



GAVILAN COLLEGE
INSTRUCTIONAL PROGRAM SELF STUDY

NAME OF PROGRAM BEING REVIEWED

AVIATION DEPARTMENT

Academic Year
2017-2018

I. Organizational Details

Provide an organizational breakdown of your program. Do not include individual's names, only position titles and FTE.

	Title	FTE
Administrator	Dean	1
Faculty - FT	Instructor - General & Airframe	1.9
	Instructor - Powerplant	1.5
Faculty - PT	Instructor - Airframe	0.6
	Instructor - Drone	0.2
Professional Support Staff	Administrative Assistant	0.6

II. Program Progress (What have you done since your last review)

A. Review Strategies and Goals on the Strategic Plan site.

(https://www.gavilan.edu/strategic_plans/Gavilan_StrategicPlan_2015_2020.pdf)

Which specific strategies and goals from the list has your program supported in the last three years? Using examples from your past Program Plans or other sources, describe what measures and/or pedagogical modification your program has adopted to support the identified strategies and goals.

Strategy #1 - Optimize enrollment, course offerings, and services to reflect community needs and growth.

Goal #1 - Create an institutional approach to offer and integrate student outreach activities, recruitment, assessment, orientation, counseling, retention and follow-up efforts, with particular attention to educationally under-represented student populations.

Recruiting visits to ten local high schools and mailings to high school counselors, Recruiting booths at aviation events such as air shows, collection and distribution of scholarship opportunities, & members of industry committee's focused on mentoring student.



Goal #3 - *Increase course and program offerings, as funding allows with a particular emphasis on Transfer Model Curriculum (AA/AS-Ts).*

Actively use VTEA and grand funds to introduce new technologies to the program.

Introduced a new drone program. Working on a certificate in this program.

Strategy #2 - *Improve student services and enhance curriculum and programs in order to help students meet their educational, career, and personal goals.*

Goal #2 - *Use student learning outcomes assessment results to inform program plans and make program improvements.*

Students are evaluated against FAA standards. Fine-tuning and adjustments to class content are made on a regular basis to improve results. Tests and quizzes are to determine where more instruction is needed.

Goal #3 - *Develop professional development activities for faculty to improve quality of teaching and curriculum for basic skills, career technical, and transfer courses.*

Flex hours are used to update curriculum.

Goal #4 - *Evaluate student support services to identify successful strategies and remediate gaps that may hinder student success in accordance with instructional improvement goals.*

Interviewed new students and found out the Gavilan's counselors were discouraging students from enrolling in the program. Embarked on a counselor education program including giving presentations to counselors on the job opportunities for aviation mechanics and emailing counselors news articles/job notifications that provide hard evidence of the opportunities our graduates have. The results have been very positive. More counselors are now recommending the program.

Goal #5 - *Provide a means to develop meaningful connections with educational and community partners.*

The department participates in mentoring programs sponsored by industry groups and employers. An example would be NBAA (National Business Aviation Association) As members of the local NBAA mentoring committee, our instructors convinced the organization to put more emphasis on the mechanic shortage. The number of internships offered by the local organization has grow by 150%.

Goal #6 - *Create communication methodology to increase the awareness of student wellbeing services such as mental health.*

Announcements are made in each class about the college' services. A bulletin board is located in each classroom that displaces service flyers.

Strategy #3 - *Improve and expand existing facilities to enhance the learning environment.*



Goal #1 - Expand facilities in the north and southeast portions of the district that will allow the expansion towards educational center size (20,000 square feet).

Opened new facility at the San Martin airport

Goal #2 - Use technology to improve existing classroom facility space, optimize academic success and administrative operations.

With our move to San Martin, we have reduced our footprint by a few thousand feet. We have implemented web applications and spreadsheets to track students so we are able to meet the college's and the FAA's requirements. We utilized an open sources accounting program to better track our spending and costs.

The aviation industry is constantly adding new technologies. The department is using VTEA and CTE grant funds to update our labs and their equipment. This includes things like computerized jet engine performance evaluation and communication antenna testing equipment.

Goal #3 - Integrate cost effective green practices for facilities, landscaping, and college systems into all campus improvements. Landscaping changes should include conversion of grass lawns to more sustainable and less water-consuming California native landscaping.

Picnic tables have been installed so students can meet and eat on campus. Each classroom has a refrigerator, coffee maker and microwave so students can stay on campus during the lunch breaks and save money by bringing their own meals.

Strategy #4 - Recruit and develop staff to foster success for our diverse students in their attainment of educational and/or career goals.

Goal #1 - Create a staffing plan to better meet student needs after assessing staffing gaps in all departments.

All the full-time instructors are working closes to double the normal load. In addition to their classroom activities, the instructors are maintaining their lab equipment and actively recruiting additional students. For many years, the college has had openings for part-time instructors but there have been no qualified applicants.

The department has been working with local employers to help find qualified instructors - no luck so far.

The faculty members have presented, to the administration, plans for developing instructors from alumni. No action has been taken by the administration. The situation is a "Catch-22". The staff is overloaded; additional qualified staff must be found; the current staff must find the additional staff. This is currently not working.

Goal #2 Working with college department chairs and Academic Senate continue to implement a five-year full-time faculty hiring plan to ensure that 60% to 62% of credit courses are taught by full-time faculty.



Presented staff development ideas to president, V.P. and dean. No action has been taken.

Goal #5 - Promote a safe and healthy work environment through planned activities throughout the year.

At each of our monthly staff meetings, we review our safety and hazards waste procedures to insure we are meeting the college's and FAA's standards.

Strategy #6 - Create institutional standards for customer service, for providing services to students and staff, with regular assessment.

Goal #1 - Through the Student Services Council and other committees, review current practices and create technological and other processes to streamline services.

Monthly staff meetings which include discussions on group communications/dynamics, activity planning and resource allocations.

Goal #5 - Create service learning outcomes that include customer service and student awareness of key processes and advisement.

Visit high schools on their career day; communications with high school counselors; holds an advisor committee meeting every semester; members of industry mentoring committees & participate in employer recruiting committees - during the listed activities, the department listens to what the community needs from the college and shares how the community can help our students.

B. What results have you seen because of these modifications? (Include data if available.)

The responses for section A (above) included results. Those areas that needed additional information are listed below.

Strategy #1

Goal #1 5 years ago, the average first year class was approximately 12 or 13 students. The running average for the last three years is 15.7. The current semester has 19 students. The number of students is growing. The growth is non linear and not as fast as the department would like. The goal is to reach full enrollment of 25 students per class (limit set by FAA)

The program has consistently had one woman enrolled each year. One year we had two sisters enrolled. Despite recruitment focused on women, this number has not changed.

The student's racial diversity is a good representation of the college's population. The range of students' age is very wide at 17 to 72.

(Data source is fall semester grade summary for each first year class)



Strategy #2

Goal #1 Eight years ago, we had approximately 1/3 of first semester students failed or dropout because of academic reasons. The average, for the last three years, is about 10% of first semester students failed/dropout for academic reasons. This now represents about 1 to 2 first semester students per semester failed or dropout.

Over the past three years, one second semester student passed the college's standards but didn't meet the FAA's standards. That student is retaking the class. No third or fourth semester student has failed/dropout for academic reasons.

Students do withdraw because of personal/family reasons. If we can get the students past the first semester, 80% of the students complete both years of the program and that includes those withdrawing for personal/family issues which are out of the college's control. Of those students that successfully complete the first semester, over 85% complete both years of the program. If the student completes two semesters, the number is over 95%.

(Data source is semester grade summaries for students still enrolled after the NRS day)

- C. What methods does the program use to maintain the integrity of academic standards and achieve consistency within the discipline, particularly in regard to multiple section introductory classes?

The Aviation Department's AMT program is certified under Code of Federal Regulations Title 14 part 147. The program must operate under the standards outline in the FAA's AC 147-3 - Certification and Operation of Aviation Maintenance Technician Schools. As part of the certification process, Gavilan must submit and have an approved "Policies and Operations Manual". Gavilan's manual is over 300 pages and covers things like what will be taught; how things are taught; how students are evaluated; how student results are reported to the FAA, classroom requirements; lab requirements; safety requirements; and standards for instructors.

The FAA uses the above listed standards to audit the program annually. The program has passed the FAA audit every year.

- D. What are the program's methods for evaluating and modifying the contents of course offerings? Please provide examples of the result of this process.

See the answer for Item C above.



E. What staff development efforts has your program undertaken?

Last year, a new full-time faculty member was hire. He has been trained by a mentor and the other full-time faculty member. The department doesn't have a formal training program. Other faculty members must find their own training.

Full-time faculty members hold FAA Inspection Authorizations. To maintain these authorizations, they must attend FAA sponsored training annually and authorization review every two years.

F. Is the program currently articulated with regional four-year colleges and universities and district high schools? Does your program currently have an AA-T or AS-T? If not, what are the plans to develop one?

Gavilan participates in San Jose State University's Aviation and Technology 2 + 2 program. Aviation students can uses the Gavilan training to help get BS aviation degrees at San Jose State.

G. If applicable, how does the program meet all local, state, and federal requirements, including professional, or trades and industry organizations?

See the answer for Item C above.

H. How has your program collected information and responded to the needs of the community/field (e.g. advisory council, needs assessment)?

Visit high schools on their career day; communications with high school counselors; holds an advisor committee meeting every semester; members of industry mentoring committees & participate in employer recruiting committees - during the listed activities, the department listens to what the community needs from the college and shares how the community can help our students.

K. Review the Gavilan College Equity Report Executive Summary (http://www.gavilan.edu/staff/equity/docs/2015-16_StudentEquityPlan.pdf).

a. What efforts has your program undertaken to mitigate identified inequities, and what was the outcome?

Aviation student completion/success rates are equal across diverse groups. The program has difficulty recruiting women - see details of recruiting actives outlined in the answer to Section IIA, Strategy #1, Goal #1



b. What gaps remain in your program's efforts to serve the identified populations? Use GavDATA to identify these gaps (<http://www.gavilan.edu/about/research/index.php>)

See response in item a above.

III. Program Data

Provide appropriate analysis for the following sections based on data acquired from the Office of Institutional Research. (<http://www.gavilan.edu/about/research/index.php>)

A. Basic description of program.

1. Enrollment and FTES

i. Enrollment by top code and course over time (4 years)

see attached data

ii. FTES by top code over time (4 years)

see attached data

iii. Current enrollment by term last available census

see attached data

2. Student Outcomes

i. Success rate by top code and course and year (4 years).

see attached data

ii. Retention rate by top code and course and year (4 years).

see attached data

iii. Number of majors by year (4 years).

see attached data

iv. Number of degrees and certificates by top code and year (4 years).

see attached data

v. If your program has courses that are required to be completed in sequence, (i.e. English, Math, ESL, etc) what is the success rate for that sequence? (<http://www.gavilan.edu/about/research/index.php>)

n/a

3. Staffing Data

i. Faculty Headcount (by contract and hourly) (past 4 years)

Instructors 2 full-time and one part time

ii. Faculty productivity (Weekly Student Contact Hours [WSCH] divided by Full Time Equivalent Faculty [FTEF]) (past 4 years)



see attached data

iii. Current ethnic and gender distribution of faculty

2 males and one female, all Caucasian

iv. Contract overload by year (past 4 years)

Both full-time instructors are close to double loads because to staff shortage

v. Program Release Time (past 4 years)

n/a

vi. Classified Staff who contribute to the instructional program, e.g.,
Instructional Assistant, lab supervisor (past 4 years)

Part-time admin to collect data for FAA compliance.

vii. Student Assistants (tutors, Cal/WORKs, Work Study, etc.) (past 4 years)

One Cal/Works student per semester.

B. Provide comments on any salient data above.

See attached data.

C. Budgetary allocations over the past 3 years (4-5-6's and 1-2-3's if applicable).

See sample below.

Operational Costs	10/11	11/12	12/13
Enter your data: e.g. Travel			
e.g. Instructional Supplies			

D. Provide an overview of how budget allocations have changed over the past three to five years.

See attached data.

E. What were the results of any significant additional budget or resource allocations/reductions over the past three to five years?

Built a new facility

IV. Trends Affecting your Program (Data-Driven)

A. Briefly describe your program's strengths and challenges (utilize data to support your contentions).

Strengths:

For those students that take the final FAA certification tests, Gavilan students have 100% success rate for oral/practical portion and 95+% on written portion.

This is for first attempts at the tests and based on FAA data.



For those students that complete the FAA certification tests, there is 100% employment rate in aviation related jobs - based on post graduation surveys.

Challenges:

Low enrollment - None of the classes have reached full enrollment for year.

- B. Provide a brief review of the past three Program Plans and any emerging themes identified in them.

The Program Plans focus on two main areas - lab equipment purchase and enrollment.

Aviation lab equipment is very expensive and aviation technology is continually moving forward. For example, the smallest new turbine engine is over \$500,000. The department has been creative in using the funds available and seeking donations from industry and aircraft owners. This is the nature of the program and the efforts to obtain the best lab environment with continue for the foreseeable future.

Low enrollment - Aviation classes are not full. This is in contrast with the worldwide shortage of aviation mechanics. Gavilan is not alone in this situation. All the Bay area aviation programs have a student shortage. Bay area aviation companies have been working with local colleges to increase enrollment. None of the local colleges are at full enrollment. Some of this is historical. At one time, new aviation jobs were hard to find. Over the pass several years, several factors have lead to shortage of both mechanics and pilots. Local aviation companies predict this shortage with continues for at least the next 10 to 12 years.

High school students and especially high school counselors are unaware of the opportunities in the aviation field. Students looking at entering the aviation mechanic field are facing the stigma of not getting a four-year degree. The department has teamed with local employers and aviation special interest groups to educate the public on the opportunities in the aviation field.

- C. If not mentioned above, what are some of the needs or challenges facing your program? (include support and documentation for your contentions)

Staffing - All the full-time instructors are working closes to double the normal load. In addition to their classroom activities, the instructors are maintaining their lab equipment and actively recruiting additional students. For many years, the college has had openings for part-time instructors but there have been no qualified applicants. Complicating the situation, the full-time instructors have



retired from their original careers with Gavilan being their second careers. The current staff will reach retirement age in 5 to 7 years.

The faculty members have presented, to the administration, plans for developing instructors from alumni. No action has been taken by the administration. The situation is a “Catch-22”. The staff is overloaded; additional qualified staff must be found; the current staff must find the additional staff. This is currently not working.

Gavilan is completing with local aviation companies that offer better compensation package with much lower education requirements. Gavilan must develop a strategy for long-term staff development if the program is to continue.

V. Program/Student Learning Outcomes

- A. Complete the program/student learning outcome matrix for your program(s). Complete separate matrices for each Chancellor’s approved Degree or Certificate. If assessments have not been completed, provide an update of your program’s work to assess your program-level student learning outcomes.

Program/Student Learning Outcomes	Assessment / Measurement	Result	Use of Results
The student demonstrates the ability to meet the written test standards outlined in FAA AC 147-3 - Certification and Operation of Aviation Maintenance Technician Schools.	Homework assignments, quizzes and written tests.	All students that have completed the course have met the FAA standards	Continue on course
The student demonstrates the ability to meet the oral/practical test standards outlined in FAA AC 147-3 - Certification and Operation of Aviation Maintenance Technician Schools.	Shop/lab projects and oral/practical demonstrations	All students that have completed the course have met the FAA standards	Continue on course
Demonstrate the ability to inspect and determine if components and aircrafts meet airworthy standards outlined in FAA AC 43.13-1B - Acceptable Methods, Techniques, and Practices	Shop/lab projects and oral/practical demonstrations	All students that have completed the course have met the FAA	Continue on course



- Aircraft Inspection and Repair.		standards	
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B. What percentage of course-level student outcomes has your program assessed?
100%

VI. Program Plan/Budget Requests

A. List goals and objectives for the next three to five years that will address the needs and trends identified above and in your course and program level SLO assessment results.

1. Increase enrollment to 25 students per class
2. Address future faculty shortage
3. Continuous maintenance lab equipment. Much of our equipment is decades old and fixed/replaced as needed - exact budgeting is impossible.

B. Provide your current Program Plan (required) which should include these goals and objectives.

VII. Self Study Summary

Use data provided in this report as well as previous program plans to complete the Self Study Summary. Please provide a narrative summary, which should include an overall description of the program, a summary of the program's progress, a summary of and trends facing the program, and the program's plans for the future (2 page limit).

The program summary will include the following elements:

- A description of the program and the services;
- Significant accomplishments since the last review period;
- Your program's impact on supporting and improving student achievement and student learning outcomes;
- Resource and staffing changes since the last review and their effect on the program;
- Trends affecting the program;
- A list of goals and objectives (typically detailed in program plans) for the short and long term. These should be supported by data provided in the sections above. This should also include a discussion of the Institutional Effectiveness Partnership Initiative indicators and equity goals.

(<http://www.gavilan.edu/administration/iepi.php>)



The Aviation Department's focus is to provide training for technicians in the aviation field. The Aviation program is driven by the FAA requirements. The SLO's and PLO's are derived from the FAA requirements. The department has met or exceeded all FAA requirements. The FAA audits the program every year and the department continues to pass these audits every year.

Accomplishments:

1. Completed a new facility in San Martin
2. Updated classes to reflect industry changes. Updates include electronics, turbine engine simulator, piston engine labs and composite construction
3. 85+% completion rate
4. 95+% passing rate for graduates who take FAA certification test
5. Created a new drone/Unmanned Aerial Systems (UAS) classes/program

Resource and Staffing:

Resource changes: New facility in San Martin; new turbine engine lab, new piston engines for labs; new flight instrumentation simulator, electronics test equipment and new welding equipment. Much of the lab equipment, which is decades old, has been repair or refurbished.

Staffing: The Powerplant instructor has retired and a replacement has been rehired. The PT instructor staffing level is below requirements due to difficulties hiring qualified staff.

Trends:

The demand for aviation technicians is very hot. United Airlines, the largest employer of aviation technicians in the bay area, predicts they will need 200 to 400 new technicians per year for the next 8 to 12 years. This high demand is consistent with other employers in the area. Currently, all the bay area schools produce about 100 technicians per year.

The FAA is planning a revision to requirements for aviation technician programs. This has been in the works for several years. The changes will require the reallocation of class hours and reworking all the aviation technician classes. The revision will be a major change to the program. At the present time, the FAA is a year or two from releasing the new requirements. The full cost and effort to update Gavilan's classes is still unknown and cannot be determined until the FAA releases their revision.

Goals and Objectives:



1. Continue high student completion rate while maintaining standards that exceed the FAA requirements.
2. Grow enrollment
3. Develop a strategy for long-term staff development and retention.
4. Maintain, refurbish and upgrade lab equipment as fund become available.
5. Update classes once the FAA releases their new requirements