

# Alaska Gasline Training Plan Report



AWIB Report

February 22-23, 2010

Alaska Department of Labor and Workforce Development

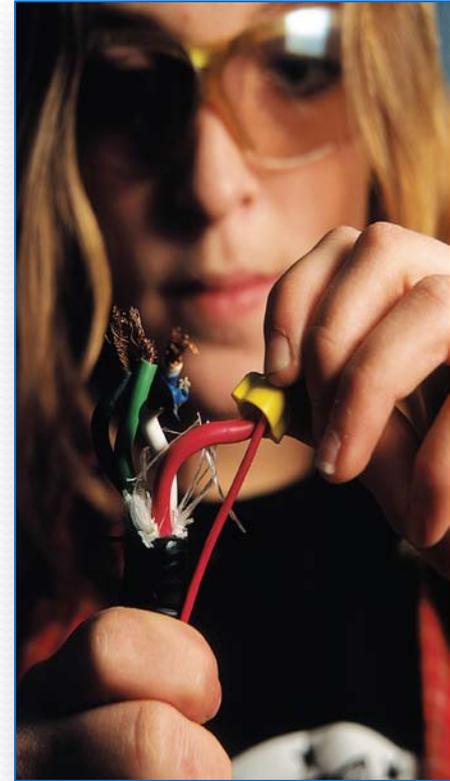
# Gasline Workforce Goal

- Train Alaskans with portable skills, preparing them for gas pipeline, construction and other natural resource development jobs.
- While promoting these jobs to Alaskans.



# Gasline Workforce Plan

- Inventory the State
- Identify needs and skills gaps
- Close gaps through career awareness, job center network, effective labor exchange, and accessible/affordable training.



*Result: Alaskans meet the needs of Alaska's employers for current, construction, legacy jobs and long term careers.*

# Challenges

- Ebb and flow of workers
  - Economic cycles
  - Seasonal employment
- Awareness of opportunity
  - High demand jobs in craft and professional occupations
- Job barriers
  - Drug free, driver's license, transferrable employability skills, journey level certifications
- Cost and accessibility of training
- Alaskan employers hiring Alaskans first





## Postsecondary Education

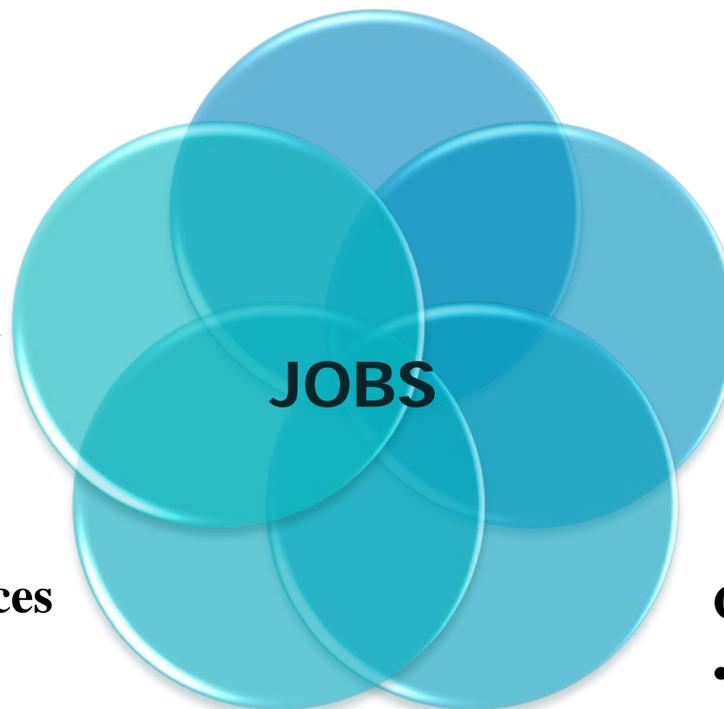
- University of Alaska
- AVTEC
- Regional Training Centers
- Private Training Providers

## Secondary Education

- Education & Early Development
- High Schools
- Adult Basic Education
- Youth First
- Construction Academies
- College Ready/Work Ready

## Funding

- *Federal*
  - Workforce Investment Act
  - Denali Training
  - Pipeline Training
- *State*
  - STEP
  - TVEP
  - GF
- *Tuition, etc.*



## Employment Services

- Job Center Network
  - Counseling
  - Job/ Training Referral

## Grantees

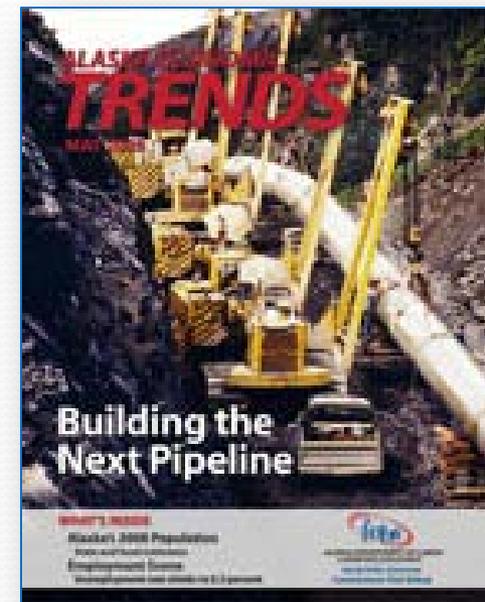
- Competitive Selection

# Alaska's Training System at a Glance

# Identifying the Gasline Skills Gap

DOLWD is working with industry partners:

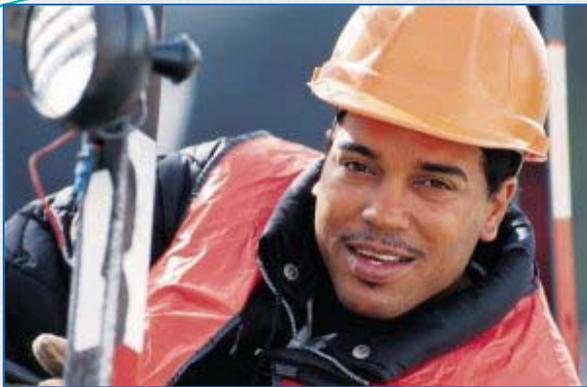
- Used occupational supply and demand data along with residency data to identify potential skills needs and gaps
- Identified 113 AGIA occupations
- Continue to research the data



# Alaska's Gasline Workforce Skills Gap



- Current gap:
  - In 2008 nonresidents accounted for more than 17% of the workers in the AGIA identified occupations
- Future gap:
  - More than 37% of Alaskans working in AGIA occupations were 45 years old or older in 2007



# Gasline Occupational Data

	Percent Nonresident Workers (2007)	Percent Workers Age 45+ (2007)
Carpenters	18.2%	35.2%
Civil Engineers	16.2%	46.1%
Electricians	23.7%	34.6%
Operating Engineers and Other Construction Equipment Operators	19.1%	49.4%
Surveyors	20.6%	46.8%
Truck Drivers, Heavy and Tractor-Trailer	13.9%	48.9%
Welders, Cutters, Solderers, and Brazers	30.5%	41.0%

# Four AGIA Strategies



Developed by Public/Private Steering Committee

1. Increase awareness of and access to careers in natural source development
2. Develop comprehensive career and technical education system
3. Increase registered apprenticeships and on-the-job training opportunities
4. Increase training for operations, technical and management workers

# 1. Increase awareness of and access to careers in natural resource development

- Job awareness program
- One stop information on jobs and training
  - Received funding to develop training web site and improve on-line job service



## 2. Develop a Comprehensive Career and Technical Education System

- Career pathways and skill standards
  - FY 11 Budget includes skills coordinator and training program administrator
- Work Keys DEED/DOLWD partnership
- K-12 career planning and counseling
  - Alaska Youth First funded at \$2.3 million
- Integrated system for youth and adults
  - Construction academies funded at \$3.5 million
  - Pipeline Training Center in Fairbanks
- Coordinate existing training programs
  - Improve coordination between K-12, RTC's Apprenticeship and the University



# 3. Increase Registered Apprenticeships and On-the-Job Training Opportunities

- Increase job training for entry level jobs
- Increase apprenticeships in construction
- Employer incentives for apprenticeships and OJT
  - Funding received to support apprenticeships and OJT—targeted federal grant and general fund



Think  Apprenticeship

## 4. Increase Training for Operations, Technical and Management Workers

- Expand programs for critical jobs
  - UAA engineering program expansion
  - Project Jump Start to develop first line Supervisors and managers through graduate apprentices attending University classes
- Recruit more Alaska high school grads
- Improve articulation between job training and management programs
- Help workers keep pace with technology and skill upgrades



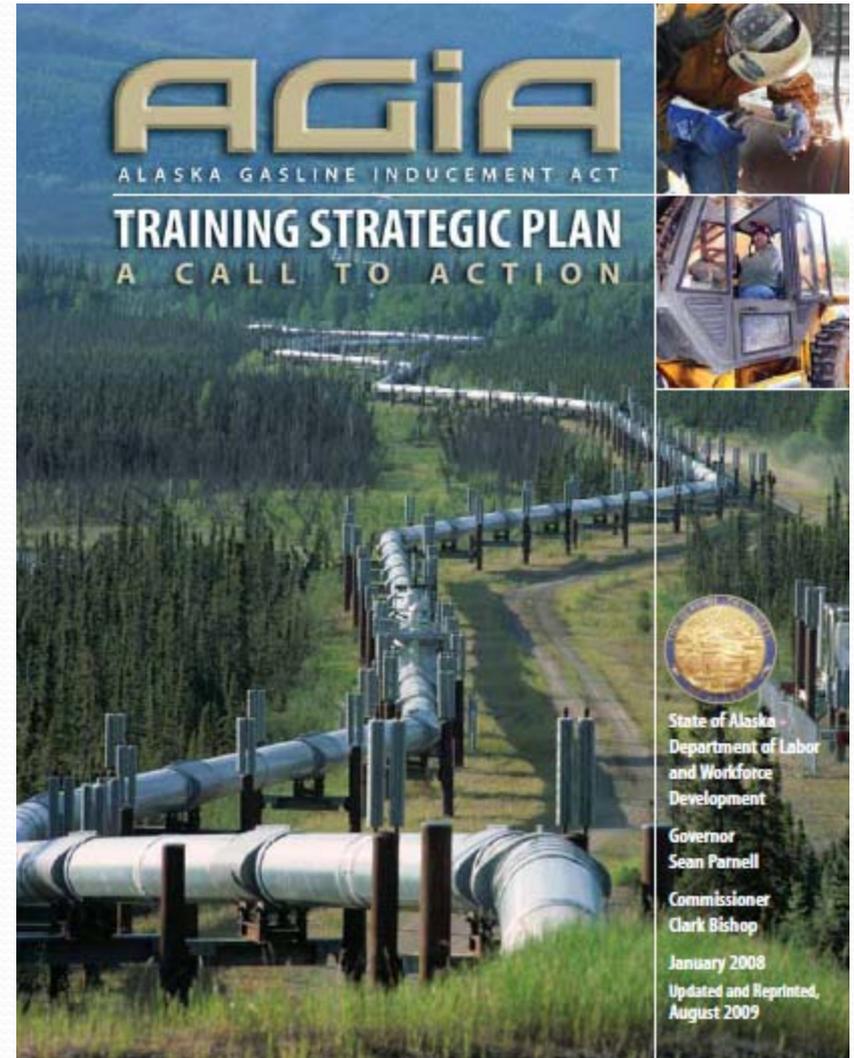
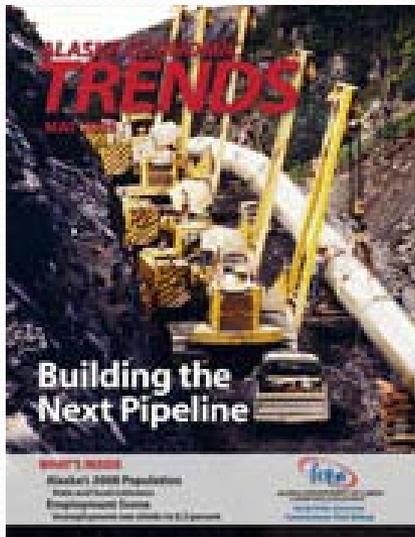
# Going forward

- TC Alaska FERC filing February 2010
- Denali Open Season
- Gasline training meeting February 25
- Manpower projections will be used to further refine training plan in the Gas Pipeline Training meeting tomorrow.



# For additional information

- [www.labor.state.ak.us](http://www.labor.state.ak.us)
- Click on:
  - AGIA - Strategic Plan
  - Trends



# Apprenticeship 101 in 2010



# Career Clusters and Pathways

Program of Study

<b>Agriculture and Natural Resources</b>	<b>Business Management IT</b>	<b>Health/ Sports Fitness</b>	<b>Human Services</b>	<b>Architecture, Construction, Engineering</b>
<a href="#"><u>Animal Science</u></a>	<a href="#"><u>Accounting</u></a>	<a href="#"><u>Allied Health</u></a>	<a href="#"><u>Culinary / Food Service</u></a>	<a href="#"><u>Architect</u></a>
<a href="#"><u>Horticulture</u></a>	<a href="#"><u>Entrepreneurship</u></a>	<a href="#"><u>Health Informatics</u></a>	<a href="#"><u>Early Childhood &amp; Services</u></a>	<a href="#"><u>Automotive</u></a>
 <a href="#"><u>Geospatial</u></a>	<a href="#"><u>Finance</u></a>	<a href="#"><u>Pre-Nursing</u></a>	<a href="#"><u>EMT</u></a>	<a href="#"><u>Cabinetry</u></a>
	<a href="#"><u>Office Specialist</u></a>	<a href="#"><u>Sports and Fitness</u></a>	<a href="#"><u>Justice &amp; Law</u></a>	<a href="#"><u>Carpenter</u></a>
	<a href="#"><u>Network Technician</u></a>			<a href="#"><u>Logistics</u></a>
	<a href="#"><u>Support Technician</u></a>			<a href="#"><u>Outdoor Power</u></a>
	<a href="#"><u>Travel Coordinator</u></a>			<a href="#"><u>Pre-Engineering</u></a>
	<a href="#"><u>Web Design / Graphic Artist</u></a>			<a href="#"><u>Welder</u></a>

# Automotive Technician

[Back to Program](#)

**Career Cluster Description:** The manufacturing career cluster prepares learners to enter an industry which includes planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

## Major Options

- Aircraft Mechanic
- Automotive Technician
- Automotive Specialty Technician
- Automotive Parts Specialist
- Automotive Body Repairer
- Agriculture Equipment Repairer
- Bus & Heavy Truck Technician
- Career & Technology Teacher
- Civil Engineers
- Customer Service Manager
- Diesel Mechanic
- Heavy Equipment Mechanic
- Heavy Equipment Operator
- Industrial Equipment Mechanic
- Locomotive Mechanic
- Locomotive Engineers and Conductors
- Marine Mechanic
- Transportation Operations Manager
- Small Engine Equipment Technician
- School Bus Driver

9 <sup>th</sup> Grade		10 <sup>th</sup> Grade		11 <sup>th</sup> Grade		12 <sup>th</sup> Grade	
Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2	Semester 1	Semester 2
English 1	English 1	English 2	English 2	English 3	English 3	English 4 <i>(Technical Writing 1)</i>	English 4 <i>(Technical Writing 2)</i>
Physical Science	Physical Science	Science 2 <i>(Biology)</i>	Science 2 <i>(Biology)</i>	Science 3 <i>(Chemistry)</i>	Science 3 <i>(Chemistry)</i>	Physics	Physics
<a href="#">Technical Applications 1</a>	<a href="#">Electronics 1</a>	World History	World History	U.S. History	U.S. History	Government	Alaska Studies
Algebra 1	Algebra 1	Geometry	Geometry	<i>Algebra 2</i>	<i>Algebra 2</i>	<a href="#">Co-op Work Experience</a>	<i>Co-op Work Experience</i>
<i>Elective</i>	<i>Elective</i>	<a href="#">Personal Finance</a>	Physical Education	<a href="#">Entrepreneurship</a>	Physical Education	<i>Co-op Work Experience</i>	<i>Co-op Work Experience</i>
<a href="#">Introduction to Career Pathways</a>	<a href="#">Customer Service</a>	Health	<a href="#">Intro to Small Engines or Intro to Auto</a>	<a href="#">Automotive Service Tech 1</a>	<a href="#">Automotive Service Tech 2</a>	<a href="#">Automotive Service Tech 3</a>	<a href="#">Automotive Service Tech 4*</a>

\* The four course series of [Brakes, Suspension & Steering](#), [Electronics](#), and [Engine Performance](#) can substitute for Auto Tech 1-4.

Work-Based Learning Opportunities	Career-Technical Student Organizations (CTSO)	Certifications
<ul style="list-style-type: none"> <li>• Apprenticeship</li> <li>• Cooperative Education</li> <li>• Job Shadowing</li> </ul>	<ul style="list-style-type: none"> <li>• Paid/Unpaid Internship</li> <li>• School-Based Enterprise</li> <li>• Service Learning</li> </ul>	<ul style="list-style-type: none"> <li>• SKILLS USA</li> </ul> <p>One year experience credit towards 2 required for ASE certification (4 areas of expertise) upon completion of Automotive Svc Tech 4.</p>

## POSTSECONDARY OPTIONS

Two-Year College or Proprietary Programs	Adult Registered Apprenticeships	Four-Year College and University Programs	Certifications	Licenses, On The Job Training, Training Certificates, etc.
<ul style="list-style-type: none"> <li>• Automotive Technician</li> <li>• Bus &amp; Heavy Truck Tech</li> <li>• Small Engine Equipment Tech</li> <li>• Diesel Mechanic</li> </ul>	<p>Department of Labor and Workforce Development, Office of pprenticeship, email <a href="mailto:apprenticeship@alaska.gov">apprenticeship@alaska.gov</a> or visit your local Alaska Job Center staff who can help you identify apprenticeable occupations and help you prepare for your future. You may also call (877) 724-2539 or visit <a href="http://www.jobs.state.ak.us/apprentice/">http://www.jobs.state.ak.us/apprentice/</a></p>	<ul style="list-style-type: none"> <li>• Career &amp; Technology Teacher</li> <li>• Civil Engineers</li> </ul>	<ul style="list-style-type: none"> <li>• Automotive Service Excellence (ASE)</li> <li>• Automotive Technician</li> <li>• ASE Truck Technician</li> <li>• ASE Bus Technician</li> </ul>	<ul style="list-style-type: none"> <li>• Entrepreneurs</li> <li>• School Bus Driver</li> <li>• Locomotive Mechanic</li> <li>• Automotive Parts Specialist</li> </ul>

## RECOMMENDED SECONDARY CAREER DEVELOPMENT SCHEDULE

*Scheduling of classes may vary according to each school's course offerings and student needs.*



# Diesel/Heavy Equipment Technologies

Alaska's Institute of Technology

Welcome to the Diesel/Heavy Equipment Technologies program. Normally, half the investment of a mining, construction, or logging business is in equipment. Good preventive maintenance is a priority and contributes to the success of the business.



The hands-on approach to AVTEC's Diesel/Heavy Equipment Technologies program helps students learn how to service, maintain, and repair equipment ranging from dump trucks to bulldozers. As most equipment is powered by diesel engines, students will disassemble, measure, and reassemble engines to factory specifications. Because of the complexity of this equipment, students should have good mechanical aptitude, and strong reading and mathematics skills, and should also possess a desire to succeed.

Approximately 60% of the course is shop work and 40% is classroom instruction. Instruction is individualized so that students may progress at their own rate. Good reading and math skills are essential.

The nature of the training requires that students work outdoors. Warm clothing, rain gear, and proper boots are required.

## Earn University of Alaska Credits

Diesel/Heavy Equipment Technology credits towards the requirements

## Program Content

To achieve a Diesel/Heavy Equipment Technology certificate, the following requirements. For a



- About TVC
- Programs
- Admissions/Financial Aid
- Student Services
- Information Request

## Diesel/Heavy Equipment, Cert

- Admissions
- Advisors
- Certificate Requirements
- Getting Started
- Required Tool List

TVC/Programs/Diesel/Heavy Equipment

This certificate program emphasizes hands-on training and in-class experience as students perform preventative maintenance inspections, determine causes of equipment problems and make necessary repairs and adjustments from tune-ups to complete engine and equipment overhauls. Students work on large trucks, electrical and air systems, diesel engines, engine electronics, transmissions, differentials, crawler tractor undercarriages, steering and final drives.

The program is located in the newly-renovated Hutchison Institute of Technology on the corner of Geist and University Avenue. The center is equipped with a full-modernized shop boasting the latest tools and equipment, to ensure the education and training you receive is current with industry standards. Class size is limited, so students receive individual help and attention. The instructors are all experienced professionals who not only have excellent technical skills and knowledge, but they know how to communicate that knowledge to their students.

### Career Opportunities

Diesel mechanics may be hired as mechanics on engines, automatic transmissions, drive trains, electrical systems, suspension and steering, hydraulics and air systems. Diesel mechanics diagnose, repair, weld, and fine-tune the working parts of buses, trucks, construction machinery, and generators. Students completing this program are qualified to work for independent diesel and heavy equipment repair businesses and contractors. Entry level wages range from \$15-\$25/hr.

### Contact Information:

**Brian Rencher, Program Coordinator**  
UAF Tanana Valley Campus  
PO Box 758080  
Fairbanks, AK 99775

## Program Info

- Start Info & Prerequisites
- Program Content
- Occupational Levels



## Quick Links

# Heavy Duty Transportation and Equipment (Cert, AAS)



## EXPLORE YOUR OPPORTUNITIES

The Heavy Duty engine maintenance becomes increasingly complex as more electronic components industry partners and certified technical training, the Association of Applied Science and certificate will

## Educational Pathway Options

Recommended Preparation	Certificate	Associate of Applied Science (AAS)	Bachelor of (BS)
<b>School</b> • Reading and Writing Skills • Computer Competency • Algebra	<b>Years</b> Heavy Duty Transportation and Equipment	<b>Years</b> Heavy Duty Transportation and Equipment	<b>Years</b> Technology (with or without business)



tv.c.uaf.edu
  www



# Diesel

University of Alaska Southeast



[www.uas.alaska.edu/diesel](http://www.uas.alaska.edu/diesel)

### Occupational Endorsements

- USCG Marine Oiler
- Heavy Duty Mechanics
- Marine Mechanics

### Or a Degree

Associates of Applied Science (AAS) in:

Power Technology:

With a DIESEL Emphasis

OR:

MARINE OILER Emphasis

## School of Career Education



# ***Bus and Truck Mechanic Diesel Engine Specialist***



## ***Registered Apprenticeship***

The Alaska Department of Labor and Workforce Development Office of Apprenticeship (OA) present a registered apprenticeship for **Bus and Truck Mechanics and Diesel Engine Specialists**. Employers please review this information and consider apprenticeship as your workforce development strategy.

Registered Apprenticeship is a highly flexible training and workforce development model that combines On-the-Job Learning (OJL) and Related Technical Instruction (RTI). This 8,000-hour time-based program, allows you to develop a competent and loyal workforce, while offering your employees an additional benefit, an employer based training program. Upon completion of the program apprentices receive 38 credit hours in the University of Alaska system.

The OA has collaborated with several training providers for the RTI to include the University of Alaska, Alaska Vocational Technical Educational Center (AVTEC) and the Multistate Academic Vocational Curriculum Consortium (MAVCC). With this, an employer has several options for RTI. Technical training may be delivered in a classroom (through a provider) or through a self-studied curriculum in your workplace. Please see the reverse side of this flyer. Employers with in house or manufacturer training programs; established curriculum may qualify as the required RTI.

**O-Net Summary Report for: 49-3031.00 - Bus and Truck Mechanics and Diesel Engine Specialists**

**Sample of reported job titles:** Mechanic, Diesel Mechanic, Bus Mechanic, General Repair Mechanic, Diesel Technician, Trailer Mechanic, Transit Mechanic, Truck Mechanic, Fleet Mechanic, Service Technician

Diagnose, adjust, repair, or overhaul trucks, buses, and all types of diesel engines, includes mechanics working primarily with automobiles and light trucks.

### **Tasks**

- Use hand tools and power tools, precision measuring instruments, welding equipment, and jacks and hoists
- Inspect, repair, and maintain bus, truck and automobiles and related accessories
- Inspect and repair engines, power trains, electrical, brake, steering mechanisms, wheel bearings, hydraulic, air and other systems to ensure their proper operation and compliance with the CFR's
- Use test instruments to diagnose malfunctions and trouble codes
- Perform routine maintenance, record and report service records
- Test drive trucks and buses to diagnose malfunctions or to ensure proper operation

# BUS AND TRUCK MECHANIC, DIESEL ENGINE SPECIALIST

## SCHEDULE OF WORK EXPERIENCE

**O\*NET-SOC CODE: 49-3031.00 RAPIDS CODE: 0124**

**Term: Time-based (8,000 hours)** it is intended that after 8,000 of OJL including a minimum of 576 hours of related instruction for each year of apprenticeship, the apprentice will demonstrate competence in the skills outlined below.

During the term of apprenticeship, the Apprentice shall receive such instruction and experience, in all branches of the occupation, as is necessary to develop a practical and versatile worker. Major processes in which Apprentices will be trained (although not necessarily in the order listed) and approximate hours (not necessarily continuous) to be spent in each are as follows:

	<b>WORK PROCESSES</b>	<b>APPROXIMATE HOURS</b>
<b>A</b>	<b>Shop Practice Safety</b>	<b>500</b>
<b>B</b>	<b>Gasoline &amp; Diesel Engines: Diagnose and Repair</b>	<b>1500</b>
<b>C</b>	<b>Drive Train; Diagnosis and Repair</b>	<b>750</b>
<b>D</b>	<b>Brakes; Diagnosis and Repair</b>	<b>750</b>
<b>E</b>	<b>Steering and Suspension system</b>	<b>750</b>
<b>F</b>	<b>Electrical Systems and Electronic</b>	<b>750</b>
<b>G</b>	<b>Heating, Ventilation, and Air Conditioning (HVAC</b>	<b>750</b>
<b>H</b>	<b>Preventive Maintenance Inspection (PMI</b>	<b>1000</b>
<b>I</b>	<b>Hydraulic Systems theory, design, application and diagnosis</b>	<b>750</b>
<b>J</b>	<b>Cutting and Welding</b>	<b>250</b>
<b>K</b>	<b>Knowledge of the CFR's to include; operation, inspection and 49CFR</b>	<b>250</b>
	<b>TOTAL HOURS</b>	<b>8,000</b>

Curriculum: Diesel Technology Series  
Multistate Academic and Vocational Curriculum Consortium (MAVCC)  
1500 West Seventh Avenue Stillwater, OK 74074 [www.mavcc.com](http://www.mavcc.com)

The related instruction outlines the courses that supplement the on-the-job learning process. It is through the combination of both the on-the-job learning and the related technical instruction that the apprentice can reach the skilled level of the occupation. Under a registered apprenticeship, 144 hours of related instruction each year of the apprenticeship is recommended. The following is the suggested course curriculum during the term of apprenticeship.

- MAVCC Diesel Technology:

- Introduction
- Safety Skills
- Workplace Skills
- Brakes
- Drive Trains
- Electrical and Electronic Systems
- Engines
- Preventative Maintenance
- Steering and Suspension
- Hydraulics
- Equipment Specific
- Training and certifications for specific equipment such as Caterpillar, Cummins, and Detroit

HOT NEWS < > What does it mean to be an apprentice? » Apprenticeship is one of the oldest methods of c...



**Think**  
**Apprenticeship**

**Earn While You Learn...**

*"Today's Apprentices, Tomorrow's Skilled Workforce"*

**EMPLOYERS**

Did you know your business can benefit financially as well as helping your industry and local workforce grow?

[Learn more](#) ➔

**APPRENTICESHIP**

Are you in High School, just graduated, a veteran or someone passionate about learning a skilled trade for a new career?

[Learn more](#) ➔

**OCCUPATIONS**

Did you know that apprenticeship can also be in the Medical, Tech, Culinary and Legal field? Yes, over a 1000 occupations.

[Learn more](#) ➔

Filipino



### Clark Bishop

Department of Labor  
Commissioner

*Bilang isang mabigat na operator ng mga kagamitan para sa higit sa 30 taon, alam ko na ang halaga ng isang mahusay na edukasyon at matatag na pagsasanay. Natagpuan ko ang aking sarili balik para sa karagdagang pagsasanay bilang mga advanced na ko sa aking karera. Sa kalaunan, ako ay naging isang tagapagsanay. Ngayon bilang Komisyonado ng Paggawa at Workforce Development, ang aking trabaho ay upang matulungan*

## Executive Chef Talks Tungkol Bakit mas maraming mga tagapag-employo Dapat

Apprenticeship



[Tingnan ang karagdagang ...](#)

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**Spotlight sa Apprenticeship**

# Questions?



Apprenticeship Conference April 28, 2010