

---

## Automotive Technology

Cycles included in report:  
Cycle #3 8/1/14 to 7/31/15

Program Name: Automotive Technology  
Program Cycle: #3 8/1/14 to 7/31/15

## 1 Program Summary Summary

If you're interested in anything and everything automotive, JCCC has the classes to let you pursue your passion. The program is certified by the National Institute for Automotive Service Excellence (ASE) and concentrates on a theoretical background in diagnosis and tune-up, chassis, electrical/electronic and hydraulic systems, automatic transmissions, engines and emissions.

You can work on developing the practical skills you need to fix vehicles as well as other skills needed to advance to a supervisory position, including customer relations, estimating materials and labor costs, and managing the work of others.

### Mission Statement of the Department

The mission statement of the Department of Automotive Technology is to

- Train students to be successful entry level automotive technicians
- Prepare students for transfer to 4 year institutions
- Train local technicians
- Work with manufacturers to offer their training
- Follow all JCCC rules and regulations

Automotive Technology [PDF 755 KB 9/2/14]

Declared Majors AUTO [PDF 186 KB 11/24/14]

HandbookProgramReviewFall2014 [PDF 2,136 KB 9/2/14]

### 1.1 Degree Offerings

There is one degree offered by the AUTO program, as Associate of Applied Science in Automotive Technology.

### 1.2 Certificate Offerings

There are no certificates offered by the AUTO program at this time.

## 2 Program Resources

Students who enroll in AUTO courses have use of the following during scheduled time frames:

Up to 10,250 square feet of lab space

30 donated/purchased vehicles with an average age of 14.7 years old

Physical inventory of equipment approximately \$300,000.00

Perkins inventory of approximately \$78,000.00

Times for specific use of each space vary depending on program needs and semester. For detailed information refer to the JCCC course schedule.

## 3 Reflection on Institutional Data

The total number of sections offered in the program is higher than other community colleges in the area. The course completion rate is outstanding (Averages between 94-96.7%).

The program underwent major restructuring in 2011 with course realignment from the Kansas Board of Regents. This mandatory process required all colleges with programs under their jurisdiction to teach the same objectives in specific entry level courses. For example, Electrical used to be one course. It is now three courses. Electrical I is the KBOR aligned course that covers the same information at every KBOR AUTO program. There is still a ripple effect from this process three (3) years later. For example, the certificate (4710) that was offered until 2011 did not align with the new courses. It would have required nearly seventy-five (75) % of the course work for an A.A.S. degree to complete the certificate. Additionally, our accrediting models from the National Automotive Technician Education Foundation (NATEF) were changed vastly in 2012 and again in 2013. This is significant because JCCCs AUTO accreditation was set to expire in April, 2014.

The data provided does not reflect the end result of all of the students who take courses in our

program. Institutional Effectiveness only seeks data from those that complete a degree or certificate, of that number; they are only calculating data from those that respond to the survey. Return rates on the most recent available data in 2012-13 were sixty-seven (67) % or eight (8) out of twelve (12). One (1) student out of eight (8) was unemployed, looking for work. The skills taught in our classes enable the students to seek a job without completing their degree.

The classes offered by the program are not duplicated in any other area of the college. All of the classes require specialized equipment and spaces that are squelched because of this matter. Simply stated, there is not enough room to accomplish tasks without equipment from another course getting in the way. The demand for our courses is high. Course offerings are within our industry accrediting model in addition to a number of technical electives. Our full-time faculty members bring over seventy-five (75) years of combined experience in industry independent of time spent as educators. Our part-time faculty members bring over two hundred fifty (250) years of combined experience.

#### **4 Student Success**

Upon successful completion of the program, the student will be trained in the technical skills necessary to enter the job market as an entry-level automobile service technician. All degree seeking students begin from the point as if they have never made a repair of any kind on an automobile. The program covers a well-rounded and complete electrical/mechanical aspect of the automobile. That being stated, experienced technicians also return from industry to take individual courses for updates. Students may also take courses to specialize in certain aspects of the car and never seek the degree. We also have students that come to JCCC with a Bachelors degree in an unrelated area and take the NATEF core training to learn a new trade. In terms of comparing our total enrollment with number of AUTO students that do not complete a degree, our course completion rate (average 95%) supports that many students come here to learn a skill. We fulfill a need for our students and community, be it for personal interest, starting a new career, or continuing education.

##### **4.1 Define Student Success**

Due to the high demand for competent automobile technicians, some of our students leave upon finishing all of their AUTO courses without taking any General Education courses. As faculty, we encourage students to complete their degree. We are receiving feedback that our best students are being offered raises to quit school in order to work in lieu of completing their degree. This is typically during their second year of school. Student success would best be measured by the NATEF core course completers that use their acquired skills in their daily job. Our course completion and success rates support this information.

##### **4.2 Achieve/Promote Student Success**

The faculty stress from day one in our core courses that every class has a part in making a complete, successful, well-rounded technician. This includes the skills acquired through general education courses. Recognizing that this may not be for everyone, we are going to pursue adding a Certificate back into the AUTO program. Historical data shows that as recently as 5 years ago, individuals seeking a certificate made up seventy-five (75) % of our students.

The AUTO program is initiating an award this year. The Excellence in Automotive Technology award winner will be selected by faculty using criteria approved by the program advisory board. While the criteria has yet to be completed, the initial thought is only degree seekers/completers would be eligible for the award.

##### **4.3 Successful Transfer**

There are two (2) accredited schools with a Bachelor of Science in Automotive Technology within a reasonable driving distance from JCCC. Pitt State in Pittsburg, Kansas and the University of Central Missouri, in Warrensburg, MO. These schools are two (2) of only twenty (20) in the nation that offer this type of degree. Both programs have very high placement rates for their graduates, and report excellent starting salaries.

The AUTO program has had articulation programs with both schools. They are no longer required due to the reciprocity agreements in place if a student comes in with an A.A.S. in hand. Though few in number, we have had students transfer to both programs every year. It has also been determined that many students do not know that such an opportunity exists. This semester we have given a

representative from Pitt State the opportunity to present this option to students in our AUTO 125 class. This will allow them to consider the option earlier in their studies.

## 5 Assessment of Student Learning Outcomes

Assessment&#38;CurriculumChart [XLS 41 KB 9/2/14]

Program Review Assessment Chart [XLS 44 KB 11/24/14]

### 5.1 Reflection on table provided on assessment.

The AUTO program has been involved in the assessment of student learning in several courses for the last few years. This started in AUTO 125-Introduction to Automotive Shop Practices, Engine Repair-AUTO 165, and Steering and Suspension-AUTO 145. We are integrating assessment into all of the core courses that line up with our accrediting model. This was just instituted this semester. No data has been collected at this time.

### 5.2 Significant Assessment Findings

We have not had enough data to accurately measure where we were at until last year. The findings indicate learning is taking place at a marked improvement between 10-25%.

### 5.3 Ongoing Assessment Plans

As previously noted, we are now assessing student learning for our core course based on the model from the accrediting body for the AUTO program, NATEF. The exceptions would be in courses that have progress with the degree. In other words, even though there are three consecutive Electrical course, we do not assess until Electrical III. This also correlates with industry-based testing. If we see a weakness in Electrical III and it is identified as data that was covered in Electrical I, we can still make the same change. This process has just started this semester, we have no data collected at this time.

## 6 Curriculum Reflection

Our accrediting agency, NATEF, requires us to review curriculum with our industry-based advisory board once a year. Additionally, we review curriculum needs through course evaluations, graduate feedback/exit surveys, and observations from annual mandatory technical training. For additional information regarding course offerings, see chart 5.1 and section 6.2.

### 6.1 Honors Contract(s)

There are no AUTO courses with Honors contracts.

### 6.2 New Course Offerings

There was one (1) new course offered in the last year, AUTO 235, Hybrid and Alternative Fuels Vehicles Maintenance and Repair. Two (2) new courses are in committee right now with anticipated offering in the Spring of 2016, AUTO 150 Steering and Suspension and AUTO 151 Alignment Practicum. These two courses will replace AUTO 145 Steering and Suspension. We are seeking to modify our AUTO 201 ASE Certification Seminar to become an End-of-Program testing course. Finally, we will be developing a Maintenance and Light Repair (MLR) course to complete new certificate for AUTO that should be available by Fall semester of 2016.

## 7 Faculty Success

### 7.1 Departmental Accomplishments

The AUTO program is focused on training students to be successful entry level automotive technicians, prepare students for transfer to 4 year institutions that wish to do so, train local technicians, and work with manufacturers to offer their training.

The Automotive Service Association of Missouri and Kansas (ASA-MOKAN) facilitates the largest independent training opportunity for automobile technicians in the country, Vision KC. The main portion

of the event is held at the Overland Park Convention Center. The AUTO program hosts two hands-on courses for this event every year. Thereby giving the Johnson County Community College and the AUTO program facilities national exposure.

In addition to the courses we offer, the AUTO program plays a role in serving the campus by working on vehicles for members of the JCCC community. We accept vehicles to work on based on how they fit into our course curriculum and time constraints.

The AUTO program recently completed a grant awarded by the Student Committee on Sustainability for integrating Hybrid Electric Vehicle Technology into our courses. This corresponded with the previously mentioned new course specifically for hybrids and alternative fuel vehicles.

The AUTO program recently completed realignment through KBOR. This forced a complete shift in all of our core courses and is still a moving target as changes have occurred each year since. This has been taxing on the remaining full-time faculty as the time spent on this takes away from the quality in the classroom and lab experience.

The AUTO program just re-accredited at the Master Automobile Service Technician level for the next five (5) years. This model was also recently changed which included competency/task changes and a ten (10) % increase in the number of contact hours required.

## **7.2 Faculty Accomplishments**

All full-time AUTO faculty are certified by the Institute for Automotive Service Excellence at the Master level. JC James, Jack Ireland, and Richard Fort are certified as Advanced Level Specialist in Engine Performance. All of these tests require passing update exams every five (5) years. Our full-time faculty members bring over seventy-five (75) years of combined experience in industry independent of time spent as educators. Our part-time faculty members bring over two hundred fifty (250) years of combined experience.

All full-time instructors have interviewed with the JCCC Ledger on various automotive based topics.

All full-time faculty attend a minimum of 20 hours of technical training per year.

Jack Ireland is a member of six (6) Automotive Advisory Boards throughout the region

Jack Ireland is trained and certified by the National Automotive Technician Education Foundation as an on-site accreditation Evaluation Team Leader.

Steve Carr is a member of the Automotive Advisory Boards in the Shawnee Mission school district and the Olathe school district.

JC James was an independent business owner (Automotive Repair Shop) for fifteen (15) years prior to teaching.

William J Brown has been an ASE Certified Master Automobile Technician since 1973.

William J Brown was a trainer for General Motors for 13 years.

## **7.3 Innovative Research, Teaching or Community Service**

Jack Ireland has served as the lead judge for Steering and Suspension at the National Automotive Service Technology competition for Skills USA since 2005.

Jack Ireland is a key presenter for the Kansas City Metro Summer Institute for area high school Automotive Technology instructors. This consists of teachers from both Missouri and Kansas.

# **8 Goal Setting and Action Plan**

## **8.1 Long-term Goals**

1. Assess at least one SLO in every course offered by the AUTO program, not just core courses.

(Measure Student Success)

2. Obtain vehicles in order to lower the average age of our existing training fleet currently at 14.7 years old.(Assess JCCCs performance against the performance of peer institutions)
3. Add a certificate/degree endorsement for light diesel (nationally accepted indicator, the need for technicians with diesel knowledge is equal, if not greater than automotive in some regions)
4. Improve awareness of the option of a BS degree in Automotive Technology. (Measure student success via transfer rates)

### 8.1.1 Actions/Resources Required

1. The basic structure is in place. It will take a lot of time to sort out course objective and accreditation competencies. Authorizations for special projects over the summer for full-time faculty or during the school year for adjuncts would assist this goal.
2. Shy of purchasing vehicles outright, which may be necessary, we can work with the JCCC Foundation to foster relations with alumni to contribute to the program as the point is rapidly approaching when the average age of our training vehicle will be the same or older than our students.
3. Seek input from the AUTO program Advisory Board as to how far to pursue this option. Grants may be available for clean fuel technologies, in addition to funding for rare programs within a field that has high demand.
4. Jack Ireland already serves on the Advisory Board at UCMO. JCCC needs to reciprocate by having a member of the UCM faculty on our Advisory Board. In addition, JCCC needs to have a faculty member on the Pitt State Advisory Board. PSU already has a member on the JCCC AUTO Advisory Board. Ideally, we would need funding for interested students to visit either/both locations due to their close proximity. This would take the form of a field trip to an industry location except this would be for transfer opportunity purposes.

### 8.1.2 Updates on Long-Term Goals

These goals were just established. No updates at this time.

## 8.2 Short-Term Goals

1. Reorganize the lab to increase efficiency and free up the instructor to teach and not search for tools and resources that are stored in numerous points throughout the AUTO area. This includes the purchase of hand tools for student use. (Measure Student Success)
2. Obtain training equipment that coincides with multiple platforms throughout the vehicle to improve and increase student learning. This includes trainers on electrical systems, engine performance, air conditioning, and clean diesel with exhaust after-treatment. These trainers are not simulators as they contain working automotive systems just as they would on a car or truck. (Measure Student Success)
3. Use the 2011 Toyota Prius to Market the AUTO program to potential students by visiting high schools and career events. Ideally, JCCC logos, mascot, and the AUTO program name and website would be prominently displayed on the exterior of the vehicle through paint or vehicle wrap design.(Can be used as benchmarks to assess JCCCs performance against the performance of peer institutions) JCCC was the first community college in the area to successfully offer a credit course for hybrid vehicles. We can take this one step further by using the vehicles to market the program.
4. Institute a policy for Motor Vehicle Record checks on students in classes where operating a customer owned vehicle is necessary. This would not prevent a student from participating in the program it may prevent them from being employed. Performing this early in their studies not only protects the college, it allows the student time to correct their actions to be employable. (Provide Institutional Focus and Accountability)

5. Modify ASE Certification Seminar, AUTO 201 to become ASE/NATEF End-of Program Testing (Nationally Accepted Indicators and Measure Student Success)
6. Re-establish at least one certificate for the AUTO program.

### 8.2.1 Actions/Resources Required

1. One of the largest inefficiencies in our lab is the lack of tools. The increased demand for quality technicians has forced students to choose where to have their tools; work, school, or home. Many are trying to use their tools in each place as they also have to maintain personal vehicles to get to and from each place. Instructors that teach hands on labs for subjects such as brakes, steering and suspension, air conditioning, engine repair, and transmissions have had to make sacrifices on live work because students could not provide enough tools while choosing between work and school. Additionally, tools are stored in rooms throughout the program. We need to centralize to as few rooms as possible, preferably one (1) or two (2). Due to the high volume of classes, there would ideally be a lab aide available for day, evening, and/or weekend courses. The approximate cost of tools would be \$60,000.00. An alignment machine and hoist for use in one course costs \$60-70,000.00. The tools in this goal as it is stated would have program-wide implications. We are often asked by high school counselors if hand tools are provided, and if not, how much they cost.

2. The type of trainer mentioned in this goal would require between \$3,500 and \$25,000.00 each. Most are less than \$10,000. Of the schools using these technology, improved understanding demonstrated by higher test scores, increased motivation from students from being able to visualize systems in operation something that does not always happen with a real car, and a good first impression on prospective student and parents that tour the facility to see that this type of technology is being used in our program.

3. This process would require the approval of Marketing and perhaps Legal for the use of the JCCC mascot and logo. It would also require funding for the artwork, paint, or vehicle wrap to put on the vehicle itself. Exact cost unknown at this time, projected to be in the \$500.00-\$1000.00 range. However, with the information actually on a vehicle that is already licensed to drive on the road, it could reach thousands of people in a short amount of time just due to visibility.

4. This process also requires fees that cannot be absorbed anywhere in the existing AUTO program budget. Fees could exceed \$1000.00 annually for the process of checking driving records for each student.

5. It is likely this testing will cost in the \$30-50.00 per student range for all eight (8) ASE areas. This amount cannot be absorbed anywhere in the existing AUTO budget. Based off our most recent graduation rates this would be an increase of \$1000-\$2000.00 per year, as it will be available at the certificate and degree levels. The course modification for the existing AUTO 201 class will need to make its way through committee as the overall objective of the course change very little, only the way the course itself is being utilized within the program.

6. Program review made it clear just how important a certificate is to the AUTO program. As little as five (5) years ago, over half of the AUTO students were certificate seekers. As a result of KBOR and NATEF realignment, our previous certificate was deleted. There was just too much difference based on the new course structure. KBOR realignment for AUTO occurred in 2011. NATEF realignment did not occur until 2012 and again in 2013. Now that both are complete, we can pursue at least one certificate by developing only one (1) new course to the AUTO program.

### 8.2.2 Updates on Short-Term Goals

This goal was just established. No updates at this time.

## 9 Accreditation Standards

The AUTO program has implemented a web based software program (CDX light-vehicle) to foster a process of continuous quality improvement. This fulfills AQIP category one (1), helping students learn. This is a comprehensive program that supplements our core curriculum with videos and inter-active training exercises. It also utilizes pre-tests and post-tests to assess student learning. Lastly, we are able to track individual student competencies for each task we assign. From this program, faculty can generate reports that serve as evidence as to what is going on in our classroom and laboratory experiences.

### **9.1 Specialized Accreditation**

The AUTO program is accredited by the National Automotive Technician Education Foundation at the Master Aut

#### **STANDARD 1 PURPOSE**

The automobile technician training program should have clearly stated program goals, related to the needs of the students and employers served. See short term goal 6.

#### **STANDARD 2 ADMINISTRATION**

Program administration should ensure that instructional activities support and promote the goals of the program. See long term goal 3 and short term goals 3 and 4.

#### **STANDARD 3 LEARNING RESOURCES**

Support material, consistent with both program goals and performance objectives, should be available to staff and students. See short term goal 2.

#### **STANDARD 4 FINANCES**

Funding should be provided to meet the program goals and performance objectives.

#### **STANDARD 5 STUDENT SERVICES**

Systematic skills assessment, interviews, counseling services, placement, and follow-up procedures should be used. See long term goal 1.

#### **STANDARD 6 ADVISORY COMMITTEE**

The Advisory Committee, a group of volunteers that meets regularly on a long-term basis to provide advice and/or support to a training program.

#### **STANDARD 7 INSTRUCTION**

Instruction must be systematic and reflect program goals. A task list and specific performance objectives with criterion referenced measures must be used. See long term goal 4 and short term goal 1.

#### **STANDARD 8 EQUIPMENT**

Equipment and tools used must be of the type and quality found in the repair industry and must also be the type needed to provide training to meet the program goals and performance objectives. See long term goal 2 and short term goal 1.

#### **STANDARD 9 FACILITIES**

The physical facilities must be adequate to permit achievement of the program goals and performance objectives. See short term goal 1.

#### **STANDARD 10 INSTRUCTIONAL STAFF**

The instructional staff must have technical competency and meet all state and local requirements for accreditation.

Additional information of NATEF accreditation can be found at:

<http://www.natef.org/NATEF/media/NATEFMedia/Accreditation/Accreditation%20Docs/2013%20Accreditation%20>

## **10 Resource Request/Adjustment**

As with many Automotive Technology programs, the need for equipment is costly. We are forced to



improvise and overcome technological barriers as the tools and equipment that are used to work on vehicles are not designed to teach with. Most, if not all tools are designed for use by a one person at a time on a vehicle. Recently, larger training aids have been designed specifically for this issue. Johnson County Community College does not own any of them. Adding these trainers to the AUTO program is part of our short term goals and we are working with our Advisory Board to determine where our most critical needs are at.

We anticipate an increase in course offerings. The AUTO program is requesting additional release time for the department chair. Two years ago, department chairs in the Technology Division were all told their release time for chair duties was being cut in half. Most department chairs have two or less workload release hours or less per semester. As far as we know, we were the only division to which this drastic cut was implemented. Duties for chairs were not reduced. In fact, we now have more duties than we did a few years ago.

The AUTO program has one full-time faculty member retiring in December, 2014 and another that could retire soon. We are seeking to replace full-time faculty members and have a part-time lab-aide in place for evening/weekend courses, and/or to fill-in during the absence of our lab aide. We believe this be paramount for preservation of assets and laboratory safety.

### **10.1 Long-range Adjustment to Resources**

AUTO Budget Information [XLS 2,010 KB 11/28/14]

### **10.2 Educational Technology Support**

AUTO Program ITP [XLS 30 KB 11/28/14]

End of report