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Auto Mechanics

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Auto Mechanics (Technology) Program

The auto mechanics diploma program was among the first at the college and started in the fall of 1967 at Center Two in West Des Moines with 12 students enrolled. The initial program was two years (seven quarters) in length. In the spring of 1969, it moved to the first building constructed (Building 14) on the Ankeny Campus—the Auto/Diesel Building. It featured a number of specialized classrooms and labs for the two programs. Subsequently, an Auto Parts program was developed to support the “live lab” in the automotive program. The faculty was actively involved in designing the Ankeny Campus Auto-Diesel Building.

Here is the first college catalogue description of the program.

The Automotive Program is designed to provide instruction in the technical theory, manipulative skills and the related information necessary for gainful employment and advancement in the automotive service field. This is accomplished through classroom instruction, laboratory experiences and shop operations that are closely related to the modern automobile. The successful completion of the program will enable the graduate to be employed as a general mechanic, tune-up specialist, front end alignment specialist, brake specialist or transmission specialist.

The curriculum was divided into four quarters of auto theory and hands-on manipulative skill development, plus three quarters of “live” work in a large, auto lab that was similar to shops in auto dealerships. Students were assigned live projects, largely autos of college employees. Students would go through the typical steps that would be followed in a shop (diagnosis of the problem, identifying parts and process, reviewing and pricing with the customer, carrying out the work on the project, testing, notifying the customer that the work had been completed, and answering questions about the work). Each student was scored, using a competency or check sheet to rate his/her performance.

The curriculum was developed with input from both the faculty and an active advisory committee that included owners of auto and auto part dealerships and representatives from auto manufacturers. Some of the key members on the advisory committee were Charles Gabus, Gabus Ford; Bill Solger, Ford District Service Manager; Bob Axtel, Axtel Ford; Leo McGowen, Service Manager at Dewey Ford; and Bill Doughten, Doughten Parts.

Changes in autos and expectations of auto mechanics were reflected in subsequent curriculum revisions. Major changes included adding disc brake operations and service, electrical charging alternator system, influx of emission control systems, new transmission designs, and service and electronic control devices.

The first instructors in the program were Ole Modtland, program chair, and instructor, Mel Tullis. Others who later joined the program faculty were Gene Keys, Jim Renwick, Don Gaster, Loren Laue and Willard Biner, who later became the second program chair. Ole had been shop manager at a Ford Dealership in Ames, and Mel had many years of auto work experience and had most recently been an automotive teacher at Des Moines Technical High School.

One of the major challenges in starting the program was the facility—a former skating rink. The building had limited electric outlets and a wooden floor. Rubber interlocking panels were placed over the floor to protect it and to provide sure footing; hoists were installed on the floor. All this was negotiated with

the building owner who was very nervous about potential damage to his facility. Fortunately, the facility did not incur any major damage during the years it was used by the college.

During the summer of 1967, faculty assumed responsibility for a variety of functions since there were few college employees. For example, the auto faculty assisted in building a marketing trailer (it had been badly damaged in the Belmont tornado) and repairing a pickup that pulled the trailer. The display was moved from location to location that included county fairs, business districts, schools and any central location that would attract visitors. Its primary purpose was to recruit students and expand knowledge of the college by offering courses, programs and college services.

Program Changes

The traditional curriculum format has remained much the same since the program's inception. Two major areas of emphasis have been added and expanded over the years: technology and computer diagnosis. An electronics course was added to the curriculum several years ago to provide a basic understanding of the area, so students could learn to use and apply results from diagnosis. The area is also included in many of the auto courses since it has an impact in most auto-specific courses.

The curriculum has been competency based since the 1980s.

Two major changes have occurred that had a positive impact on the program: industry supported programs and the DMACC Career Advantage program.

Industry Supported Programs

In the 1980s the three major domestic auto manufacturers (Chrysler, Ford, and General Motors) approached the college with proposals to support the program in several ways. Each requested that a unique curriculum component be added for students who wished to have employment in one of their dealerships.

Three industry-based curriculums were established in the 1980s:

- Automotive Service Educational Program (ASEP), General Motors;
- Automotive Student Service Educational Training program (ASSET), Ford Motor Company; and
- Chrysler Automotive Program (CAP), Chrysler LLC Company.

The goal of each of these programs is to assist the college in preparing auto graduates that can be successful in a service area of a new auto dealership by using industry-provided instructional materials, industry-specific instructional equipment and materials. Each instructor is enrolled in company-specific training programs annually. Each company donates vehicles and vehicle components to the college for demonstrations in their individual program.

Students who select an industry-based program have the support of a local auto dealer, who has a franchise for that auto maker's vehicles. Each student is sponsored by a dealer and is guaranteed a paid internship in the dealer's shop as well as having uniforms provided at no cost. The student who applies for one of the industry program is interviewed by the cooperating dealer, who then selects the student. Dealers assume students will be highly productive upon completion of the program where they become full-time employees in the dealership.

Each industry-supported student completes the first two semesters of the automotive program before working in the sponsoring dealership on an internship in the third semester. In the remaining semesters the student alternates between time spent at the Ankeny Campus and at their sponsoring dealership.

Industry Support of the program

Over the years, the three auto companies have provided vehicles and vehicle components for use in the industry-based programs as well as the general automotive program. The number of autos donated has been substantial each year since the industry programs started and varies from year to year, based primarily on the fluctuation in auto sales. In 2014 it is estimated that the value of autos donated was over \$300,000. These autos are used in teaching specific processes and functions to students. This is far superior to "live work" on privately owned autos since it reduces liability for the college and does not consume faculty time to correct a student error on a live auto. In 2015 the college has received 16 donated autos and currently has an inventory of 130 to 140 recent autos that can be used in instruction.

The manufacturers require that instructors who teach their selected students attend industry-related update training annually. The National Automotive Teachers Education Foundation or NATEF is the accrediting agency for all automotive programs. NATEF requires instructors attend a minimum of 20 hours annually, but in these manufacturer-based programs, that number is easily doubled if not tripled. This update training can be web based, virtual classroom, or instructor led. The manufacturers also provide service information to the instructors for use in their classes to prepare students for a career in automotive.

The manufacturers also offer summer instructor update training at their training centers for community college auto faculty who teach students in the industry programs.

The manufacturers also provide support on the computer applications for diagnosis in their autos to the college. Over the years these diagnostic procedures are more uniform and less manufacturer-specific as manufacturers have discontinued developing their own systems and use outside developers and suppliers. Federal legislation has also forced consistency in some testing, primarily in emissions.

Student Enrollments

In the early days of the program, 24 students were enrolled each fall. Over the years this number increased when the program moved to a new building that increased the size of the live lab and added classrooms and support functions. In recent years 60 students are enrolled annually in the auto technology program and an additional 30-35 in industry-supported programs (ASEP 20, ASSET 10 to 12, and CAP 4-5).

Current incoming students have less experience working with autos since electronics are a major component and require fewer routine repairs. The average age of entering students has decreased with most right out of high school (18-20 years old): a few older registrants have been in the armed forces and have GI Bill support. Gender mix continues to be predominately male with two or three females. In the past very few females enrolled, and there were several years when none were in the program.

The program attrition rates vary between industry-specialized students (30 percent) vs. auto technology students (up to 60 percent).

Most students who do not continue on in the program after the first year are eligible to obtain an automotive diploma but only about 50 percent of these students make application for the award.

Competitions

Students in the program have competed successfully with students in other similar colleges in local, state and national competitions that are directed by Skills USA (formerly Vocational Industrial Club of American). DMACC is designated as the site of the state competition each year when 20 high school and 20 college auto students compete in a variety of problem-solving applications to qualify for the national competition.

The two state winners and their instructors are selected to attend and represent the state of Iowa in the SKILLSUSA national competition in Kansas City, competing against other states to become the national champion. Several DMACC students have received this honor.

More than 300 students compete annually in the IADA/DMACC (Iowa Auto Dealers Association) High School Skills Contest, a state competition which has the support of the association. Each student takes a 100-question automotive exam. DMACC has placed students in the top 10 for the past two years and has a long record of success in the competition.

The top placing eight schools will come back for a hands-on contest. During this hands-on contest, two students from the school will compete as a team. The students will complete in eight different hands-on automotive stations, testing their knowledge in all aspects of vehicle systems.

The two state winners and their instructors are selected to attend the New York Auto Show with all expenses paid.

Career Advantage Program

The Career Advantage program is directed toward juniors and seniors in high school. Currently, automotive sections are offered in six locations (Ankeny, Southridge in Des Moines, Newton, Ames, Perry and Carroll). High school students attend half days for two years. The curriculum includes competencies in the two-year automotive program. The program is primarily as an exploratory experience for students although a student who satisfactorily completes the program can be granted up to 15 credits in the two-year automotive program. Students demonstrate proficiency in competencies that are a part of the two-year program.

Program Advisory Committee

The program has had an active advisory committee since its inception in 1967. Generally, the committee meets two or more times a year. The committee is composed of representatives from local auto dealers, auto industry personnel and specialized automotive shops. Large, medium and small companies are represented on the committee. The meetings are held during the day in the automotive building around the lunch hour. Each of the program competencies are reviewed annually by the committee as are the courses. Suggestions are encouraged to allow the curriculum to stay consistent with industry expectations and the needs of the local employers. Trends are identified as the basis for changes. The committee also evaluates the equipment used to support instruction as well as the facilities.

The committee has played a key role in the ongoing update and revision of the curriculum and identifies competencies that are essential to have in the curriculum—as well as advising when curriculums can be revised or eliminated. The curriculum continues to be based on the basic ASE categories, which reflect the service expectations of the auto industry.

The automotive program was one of the original vocational-technical programs offered by the college. Over the years enrollments have increased in line with the demand for graduates. It has been supported by an active auto dealer advisory committee and the three major U. S. auto manufacturers.

Faculty

A number of faculty members have served students in the program over the past 50 years. Below are the names of the faculty from the inception of the program in 1967 through 2015.

Armbrecht, Mark; Biner, Willard*; Burns, Jerald*; Calkin, Jeffrey; Carpenter, Dick; Gaster, Don; Gimer, Brett; Havens, Roy; Hendrick, Bill; Irwin, Bill; Johnson, Adam; Kees, Gene; Marmon, James; Modtland, Ole*; Netcott, Curtis; O'Bannon, Jeffrey; Peters Randall; Renwick, James; Richardson, Ralph; Russell, John; Sander, Michael; Seaman, Gregory; Smith, Veryl; Smith, Dennis; Trower, Ron; Tullis, Mel; Underbakke, Rick; Wersinger, Keith and Weuve, Wesley.

*denotes program chairs

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