Chaffey College Program Review
Three Year Review 2011

PROGRAM OVERVIEW

Program Title: Aviation Maintenance Technology

Program Code: 950 - AERONAUTICS

Review Type: Instructional

Does this review contain any career technical education (occupational) programs?
Yes

External Regulations:
Yes

Chaffey College Mission Statement

Chaffey College improves lives within the diverse communities it serves through equal access to quality occupational, transfer, general education, and foundation programs in a learning-centered environment where student success is highly valued, supported, and assessed.

Please describe how your program supports the college's mission and discuss how your program evaluates its effectiveness in meeting the college mission:

The Aviation Maintenance Technology program provides equal access to quality occupational and transfer courses in a learning-centered environment where student success is highly valued, supported, and assessed. The program provides training for students to qualify for the Federal Aviation Administration's (FAA) Airframe and Powerplant certificate. Graduates of this program are employed in general, commercial, military and corporate aviation, as well as, theme park maintenance, power generation facilities and heavy equipment repairs. The program evaluates its effectiveness in meeting these missions by several means: 1) students are assessed according to FAA written, oral and practical exams and currently program assesses at 100% student success; 2) course level SLOs are planned and the program is in its 2nd cycle; 3) the program undergoes periodic program review as directed by the institution; 4) FAA inspections, which cover curriculum, lab safety, time keeping and related documentation, and which are to be held annually.

Review Team Response

The program overview clearly shows how the program supports the college's mission through equal access and a
learning centered environment. The program discusses how it evaluates its effectiveness through the FAA testing for Airframe and Powerplant qualification exam, as well the program’s SLO process.

**PROGRAM DATA**

**Enrollment**

Enrollment by Day, Evening, Online, Arranged (AMT)

<table>
<thead>
<tr>
<th>Measure</th>
<th>2008-09 to 2009-10</th>
<th>2009-10 to 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Census Enrollment</td>
<td>16.52%</td>
<td>-11.52%</td>
</tr>
</tbody>
</table>
Given the data, what changes can be identified in enrollment patterns? Identify any important trends and explain them.

Enrollment patterns have been steadily increasing, due to the economy and positive recommendations to prospective AMT students from the FAA and other aviation organizations. Also, employment opportunities have increased, in both the commercial and military venues. Additionally, student attrition has become almost non-existent, due to the difficulty of getting needed sections. Ethnicity is staying consistent, while on the gender side, female enrollments have been increasing.
Given the data, what changes can be identified in retention patterns? Identify any important trends and explain them.
Retention numbers, as noted in the success area, have hit the high point for all areas of ethnicity and gender. Once again, part of this is due to an excellent program, employment opportunities and difficulties registering for sections. No other trends noted.

Success
Given the data, what changes can be identified in student success patterns? Identify any important trends and explain them.

While a slight negative change can be seen between the years of 2007 and 2008, a trend of improvement into the low 90% area can be seen. Improvement can continue in the upward direction by lowering the student to instructor ratio.

Review Team Response
The review team would like to know to what does this program attribute its impressively high retention rates - any best practices to share with the rest of us? While a discussion of program implication due to these data trends is not included in this section, the program has included this information in the VIP section.

DEGREE/CERTIFICATE DATA

<table>
<thead>
<tr>
<th>Aeronautics: Airframe</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Degrees</td>
</tr>
<tr>
<td>07/08</td>
<td>4</td>
</tr>
<tr>
<td>08/09</td>
<td>22</td>
</tr>
</tbody>
</table>
Given the data, is the number of majors and certificates what you would expect? Please comment. Has the number of majors and certificates increased or decreased over time? Why?

Increase in certificates obtained is due to faculty and CTE counselor involvement with students completing said portion of program. The numbers shown are what would be expected for the amount of students finishing with the sections allowed. Additional sections would allow a larger number of certificates issued.

<table>
<thead>
<tr>
<th>Aeronautics: Powerplant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
</tr>
<tr>
<td>07/08</td>
</tr>
<tr>
<td>08/09</td>
</tr>
<tr>
<td>09/10</td>
</tr>
</tbody>
</table>

Given the data, is the number of majors and certificates what you would expect? Please comment. Has the number of majors and certificates increased or decreased over time? Why?

The numbers are what would be expected of each of the years noted with the sections allowed. Additional sections would allow a larger number of certificates issued. The certificate numbers will not increase from those noted unless additional sections are added.

<table>
<thead>
<tr>
<th>Aeronautics: Airframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
</tr>
<tr>
<td>07/08</td>
</tr>
<tr>
<td>08/09</td>
</tr>
<tr>
<td>09/10</td>
</tr>
</tbody>
</table>

Given the data, is the number of majors and certificates what you would expect? Please comment. Has the number of majors and certificates increased or decreased over time? Why?

Since the AMT program is approximately 35 hours per week, time is usually not available for general education sections, leading to the degree. Thus, the number of degrees noted above would be what would be expected.
Aeronautics: Powerplant

<table>
<thead>
<tr>
<th>Term</th>
<th>Degrees</th>
<th>Certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/08</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>08/09</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>09/10</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Given the data, is the number of majors and certificates what you would expect? Please comment. Has the number of majors and certificates increased or decreased over time? Why?

Since the AMT program is approximately 35 hours per week, time is usually not available for general education sections, leading to the degree. Thus, the number of degrees noted above would be what would be expected.

Review Team Response

STUDENT LEARNING OUTCOMES

2. 80% of AMT Program graduates (criterion, population & point of assessment) will receive a passing score of 70% or better on the FAA written (cognitive) certification exams (assessment instrument) after...

1. 80% of AMT Program graduates (criterion, population & point of assessment) will indicate, on exit interviews (assessment instrument), that they are confident in their abilities to perform (affective a...)

Discuss how the number, type, depth, and breadth of the courses support program SLO's.

All AMT program course sections support program SLOs in that student confidence is instilled with each progressing course and are regulated by the FAA and are required to meet FAA requirements for each of the certificates.

Discuss how courses in the program articulate with or complement each other.

The FAA regulated curriculum is built on a progressive system, divided into 3 sections, General, Airframe and Powerplant. General being the basis for each of the follow-on advanced sections of Airframe and Powerplant.

Discuss how courses in the program interact with other programs on campus (for example: cross-listing, overlapping content, or shared resources).

Course interaction is limited to FAA regulated courses taught by FAA certificated instructors, but some resources are shared between other CTE programs.

How and when has your department assessed Program SLO's and how have you responded to the
results?
SLOs and core competencies are in the completion stage with assessments to be done during this quarter. Review will be accomplished at the next PSR. The program has completed a chronological assessment plan for course SLOs, which outlines assessment by semester. A copy of this is attached to this report.

What program or course changes have been made based on the result of the assessed outcome?
SLOs and core competencies are in the completion stage with assessments to be done during this quarter. Review and changes will be accomplished during the Fall Flex activities (2011).

Review Team Response
Overall Program Level Implementation of SLOs is developmental. Due to a lack of space in the team response box, the SLO Rubric and a detailed reader's report will be emailed to you and your dean.

Discuss how your services help maintain a high level of student satisfaction.

Discuss how you evaluate your effectiveness in meeting students' needs.

How and when has your service reviewed or revised SLOs and/or AUOs?

How has your program utilized SLO/AUO assessment results for program improvement?

Review Team Response

CURRICULUM UPDATE

<table>
<thead>
<tr>
<th>Courses</th>
<th>Last Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT 20 Powerplant Theory and Maintenance - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 21 Powerplant Systems and Components I - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 31 Airframe Primary Systems - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 32 Airframe Auxiliary Systems - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 34ABCDEF Airframe Laboratory - Active</td>
<td>11/30/2011</td>
</tr>
<tr>
<td>AMT 14ABCD General Aeronautics Laboratory - Active</td>
<td>10/05/2011</td>
</tr>
<tr>
<td>AMT 12 Aviation Science, Materials, Processes, Inspections &amp; Regulations - Active</td>
<td>09/08/2010</td>
</tr>
<tr>
<td>AMT 22 Powerplant Systems and Components II - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 23ABC Powerplant Aeronautics Laboratory - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 30 Airframe Structures - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 24ABCDEF Powerplant Aeronautics Laboratory - Active</td>
<td>09/21/2011</td>
</tr>
<tr>
<td>AMT 33ABC Airframe Laboratory - Active</td>
<td>10/05/2011</td>
</tr>
<tr>
<td>Programs</td>
<td>Last Modified</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>AMT Aviation Maintenance Technology - Powerplant - Active</td>
<td>07/12/2011</td>
</tr>
<tr>
<td>AMT Aviation Maintenance Technology - Airframe - Active</td>
<td>07/12/2011</td>
</tr>
<tr>
<td>AMT Aviation Maintenance Technology - Airframe - Active</td>
<td>07/12/2011</td>
</tr>
<tr>
<td>AMT Aviation Maintenance Technology - Powerplant - Active</td>
<td>07/12/2011</td>
</tr>
</tbody>
</table>

Courses should be updated every six years; if course updates are due, please describe your plan and timeline for updating courses:

n/a

What steps has your program taken to proactively respond to changing and emerging student and community needs?

Advisory Committees
Needs Assessment
Demographic Trends
Labor Market Studies/Projections
Develop New Courses/Programs

Briefly explain:
Advisory committee meetings are held annually (next meeting 04/2011); There is currently a shortage of A&P technicians per national projections; AMT-12 was recently developed to accomodate student trends relating to enrollment and maintain completion rates.

Review Team Response
All curriculum is up to date.

ADVISORY COMMITTEE INFORMATION

An occupational program is required to have an active advisory board. Describe the advisory board membership, how often it meets, its role and involvement with the program, and how the program responds to advisory board recommendations (give examples).

The AMT program Advisory Committee is comprised of: industry representatives, 4 year aeronautical university representatives, other AMT school faculty members, FAA representatives and former students within the industry. The advisory board meets annually, which recommends needed equipment purchases, curriculum changes based on industry needs and staffing levels. The advisory board has in the past recommended the following: 1)AMT program to remain on site at Rancho campus, 2)

Review Team Response
more glitches with the system - the attached file can't be opened; Consequently, can not determine if membership,
roles and involvement with the program, specific examples given to show how the program has responded to recommendations; minutes are attached but we can not open the file; lookslike their answer to the last box was cut off; needs to have labor market report attached;

EXTERNAL REGULATIONS

Organization: The Federal Aviation Administration
Last Review: 02/02/2010
Recommendations: 1) It was recommended to have additional lab instructors to accomodate the growing number of students in the program and to keep within the FAA regulations of a 25:1 student to teacher ratio. 2) It was recommended that additional laboratory and tool crib space is needed to accomodate the growing program needs. This has been recommended for multiple reviews/inspections. 3) A recommendation was given to increase and continue our efforts related to our Foreign Object Debris (FOD) program, which is a requirement at every aviation repair facility.

Budgetary Recommendations: none
Addressed Satisfactorily: Yes
Status of Recommendation: 1) Administration is aware of the need for additional faculty in the AMT program, but due to budgetary constraints, such are not available at this time. 2) Additional space allocation recommendations for the entire program have been noted by the administration and due to budgetary concerns additional space has been allocated as available. New storage areas and an additional classroom have been added. 3) Additional efforts have been expended in creating a more efficient and FOD-free environment. The use of hardware bags, rolling parts carts and caps and covers have added to this effort.

Next Review: 03/24/2011

Review Team Response

NON-INSTRUCTIONAL PROGRAM INFORMATION

How does your program improve, expand, or support student learning? How do you know?

Describe staff functions and services (these can include diversity, specialties, staff preparation and training, professional activities and committee participation, accomplishments, grants, new programs etc.)

How does your program evaluate its effectiveness?
**Review Team Response**

**STUDENT SUPPORT - ACCESS**

How do the services you provide to students facilitate access to learning? (e.g. - admissions applications, payment processing, pre-requisite clearances, assessment testing, adaptive technology, program applications, healthcare, student activities, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>Description of Service</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09 09-10 10-11</td>
<td></td>
</tr>
</tbody>
</table>

Additional information:

**Review Team Response**

**STUDENT SUPPORT - SUPPORT**

How do the services you provide to students support student learning? (e.g. 'counseling, orientations, workshops, financial assistance (scholarships, grants, etc'), career assessments, health education, service learning, advisory committees, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>What knowledge, skills, and/or abilities are learned?</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09 09-10 10-11</td>
<td></td>
</tr>
</tbody>
</table>

Additional information:

**Review Team Response**

**STUDENT SUPPORT - OTHER**

How do the services you provide to students promote transfer, completion, specialized services, and/or future success? (e.g. graduation ceremony, CSU/IGETC certifications, university transfer, securing employment, transcript requests, enrollment verification, conferring of degrees/certificates, scanning/imaging documents, phone calls received, face-to-face contacts, refunds granted, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>How does this contribute to student success?</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09 09-10 10-11</td>
<td></td>
</tr>
</tbody>
</table>
According to the FAA regulations regarding the 25:1 student to instructor ratio requirement, offer more sections to meet workforce demand (goal 1).

Monitor graduation rates; continue labor market studies; continued communication with advisory committee and employers.

Provide additional qualified instructors to build the day program and establish a night program to meet workforce demand.

Additional information:

Review Team Response

VISIONARY IMPROVEMENT PLAN (VIP)

Please identify 1-3 program improvement goals for the next three years. Goals should state 'what' you plan to achieve and the rationale 'why' for doing so. 'How' you achieve your goals will be entered under Steps to Success. Keep in mind that your VIP should be SMART:

- Specific
- Measurable
- Action-oriented
- Realistic
- Time-bound

All plans should improve or expand student learning.

Year Three Goal:
There is currently a shortage of qualified Aviation Maintenance Technicians and job growth is exceeding the number of graduates available in the marketplace. Current AMT scheduled sections limits the number of graduates that our program is able to produce. Our goal is to increase the number of graduates to meet market demand.

To which planning direction does this goal apply?
Excellence in teaching and learning
Flexible and continuous student support
CTE pathway development

Year 1 Steps to Success (activities) and VIP Assessment:

Year 2 Steps to Success (activities) and VIP Assessment:

Year Three Goal:

To which planning direction does this goal apply?

Year 1 Steps to Success (activities) and VIP Assessment:
According to the FAA regulations regarding the 25:1 student to instructor ratio requirement, offer more sections to meet workforce demand (goal 1). Monitor graduation rates; continue labor market studies; continued communication with advisory committee and employers.

Year 2 Steps to Success (activities) and VIP Assessment:
Provide additional qualified instructors to build the day program and establish a night program to meet workforce demand.
Monitor graduation rates; continue labor market studies; continued communication with advisory committed and employers.

**Year Three Goal:**

**To which planning direction does this goal apply?**

**Year 1 Steps to Success (activities) and VIP Assessment:**
Request administration for additional sections and instructors, allowing for student completion in a 2 year period.

**Year 2 Steps to Success (activities) and VIP Assessment:**
Continue with enough sections to accomodate student success.

**Review Team Response**

**PROFESSIONAL DEVELOPMENT ACTIVITIES THAT SUPPORT STUDENT LEARNING OR IMPROVE YOUR PROGRAM**

List Recent departmental professional development activities connected to student learning.

<table>
<thead>
<tr>
<th>Recent activities</th>
<th>Recent workshops/courses taken</th>
<th>Recent conferences/training</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSR training; SLO training; Sexual Harassment training;</td>
<td>Curriculum modification training</td>
<td>Aviation Technician's Education Council</td>
<td>Faculty are active pilots and exercise the priviledges of their Airframe and Powerplant certificates</td>
</tr>
</tbody>
</table>

How are student learning outcomes affected by these professional activities? What steps are recommended for improvement?
Professional activities allow instructors to stay proficient within the industry standards and these standards are reflected in the program and course SLOs, and curriculum modifications.

**Discuss departmental engagement on campus in connection to student learning.**

<table>
<thead>
<tr>
<th>Governance committees</th>
<th>Other college-related committees</th>
<th>Other campus participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Safety; Green Earth Movement; Marketing Committee; Perkins IV; Program Coordinator;</td>
<td></td>
<td>Convocation; Department meetings;</td>
</tr>
</tbody>
</table>

How does your program benefit from your campus engagement?
Program participation allows instructors to stay current with college initiatives, such as, SLOs, curriculum modification, CTE instructional reqirements, health and safety issues in the lab environment and green technology within the industry.
Teaching/Years of Service

<table>
<thead>
<tr>
<th>Aviation Maintenance Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 years</td>
</tr>
</tbody>
</table>

Given the data how has your program been impacted?
It appear at this time, the boxes above are not populating per manual. Currently, the full-time instructors have 26+ years of teaching experience in the AMT program. This experience gives depth and breadth to the program.

Does your program anticipate retirements within the next 3 years?
No.

Review Team Response

PROJECTED NEEDS

Is any part of the program funded by sources other than the instructional budget (such as grants, partnerships, or other means)? If yes, please identify the source, amount, and length of funding.

After reviewing and analyzing the data and assessment results in this report, please describe and provide rationale for any projected resource needs required to accomplish your Visionary Improvement Plan using the boxes below. Your requests should be based on student need.

FT Faculty:

Year 1:
Additional FT faculty would allow for additional course sections and/or a night program to be instituted.

Hiring Criteria:

Institutional Level Considerations
Support efficiency over growth (# of sections remain the same)
Student need for courses or programs for transfer or vocational certificate
New and expanding student populations (e.g., Veteran’s, Early Alert)
New direction of the college (e.g., Tech Prep/Career Pathways/CTE, Middle High School College)
Supported by institutional data
Supports retraining to help students become employed or promoted in their professions

Department Concerns
Faculty required by state accrediting body (such as in nursing, rad tech, aero, etc).
Adjunct faculty are difficult to find (quality and qualified, high turnover, specific skill sets, external agency licensure requirements)
Programs that have extensive technical requirements which are evolving (e.g., software, complex and varied labs)
Year 2:
Hiring Criteria:

Year 3:
Hiring Criteria:

STAFF
Year 1
A full or 3/4 staff is being requested to accommodate the increased student population of our AMT program that has grown to approximately 110 students and 42 hours per week. A full-time tool crib attendant is required by the FAA at all times during the program. It is extremely difficult to schedule one instructional assistant with more than 40 needed.

Year 2

Year 3

EQUIPMENT
Year 1

Year 2

Year 3

TECHNOLOGY
Year 1

Year 2

Year 3

SOFTWARE
Year 1

Year 2

Year 3

OTHER
Year 1

Year 2
Year 3

Review Team Response
We noticed on the FAA External regulations page (for which there is not a box for reviewer comments) the program listed the following recommendations from the FAA: "It was recommended that additional laboratory and tool crib space is needed to accommodate the growing program needs." Wouldn't this program like to list these under "equipment" and "other" on this page?

Review Team Response
The program rates a 2 on the 3 point final summary rubric: "while there are areas that are unclear (such as SLO evidence and documentation), overall the document would be useful for planning, supporting and improving student achievement and SLO's.