expand Dual Enrollment in STEM – Partner with local high schools to increase STEM course offerings, improve academic pathways, and provide internship opportunities and advising to better prepare students for college and careers.

These goals align with Gavilan College's mission and strategic plan by expanding access, enhancing student support, and strengthening pathways to STEM careers. Through collaboration and continuous improvement, the STEM division remains committed to fostering student success and academic excellence.

XVII. Attach Files

Attached File