

MAUI COMMUNITY COLLEGE SELF-STUDY GUIDE FOR ANNUAL ASSESSMENTS AND COMPREHENSIVE PROGRAM REVIEWS

AUTOMOTIVE TECHNOLOGY PROGRAM November 23, 2005

I. OVERVIEW OF THE PROGRAM

A. Mission and Vision of the College

1. The College Mission

Maui Community College is a learning-centered institution that provides affordable, high quality credit and non-credit educational opportunities to a diverse community of lifelong learners.

2. The College Vision

We envision a world-class college that meets current and emerging Maui County education and training needs through innovative, high quality programs offered in stimulating learning environments. The College mission, goals, and actions will be guided by the Native Hawaiian reverence for the ahupua`a, a practice of sustaining and sharing diverse but finite resources for the benefit of all.

B. Mission and Vision of the Program

1. The Automotive Program Mission.

The Mission of the Automotive Program is to provide exemplary entry-level technicians in the automotive and related fields, update the skills of technicians in the field and leading them to becoming lifelong learners.

The program mission statement reflects the college's mission statement in the following areas:

- Improving accessibility to superior programs and services the meet the changing educational and training need of its diverse community;
- Creating curricula that give students opportunities to develop academic competencies and occupational skills, to nurture interests, to cultivate talents, and to become contributing members of their community.

2. The Automotive Program Vision

The Program Vision is to continue to provide qualified automotive technicians to meet the employment needs for the County of Maui. To work towards national certifications with the Accrediting Commission for Community and Junior Colleges (ACCJC) and National Automotive Technicians Education Foundation (NATEF). The program is working towards improving the facility which was built in 1947.

3. Program Goals

- To prepare and place automotive majors in entry-level positions in the automotive field and automotive-related occupations.
- To provide employees already in the automotive profession with the skills and knowledge for technical upgrading.
- To prepare students who want to continue and transfer to a 4-year university.
- To provide support courses to other MCC programs.
- To provide students with an option of Cooperative Education gaining work experience while taking Automotive courses.
- To provide individuals with the basic automotive skills to enhance their own personal knowledge.

4. Student Learner Outcomes of the program

- a. Up on completion of the Automotive Technology Program (A.A.S.) students will be able to:
 - Diagnose, service, and repair the modern internal combustion engine.
 - Diagnose, service, and repair the brake system.
 - Diagnose, service, and repair the automatic transmission and transaxle.
 - Diagnose, service, and repair the power train system.
 - Diagnose, service, and repair the electrical system.
 - Diagnose, service, and repair the fuel system.
 - Diagnose, service, and repair the emission system
 - Diagnose, service, and repair the ignition system
 - Diagnose, service and repair the heating and air conditioning system.
 - Diagnose, service, and repair the steering and suspension system.
 - To be able to write customer repair orders and estimates.
 - To be able to orally communicate, to customer, management, parts person and other technicians.
 - To be able to use computer to retrieve information for repairs and estimates.
 - To be able to write resumes and be able to use job interview techniques.

C. Relation to MCC Strategic Plan

1. The Automotive Program is using the MCC Strategic Plan Action Strategies and the five goals as a guide to making changes to the program. The program is strongest in the first and second goals in the MCC Strategic Plan:
 - a. Goal 1. Educational Effectiveness and Student Success
 - Maintain all aspects of the College as a learning-centered institution.
 - Provide instructional methods, technologies, materials, facilities, and academic support services that accommodate students of varied learning styles, backgrounds, interests, and abilities.
 - Provide students with access to a seamless UH system with full articulation between all campuses.
 - Engage students in active learning.
Use technology to enhance student learning and the quality and efficiency of student service functions
 - b. Goal 2. A Learning, Applied Research, and Service Network
Engage in intellectual and educational activities that enable the county of Maui and the state of Hawai'i to flourish.
Objective 1
Support the county and state economy, workforce development, and improved access to lifetime education for all by building partnerships within the UH University system and with other public and private educational, governmental, and business institutions.
 - c. The Automotive Program mission and vision statements reflect these goals. The program realizes the importance it is to overall mission of the college and the community.

D. Program Faculty

The Automotive Program faculty includes two fulltime instructors and two part time lecturers. The instructors and lecturers come with varied technical training and automotive experience which gives the program diversity. This is a list of automotive faculty members and their technical qualifications.

FULLTIME FACULTY

1. Kyle Takushi

Automotive Instructor

Title: Instructor.

Length of Service –1st year

Courses Taught: AMT 20, AMT 40G, AMT 43, AMT 46, AMT 50, and AMT 57.

Educational Qualifications:

- Maui Community College – Certificate of Achievement 1996
- Maui Community College - Associate in Science Degree- Automotive Technology 1996

Automotive Work Experience:

- 2 years, Automotive Technician with Dollar Rent A Car
- 2 years, Automotive Technician with Maui Toyota Dealership
- 7 years, Automotive Technician with A & K Auto Repair Inc.
- 2 years, Automotive Lecturer with Maui Community College

Licenses:

- State Mechanics License - Certified Mechanic-MC7269
Certified in eight areas; Air Conditioning system, Brake System, Electrical System, Engines, Front Suspension System, Automatic Transmission, , and Engine Performance.

Certifications:

- Automotive Service Excellence (ASE) Master Technician
Certifications in eight automotive areas, since 1995. Includes; Engine Repair, Automatic Trans/transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical System, Heating and Air Conditioning, and Engine Performance.

2. Thomas Hussey

Automotive Instructor - Program coordinator

Title – Associate Professor C.C.

Length of Service – 13 years

Courses Taught: AMT 20, AMT 30, AMT 43, AMT 46, AMT 50, AMT 55, AMT 80, AMT 40C, AMT 41C and AMT 60

Educational Qualifications:

- Maui Community College - Certificate of Achievement – Automotive Technology - 1978
- Maui Community College - Associate in Applied Science - Automotive Technology - 1998

Automotive Work Experience:

- 4 years, mechanic helper with Central 76 Service Station
- 5 years, Automotive Technician with Haleakala Motors – General Motors/Mazda Dealership
- 7 years, Heavy Equipment Technician with Maui Pineapple Co.
- 2 years, Automotive Technician with State of Hawaii Airport Division.
- 13 years, Automotive Instructor with Maui Community College

License:

State Mechanics License - Certified Mechanic- MC-6409
 Certified in eight areas; Air Conditioning system, Brake System, Electrical System, Engines, Front Suspension System, Automatic Transmission, Manual Drive Train and Axles, and Engine Performance.

Certifications:

- Automotive Service Excellence (ASE) Master Technician with certifications in eight automotive areas.
 Includes; Engine Repair, Automatic Trans/transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical System, Heating and Air Conditioning, and Engine Performance.
- Automotive Service Excellence (ASE) Certification - Parts Specialist
- Automotive Service Excellence (ASE) Certification - Master; Cylinder Engine Machinist which includes Head Specialist, Cylinder Block Specialist, and Assembly Specialist.
- Automotive Service Excellence (ASE) Certification - Refrigerant Recovery & Recycling
- Automotive Service Excellence (ASE) Certification - Undercar Specialist which includes; Exhaust Systems, Suspension and Steering, and Brakes
- Automotive Service Excellence (ASE) Certification – Service Consultant

PART TIME FACULTY

1. **Timothy Hultquist**

Title: Automotive Lecturer

Number of semester taught: 6

Courses taught: AMT 20, AMT 40B

Educational Qualifications:

- Maui Community College - Certificate of Achievement – Automotive Technology

Automotive Work Experience:

- 25 years, technician with Island Dodge
- 5 years, automotive instructor, Maui Community College

License:

- State Mechanics License - Certified Mechanic- MC-7399
Certified in eight areas; Air Conditioning system, Brake System, Electrical System, Engines, Front Suspension System, Automatic Transmission, Manual Drive Train and Axles, and Engine Performance.

Certifications:

- Automotive Service Excellence (ASE) Master Technician with certifications in eight automotive areas. This includes; Engine Repair, Automatic Trans/transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical System, Heating and Air Conditioning, and Engine Performance.
- Automotive Service Excellence (ASE) Certification - Advanced Engine Performance
- Automotive Service Excellence (ASE) Certification - Refrigerant Recovery & Recycling

2. **Herman Villiarimo**

Title: Automotive Lecturer

Number of semester taught: 4

Courses taught: AMT 20, AMT 80, AMT 53

Educational Qualifications:

- Automotive Technology - 1992

Automotive Work Experience:

- 4 years, Technician with Tropical Rent A Car
- 6 years, Technician with Island Dodge

License:

- State Mechanics License - Certified Mechanic- certified in eight automotive areas, Air Conditioning system, Brake System, Electrical System, Engines, Front Suspension System, Automatic Transmission, Manual Drive Train and Axles, and Engine Performance.

Certifications:

- Automotive Service Excellence (ASE) Certifications in eight automotive areas with Technician status. This includes; Engine Repair, Automatic Trans/transaxle, Manual Drive Train and Axles, Suspension and Steering, Brakes, Electrical System, Heating and Air Conditioning, and Engine Performance.
- Automotive Service Excellence (ASE) Certification - Undercar Specialist which includes; Exhaust Systems, Suspension and Steering, and Brakes

3. **Chester Rafanan**

Title: Automotive Lecture

Number of semesters taught: 2

Courses taught: AMT 40C, 40B

Educational Qualifications:

- Associate Science Degree, Automotive Technology (1992)

Automotive work experience:

- 1 year, Technician with National Rent a Car
- 1 year, Technician with Valley Isle Motors
- 10 years, Technician with Haleakala Motors
- 6 years, Assistant Service Manager Cutter of Maui
- 2 years, Service Adviser Maui Toyota

License:

- State Mechanics License – Certified Mechanic – MC 7231
Certified in eight automotive areas, Air Conditioning, Brakes, Electrical, Engines, Steering & Suspension, Automatic Transmissions, Manual Drive Train and Axles, and Engine Performance.

Certifications:

- Automotive Service of Excellence (ASE) Certified as a Service Advisor and in eight automotive areas, Air Conditioning, Brakes, Electrical, Engines, Steering & Suspension, Automatic Transmissions, Manual Drive Train and Axles, and Engine Performance.

E. Ways in which program interacts with these organizations:

1. Advisory Committee:
 - a. Automotive Advisory Committee
The members are represented by a high school automotive instructor, a independent automotive repair shop owner, retired automotive instructor from a community college, a representative from the new car dealership, a representative from the automotive parts stores, and a member from the State Consumer and Affairs Department. The purpose of this committee is to advise the Automotive program to what the automotive industry needs are, and to guide the program to fulfilling those needs. For members names and titles (See Appendix C)
2. Community groups:
 - a. Valley Isle Timing Association
- This association has provided tuition scholarships for automotive students.
 - b. ALU LIKE, Inc.
- This organization has provided tuition assistance, tools and summer program partnership for students of Hawaiian ancestry.
 - c. Kamehameha Schools Career Education Lifelong Learning Department
- This organization has provided tuition and supplies for the summer program.
 - d. Servco Pacific Incorporated
- has provided the tools needed for the summer program.
 - e. Jaguar Hawaii
- has provided the books and supplies for the summer program.
3. Professional associations:

State Department of Commerce and Consumer Affairs (DCCA).

 - The automotive program is a resource for the investigator to understand the consumer complaint and what repairs were done.
 - Thomas Hussey is member of their advisory board.
 - A DCCA investigators is a member of the Automotive Advisory Committee.
4. Program Coordination Council PCC:

Automotive Technology Program Coordinating Council

 - The main purpose of the council is to maintain horizontal articulation among the five community college Automotive Programs in the state.

5. National accreditation bodies:
 - a. NATEF – National Automotive Teachers Educational Foundation
 - The automotive program is in the process of working towards this certification. Currently implementing NATEF student outcomes into our courses.
6. Other key organizations:
 - a. NACAT – North American Council of Automotive Teachers
 - Provides a conference that MCC automotive instructors can attend to receive updated training.
 - b. AC Delco Training division of General Motors Corp.
 - Uses automotive facility as a training location on Maui.
 - This arrangement allows instructors and chosen students attendance in training classes.
 - Training materials are donated to the program
 - i. Checkers Auto Parts
 - Uses automotive facility as a training location on Maui.
 - This arrangement allows instructors and chosen students attendance in training classes.
 - Tools and training materials are donated to the program.
 - d. General Motors Corp
 - Has donated two new slightly damaged cars to this program. The cars allow students to practice on newer vehicles

II. CURRICULUM AND STUDENTS

A. **General Education Standards (COWIQs), program goals, and student learning outcomes**

These five standards are currently in place; Critical thinking, oral communication, written communication, information technology, and quantitative reasoning (COWIQs). The program uses these standards to guide the curriculum and to make modifications in the general education of a student needs here at Maui Community College.

1. The history of these COWIQs standards maybe found using this link
<http://www.hawaii.edu/ovpp/gened/gedwww.htm>
2. The Automotive Program is using these five standards to prepare students to have a successful career in the automotive and the related fields. These are the ways the (COWIQs) are being used in the program:

Critical Thinking

- problem solving the customers complaints
- determining and confirming the problem
- diagnosis problem using repair service manuals
- perform repairs according prescribed procedures
- verify that the problem has been solved or repair

Oral Communication

- being able to relay information about diagnosis and repairs to all with customers, co-workers, and supervisors

Written Communication

- diagnosis and repairs repair must be written on a repair order to show what work was performed

Information Technology

- the use of electronic equipment used to monitor the different systems
- the repair manuals are now on computer DVD discs.
- Additional information is located on the world wide web

Quantitative Reasoning

- the automobile is a rolling example of physics at work
- math is used in most courses to explain how principles work
- is part of problem solving by understanding why part was put there and how it works.

3. The automotive program is designed to develop these skills in students to give them a method to continue learning to improve themselves to succeed in this career.

B. COWIQ and Program Outcome curricular grids (See Appendix A and B)

The grid was developed using the program outcomes and to which courses in the program these were the focus, part of the course, referred to in course, or not part of the course. The grid also shows both specific outcomes as well as general program outcomes. What was learned from the grid, is in which other courses that are taught the subject is either a part of or referred too.

C. Student Achievement (See Appendix C)

- a. Program Health Indicators (PHIs)
- b. Perkins Performance Indicators – included as part Program Health Indicators

D. Changes made in accord with the recommendations of the previous program review for Program Health Indicators (PHIs)

1. The program has been status quo for last three years because of lack of budget. The program has been generating its own funds pay for shop supplies, repair of equipment, and replacement of broken tools. No equipment has been purchased to improve the program.
2. Due to the funding situation the program has applied to two agencies for funds for program.
 - Rural Development Project
 - Carl Perkins - Career & Technical Education Program Improvement

E. Changes made in accord with the recommendations of the previous program review for Perkins measures

1. The program is pursuing and requesting that Perkins recognize our Certification of Competence as a completer of the program. The student after completing one or more of these courses can choose, at this point, to leave the program to pursue a career with those skills.
2. The program is finding it difficult to make changes without funding.

F. Measurable Benchmarks

1. PERKINS III CORE INDICATORS

		<i>Baseline</i>	<i>Performance</i>	<i>+/-</i>
1P1	Academic Achievement	81.56%	76.47%	-
1P2	Vocational Skills	91.53%	81.82%	-
2P1	Diploma/Equivalent/Degree/ Credential	35.70%	18.18%	-
3P1	Placement: Employment	70.52%	100.00%	+
3P2	Retention: Employment	90.13%	85.71%	-
4P1	Nontraditional Participation	15.94%	6.52%	-
4F2	Nontraditional Completion	14.34%	0.00%	-

The program is not prepared to make any assessments at this time because we are not trained in this area. Our area of expertise is vocational education and what is important to program is that we train students to be successful at their job.

G. Program/Certificate/Degree Standards, Student Learner Outcomes (SLOs) and the NATEF (National Automotive Teachers Education Foundation) task standards. (See Appendix D)

1. **Requirements for Certificate of Competence (Cert.Co.):**
 - *Heating and Air Conditioning: 3 credits:* Automotive Technology 43(3)
 - *Suspension and Steering: 3 credits:* Automotive Technology 55(3)
 - *Brakes: 3 credits:* Automotive Technology 53(3)
2. **Requirements for Certificate of Achievement (C.A.): 52-55 credits**
 - Automotive Technology 20(3), 30(7), 31(3), 40B(3), 40C(4), 40G(3), 41C(3), 43(3), 46(3), 50(4), 53(3), 55(3), 57(2)
 - Welding 19BC(2)
 - Natural Science: Physics 50(3)
 - English 22 or higher (3)
 - Math 50T(2), 50X(1), 50Y(1) or Math 27(3)
3. **Requirements for Associate in Applied Science Degree (A.A.S): 68-71 credits**
All C.A. courses plus:
 - Automotive Technology 60(7)
 - Communication 145 or English 100, 106, or higher (3)
 - Social Science elective (3)
 - Humanities elective (3)
 - Social Science elective (3)
4. **Student learner outcomes of the program**
 Upon completion of the Automotive Technology Program (A.A.S.) students will be able to:
 - Diagnose, service, and repair the modern internal combustion engine.
 - Diagnose, service, and repair the brake system.
 - Diagnose, service, and repair the automatic transmission and transaxle.
 - Diagnose, service, and repair the power train system.
 - Diagnose, service, and repair the electrical system.
 - Diagnose, service, and repair the fuel system.
 - Diagnose, service, and repair the emission system
 - Diagnose, service, and repair the ignition system
 - Diagnose, service, and repair the heating and air conditioning system.
 - Diagnose, service, and repair the steering and suspension system.
 - To be able to write customer repair orders and estimates.

- To be able to orally communicate, to customer, management, parts person and other technicians.
- To be able to use computer to retrieve information for repairs and estimates.
- Write resumes and able use job interview techniques.

Refer to program learner grid that shows courses these outcomes are being met. (See Appendix B)

5. The Automotive Program is following the NATEF (National Automotive Teachers Education Foundation) task standards. The program is in the process of working towards this certification by implementing the NATEF student outcome standard into the program courses. (See Appendix D)

H. Program trends, including student goals, enrollment trends, retention, and time of completion.

1. Many students do not earn certificates or degrees because they are already working part time in the field while coming to program. They complete the automotive program courses but fail to complete the general educational courses. We encourage all students to continue and complete and earn the certificate or degree but the urge to work full time is too great. The students that are continuing to work and attend college part time are completing their certificate or degrees in three years. From the Perkins indicators, the program graduates are low but it does not indicate how many of the students are working in the field as a career.

I. Changes in field; resources; shifts to respond to changes

1. The Automotive Program was given no institutional funds for equipment or supplies, and had to operate on self-generated funds.
2. The program has been operating status quo for four years now.
3. The program is now selling donated cars and used parts to provide funds
4. The program is moving to apply for grants as a source of funds

J. Major curricular changes since last review.

1. There have been no major changes in the program in curricular or strategies. The main barrier is a lack of financial support and administrative support to research, apply and secure grant funding, as well as complete written reports to enhance and highlight the program. Equipment such as training boards and hands on projects are needed teach student learner outcomes. Better curriculum and updated equipment would make major changes in the automotive program. .

K. Student advising and the degree to which faculty participate in the mentoring of students.

1. Faculty are always available to all students for advising in instructional and career planning. Advice is given freely and communication runs both ways. Each semester class advising includes note taking, test taking, resume writing, job interview training, team-advising including vocational counselor where class planning for college completion is conducted.

L Opportunities for student involvement in program-related organizations, clubs, and governance.

1. There is no automotive program club. Student may participate in the campus student government activities. The program does participate in the county fair parade and students are asked help to decorate a trailer.

M. Use of lecturers to teach courses; related concerns

1. Lecturers are used in the program when fulltime faculty is unable to teach a class due instructor load. The program coordinators try and find the best qualified person who can teach the subject and has the experience in that area.
2. The concern is the teaching experience and abilities of the lecturer. The lecturer must be able to teach at the same level as the students, so that the theory and the learning outcomes can be understood by students. The full time instructors are in charge of mentoring lecturers helping them through the process becoming teachers.

N Admission policy

1. The program has found that English 22 is the minimum needed to do well in the automotive program. This is one of program prerequisites (except AMT 16).
2. The Program Coordinating Council (PCC) for Automotive, has recommended in all Automotive Programs in the State of Hawaii, students taking automotive classes must maintain a current driver's license. This is program prerequisite.
3. The program also uses Compass Writing (040) skills as a prerequisite.

O Job placement, including job prospects, procedures for placing graduates,

1. The campus does have a job placement office in the form of Cooperative Education where student receive credit for working at on the job skills. Many of the companies needing employees call us directly.
2. The program receives calls from potential employers; the instructors will then discuss the job requirements and duties, and then try to match a student with the skills needed for that position. This method has been successful, most automotive students are working part time and attending classes by the second year.

P Articulation with high schools, community colleges, and four-year Institutions

1. The Automotive Program has an articulation agreement with the Department of Education, Automotive Programs here in the County of Maui. This agreement is to allow high school automotive students who completed a task list established by the MCC Automotive Program to receive three credits, leading toward MCC automotive certificate or degree. This articulation agreement would allow the students to bypass AMT 20 Introduction to mechanics course. The articulation agreement between the DOE, Department of Education and Maui Community College was signed in 1991. (See Appendix E)

Q. Centers or Institutes

1. The program uses the Learning Center to help students with their resume writing. Students are able to use there computer to write their resumes. Time is scheduled during classes to have learning center personnel come in and give a lecture about; how to write a resume, what information needs to be in it, and how to follow up

V. ANALYSES OF PROGRAM – TYING IT ALL TOGETHER**A. Summary statement**

1. The Automotive Program is working at raising its standards to meet two national sets of accreditations.
 - a. Accrediting Commission for Community and Junior Colleges (ACCJC)
 - b. National Automotive Teacher Educational Foundation (NATEF)
2. The program is still working on evaluating the program goals, general education standards, and student achievement. The easiest way to evaluate the program is to create grids, so we will continue to do this.

B. Plans for next year

1. The program is going to work on creating grids for each course to show how the (NATEF) task outcomes are being used in the courses.

C. Budget for next year

1. The program can not get (NATEF) certified as it is now. The (NATEF) tasks have changed since the project first started and the accountability is higher. The need now is that each student must show their abilities on each task this is going to require the program to acquire more equipment, hand on trainers, and supplies for the students.
2. The program will be trying to apply for funds or grants
 - a) Rural Development
 - b) Title III

D. BOR questions:

- Is the program organized to meet its objectives (student learning outcomes?)
YES
- Is the program meeting the student learning outcomes?
YES, we are in the process of showing implementation of them.
- Are program resources adequate?
No
- Is the program efficient?
Work in Progress
- Does your review provide evidence of a quality program?
Yes
- Are the program outcomes compatible with the student learning outcomes?
Yes
- Are the program student learning outcomes still appropriate functions of the college and university?
Yes

APPENDICES

Appendix A

General Education Standards - Critical thinking, oral communication, written communication, information technology, and quantitative reasoning (COWIQs)

Appendix B

Program Student Learning Outcomes Grid

Appendix C

Program Health Indicators includes Perkins Performance Indicators

Appendix D

NATEF (National Automotive Teachers Education Foundation) task standards or Outcomes

Appendix E

**2 + 2 Agreement between the DOE, Department of Education
and Maui Community College.**