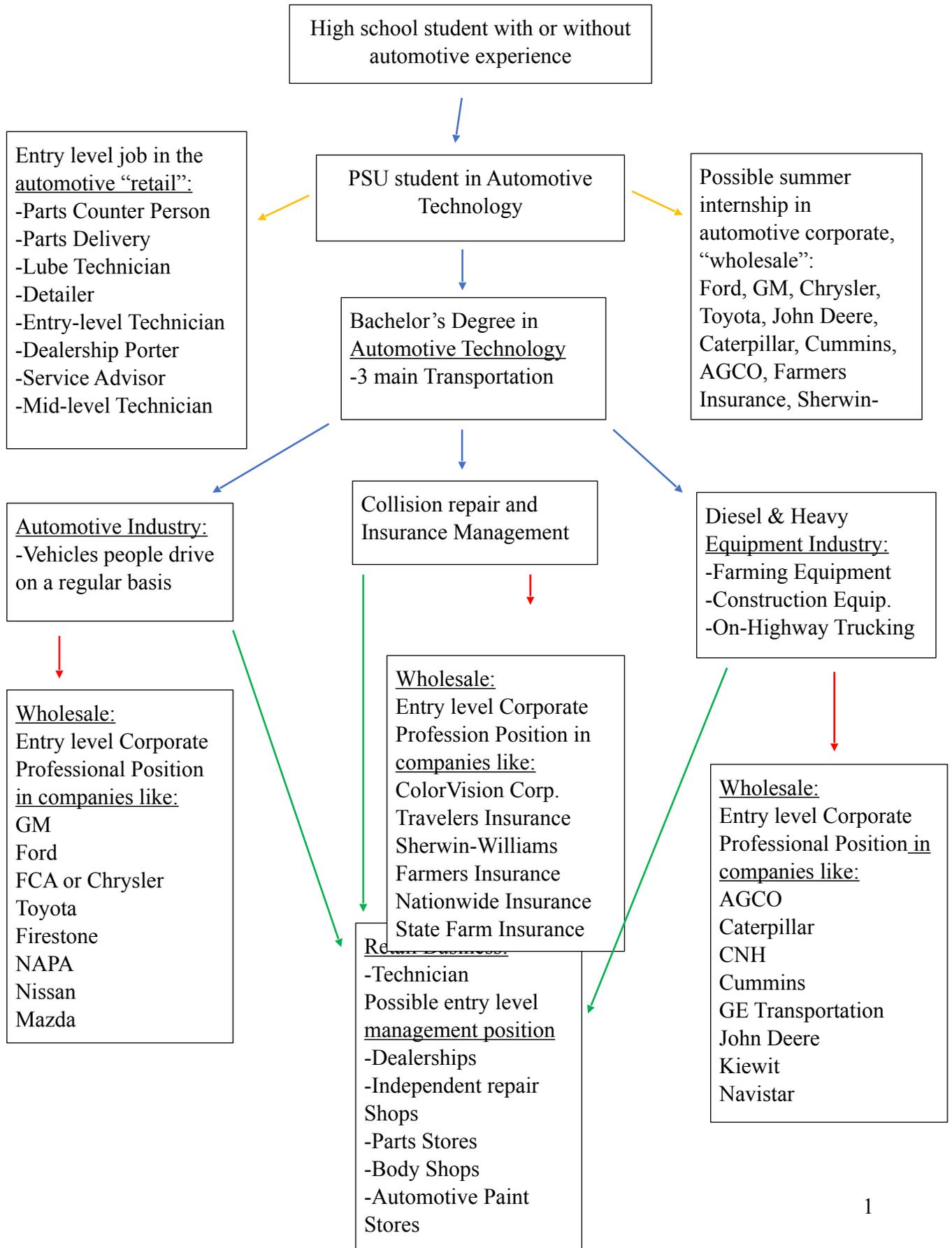


## Career Paths from PSU's Bachelor's Degree in Automotive Technology



## **Types of Entry Level Jobs with a Bachelor's Degree in Automotive Technology**

**Retail:** Working with the public at a dealership or independent shop (aftermarket) in the areas of service, parts, sales, and the body shop.

**Technician** - Graduates begin their career as a service or body/paint technician and can work up to shop foreman, service adviser, assistant service manager, service manager, service director, VP of operations, president, to owner of their own business.

**Service Advisor (also known as a service writer)** – One of the most common entry level jobs a four-year graduate chooses to pursue at a dealership. Graduates serve as the first line of contact for customers with service-related inquiries. They work directly with the technicians, shop foreman, service manager and customers to schedule the cars, trucks or tractors to be repaired. These positions require excellent communication skills and interpersonal skills due to job requiring communicating with numerous different individuals including: the customer, dealership personnel and manufacturer personnel. The position can also involve aftermarket components and solutions as well working directly with the manufacturer warranty group.

**Sales** – Graduates begin their career as a car, truck, or equipment salesperson and can work up to vehicle financing, assistant sales manager, sales manager, sales director, VP of operations, president, to owner of their own business.

**Parts Sales, Paint Sales, or Aftermarket Accessories** – Graduates begin their career as a parts or paint counterperson or delivery driver and can work up to assistant parts/store manager, parts/store manager, regional director, to owner of their own business. Aftermarket Accessories can include areas in 4 X 4 off-road, performance, racing, audio, electronics, and equipment implements.

**Wholesale:** Entry level professional corporate position with a national transportation company or manufacturer. There are hundreds of different positions in these national companies from which the graduates can choose to follow to work up the corporate ladders to major management in these companies. Below are examples of these entry level positions.

**Technical Hotline Representative** – Entry level position with companies like Ford, Cummins, and FIAT Chrysler Automobiles. graduates begin their careers with these companies by helping dealerships diagnose and repair vehicles over the phone or internet. Graduates are assigned to a technical group (like engines or transmissions) and work closely between the dealership technician and engineering groups. Graduates must have very strong technical and diagnosis skills for this position and can work up to a **Field Service Engineer (FSE)**. In the FSE position, graduates become the Corporate Super Tech who is directly sent to the dealership to help technicians diagnose and repair vehicles that cannot be fixed by the technical hotline group. A company car would normally be provided in this position.

**District Manager** – Graduates begin this entry level position with national companies as a field representative in areas of sales, service, parts, and/or warranty. Graduates work in the “field” (away from the national headquarters) out of a business center or their own homes. They are product support representatives who travel a territory and assist dealership or stores in running a successful business. The geographic territory might be the size of one fourth of the state or can be large as one fourth of the United States, depending on the size of the company. A company car is normally provided in this position.

**Insurance Claims Representative** - Graduates begin this entry level position in a variety of areas including claims, total loss/salvage department, catastrophe teams, and field appraisers. Graduates can work in a national office or out of their homes in the “field” with a company vehicle.

**Writer/Literature Developer** - Graduates begin their career by writing service, owner, or repair manuals for major manufacturers. This position is normally located in the national headquarter city.

**Fleet Equipment Manager** - In this job, graduates manage equipment by performing preventative maintenance inspections on equipment and scheduling repairs to ensure the equipment is available for everyday production. The position requires managing the equipment backlog, which is the log of future necessary repairs. They help assemble the technicians work schedules. They work with the production managers to pull the machines out of service so that they can have technicians perform extensive inspections, such as a 500-hour preventative maintenance inspection. They work with local part stores and dealerships to ensure that the fleet has the correct inventory of components in stock to maintain the fleet. They work extensively in the company’s database managing the equipment records to ensure the machines are achieving maximum efficiency for production. This position is normally located in the field on a construction site or a regional service center.

**Service Quality Engineering** - Graduates start their career in a major manufacturing company testing prototype components, automobiles, tractors, and equipment for reliability, serviceability and functionality. The location of these positions is normally in the company’s headquarter city and may involve working in the “proving ground.” However, engineering test technicians can spend a large portion of their time in the field following the prototype machines. For example, a combine harvester test technician would start in Texas on the wheat harvest and follow the machines as they progress into Canada.

**Service Training Instructor** – Graduates start their career in a major manufacturing company by training dealership technicians on the latest vehicles, trucks, and equipment. This position is located in the many Training Centers throughout the nation and instructors have access to all the latest tools, equipment, and corporate vehicles. Graduates must have strong technical skills for this position, and a company car is normally provided for travel during remote training assignments.

## **Types of Education in the Automotive Industry:**

### **What is different about a Bachelor's Degree in Automotive Technology?**

When people think of jobs in the automotive industry, they may think of 3 different levels of jobs: the assembly line worker, the service technician, and the engineer.

As far as education level of these three careers, the **Assembly Line Worker** may only need a high school diploma to qualify for this non-skilled job. These “factory jobs” are only in major cities with assembly plants and are becoming more and more rare due to automation of the plants.

The **Service Technician** normally requires an associate (2-year) degree in automotive technology and is considered a vocational skilled job. The great thing about this degree is the service technician can work anywhere in the thousands of dealerships or shops in every city of the nation. Service technicians have essential skills that are in high demand, and they can always find work. This type of work has a high physical demand, and students must have a high mechanical aptitude to be successful.

The **Engineer** has the highest level of education of the three and requires a bachelor's degree in mechanical or electrical engineering (a very demanding curriculum with lots of math). The Engineer obtains a professional degree, and the curriculum does not normally involve any automotive classes, but instead, lots of theory classes like Statics, Kinematics, and Thermodynamics. Most engineering jobs are in major cities where the manufacturer has headquarters or a business unit.

**There is an old saying: It takes 1 Engineer to design it, 10 assembly line workers to build it, and 100 service technicians to keep it running for its lifetime.**

### **Where does a bachelor's degree in Automotive Technology fit into the transportation industry?**

The PSU's bachelor's (4-year) degree in automotive technology teaches both the vocational skills of the automotive and heavy equipment technician and the professional skills for management in the transportation industry. PSU's bachelor's curriculum is a bumper to bumper program where graduates become general automobile, vehicle, or equipment experts. Students spend 4 years studying automotive technology compared to 2 years for an associate degree. These 2 extra years allow students to take some of the following more advanced classes in the automotive curriculum:

Hybrid, Electric and Fuel Cell Vehicles  
Mobile Fuels, Lubricants and Alternate Fuels

Advanced Engine Performance  
Automotive Finishing & Refinishing

Fluid Power  
Failure Analysis  
Dynamometer and Performance Testing  
Fundamentals of Collision Technology  
Diesel Engine Fundamentals

Structural & Non-Structural Analysis  
Off-Highway Systems  
On-Highway Systems  
Advanced Diesel Electronics  
Advanced Hydraulic Systems

Damage Analysis, Estimating, & Insurance Appraisal

Students in the bachelor program can also learn about the business side of the automotive industry from classes in the curriculum such as:

Dealership Service Operations  
Service Management Seminar  
Dealership Sales Operations

Some students choose to earn a business minor along with their automotive degree. This can help a student if they ever want to open their own business someday.

All students in the PSU automotive technology bachelor program receive the vocational skills as a service technician. Many students will start their career as service technicians to gain the hands-on skills needed to be successful in the highly technical areas in the transportation industry. **The bachelor's degree allows students more options for a career upon graduation.** Students can either enjoy the very satisfying career as a high-level service technician in the retail business or move to a wholesale corporate position in the transportation industry.

### **Is a bachelor's degree in automotive technology the right program for me?**

To answer the above questions, let's look at what students would learn about the part (an engine balance shaft) featured below in the different programs.



If we were teaching assembly workers about the balance shaft on a new engine, we would teach them how to install the shaft correctly in the engine; then have them practice installing it a dozen times before the assembly line went live with the new part. The assembly worker cares how to install the part correctly at a very fast pace, over and over again.

If we were teaching a student in the 2-year associate program about the balance shaft coming out in a new engine, we would talk about diagnosis, service, and repair of the balance shaft. We would have the student take the engine apart, remove the balance, and replace the balance shaft correctly with the new part. The student would probably only get one chance to remove, time, and install the balance shaft. A service technician would care about diagnosing balance shaft problems, timing balance shafts, checking bearing clearances, and replacing one if necessary.

If we were teaching in a mechanical engineering program, there would be no engine class and students would not take anything apart. There could be a discussion on how to design a balance shaft or about the manufacturing processes for the shaft. A balance shaft engineer would care about what material the balance shaft is made of, how to calculate how much weight is needed, the angle of the gears, or the surface finish of the bearing journal.

In the PSU automotive technology bachelor's program, teaching about the diagnosis, service, and repair of the new balance shaft would be the same as the 2 – year program. **The students of the 4 -year program would also need to be able to explain the “why” and the “how” of the subject.** Students may need to write a paper explaining how the above balance shaft lowers vibrations on a 4-cylinder engine. Students may give an oral presentation on why balance shafts are needed on a 2.4L engine but not a 2.0L engine. There may be a discussion on second order engine vibrations on a 4-cylinder engine and why this type of balance shaft is not needed on other engine configurations. There will be no balance shaft weight calculations in the 4-year engine class. **The baccalaureate students need to understand why the components of a vehicle work the way they do, more than how to diagnose, service, and repair.**

Graduates of the PSU 4-year automotive program need to be able to “**Walk the Walk**” and perform the same tasks as a service technician. They also need to be able to “**Talk the Talk**” and be able to talk to the balance shaft engineer and understand why the shaft was designed the way it was.

Graduates from the PSU bachelor's degree in automotive technology program normally go into work with the sales, parts, and service side of the industry. This is the side of the industry that is responsible for the vehicle, truck, or equipment once it rolls off the assembly line for the life of that vehicle. This is because these sides of the industry are the biggest areas of the transportation industry with the most jobs, careers, and opportunities. Engineering can be done anywhere in the world, production can be moved overseas, but it is very hard to move the sales, parts, and service side of the industry away from the customer. Job security is another benefit of earning a bachelor's degree in automotive technology.