

## CTE Course Description and Standards Crosswalk

### Course Information

Course Name	Automotive Service Tech 2
Course Number	86521/86522
Number of High School Credits	.5
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Automotive
Date of district Course Revision	April 2013

### Career & Technical Student Organization (CTSO)

CTSO embedded in this sequence	SkillsUSA
--------------------------------	-----------

### Occupational Standards

Source of Occupational Standards	ASE/NATEF
Names/Numbers of Occupational Standards	

### Registration Information

Course Description (brief paragraph – as shown in your student handbook or course list)	Automotive Service Technician 2 covers further training of the student in troubleshooting, maintaining, and repair of automotive systems. This course is designed to teach the student additional skills necessary for future employment in the automotive industry. Instruction includes career exploration, participation in SkillsUSA, and industry visits. A student successful in this course will be able to use technical skills learned in this course to help qualify for nationally recognized ASE (Automotive Service Excellence) certification.
Instructional Topic Headings (please separate each heading by a semi-colon)	Personal and Equipment Safety in The Lab; Identification, Use and Care of Tools and Equipment; Investigate Career Opportunities in The Automotive Industry; Engine Repair; Automatic Transmission and Transaxle; Manual Drivetrain and Axles; Brake System Diagnosis and Repair; Suspension/ Steering System Diagnosis and Repair; Electrical System Diagnosis and Repair; Heating and Air Conditioning; Engine Performance Diagnosis and Repair; Encourage Career and Technical Student Organization (CTSO) Involvement

### Summative Assessments and Standards

Technical Skills Assessment (TSA)	Yes
Course addresses:	
New Alaska ELA and Math Standards	Y
Alaska Cultural Standards	Y
All Aspects of Industry (AAI)	Y
Core Technical Standards	Y
Employability Standards	Y

### Employability Standards

Source of Employability Standards	SkillsUSA/NATEF
-----------------------------------	-----------------

### Tech Prep

Current Tech Prep Articulation Agreement? (Y/N)	Y
---	---

**DISTRICT NAME: Mat-Su Borough School District**

Date of Current Agreement	May 2013
Postsecondary Institution Name	University of Alaska Anchorage - UAA
Postsecondary Course Name	Suspension and Alignment, Brake Systems, Auto Electrical 1
Postsecondary Course Number	ADT 102, ADT 150, ADT 162 (With Auto Tech 1-3), ADT 121, ADT 122, (With Auto Tech 1-4)
# of Postsecondary Credits	17 in total (0 for course alone)

### Additional CTE Course Information

Author	
Course developed by	John Egan, Ed Clawson
Course adapted from	
Date of previous course revision	June 2007
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	

Standards Alignment
---------------------

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/Career Readiness Standards	All Aspects of Industry/Systems	Assessment
Demonstrate safe laboratory techniques and handling of hazardous materials.	NATEF All Skills USA AST 4.1, 4.2, 4.3, 4.7	TD 5 TD HSE 1 & 2			A1, A4, B1, B2, B4	A1, A2, A5, A6, A7	Health / Safety Technical Skills	AK EED Safety Manual Skills USA 4.0
Select and operate appropriate hand tools power tools, and related equipment.	NATEF Safety Skills USA AST 4.1, 4.2, 4.3, 4.7	TD 5 TD HSE 1 & 2			A6 B2, B4	A2, A6, A7, B4	Technical Skills	AK EED Safety Manual Skills USA 4.0
Exhibit responsibilities of employment standards including exhibiting dependability and meeting organizationally defined expectations.	Skills USA AST 5.0	TD 6 CRP 1, 4, 8, 9, 10, 12	SL.CC.9-12. A-D		A1, B1, B2, B3 C2, C4, E4	A1, A2, A5	Labor Work Habits	SkillsUSA 5.0/NATEF

**DISTRICT NAME: Mat-Su Borough School District**

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/Career Readiness Standards	All Aspects of Industry/Systems	Assessment
Check problems in electrical systems using a test light, voltmeter, oscilloscope and wiring schematic.	ASE NATEF VI.A		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.1. N-Q.3. S-IC.6.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Check electrical systems for shorts, opens, and grounds.	ASE NATEF VI.A		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.1. N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Charge and install a battery.	ASE NATEF VI.B		RST.CS.9-10.4 RST.CS.11-12.4		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Diagnose starting systems and determine necessary action.	ASE NATEF VI.C		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3. S-ID.9. S-IC.6.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Jump start a vehicle.	ASE NATEF VI.C		RST.CS.9-10.4 RST.CS.11-12.4		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics

**DISTRICT NAME: Mat-Su Borough School District**

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Remove, clean, and inspect alternator and determine necessary action	ASE NATEF VI.D		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Repair or replace charging system components.	ASE NATEF VI.D		RST.CS.9-10.4 RST.CS.11-12.4		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Remove, clean, and inspect starters, and determine necessary action..	ASE NATEF VI.C		RST.CS.9-10.4 RST.CS.11-12.4	S-ID.9. N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Repair or replace starting system components.	ASE NATEF VI.C		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Diagnose and repair lighting systems.	ASE NATEF VI.E		RST.CS.9-10.4 RST.CS.11-12.4	S-ID.9.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics

**DISTRICT NAME: Mat-Su Borough School District**

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/Career Readiness Standards	All Aspects of Industry/Systems	Assessment
Repair or replace lights, sockets, wires and switches.	ASE NATEF VI.E		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Conduct engine performance tests using engine analyzers and determine necessary action.	ASE NATEF VIII.A		W.PD.9-10.6 W.PD.11-12.6	S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Perform on-board computer system diagnosis.	ASE NATEF VIII.B		W.PD.9-10.6 W.PD.11-12.6	S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, repair, and replace primary ignition components.	ASE NATEF VIII.C		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, repair, and replace secondary ignition components.	ASE NATEF VIII.C		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Adjust ignition system to manufacturer’s specifications.	ASE NATEF VIII.C		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.

**DISTRICT NAME: Mat-Su Borough School District**

<b>Student Performance Standards (Learner Outcomes or Knowledge &amp; Skill Statements)</b>	<b>Specific Occupational Skills Standard</b>	<b>Common Technical Core Standards</b>	<b>New Alaska ENG/LA Standards</b>	<b>New Alaska Math Standards</b>	<b>Alaska Cultural Standards</b>	<b>Employability/Career Readiness Standards</b>	<b>All Aspects of Industry/Systems</b>	<b>Assessment</b>
Inspect, clean, and replace spark timing controllers.	ASE NATEF VIII.C		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Test and diagnose engine compression and determine necessary action.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Diagnose fuel system problems and determine necessary action.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, repair or replace faulty fuel supply components.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Disassemble, clean, and inspect fuel injection system components.	ASE NATEF VIII.D		W.PD.9-10.6 W.PD.11-12.6	N-Q.3 S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Repair or replace fuel injection system components.	ASE NATEF VIII.D				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.

**DISTRICT NAME: Mat-Su Borough School District**

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Diagnose emission control systems and determine necessary action.	ASE NATEF VIII.E		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Diagnose and repair exhaust system problems.	ASE NATEF VIII.E		WHST.PD. 9-10.8 WHST.PD. 11-12.8	S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, clean, and replace positive crankcase ventilation system components.	ASE NATEF VIII.E		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, clean, and replace air management system components.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect, clean, and replace inlet air temperature control system components.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.
Inspect and test service engine cooling system components and determine necessary action.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 N-Q.1 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.



**DISTRICT NAME: Mat-Su Borough School District**

Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability/ Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Drain, flush and pressure test the cooling system.	ASE NATEF VIII.D		WHST.PD. 9-10.8 WHST.PD. 11-12.8	N-Q.3 N-Q.1 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 2.0 ASE A-8 Engine Perf.

**Instructional Resources**

**List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)**

**Recommended Text:** Modern Automotive Technology, By James E. Duffy, The Goodheart-Willcox Company, Inc.

Automotive Technology Curriculum Modules, Instructional Materials Laboratory, University of Missouri-Columbia

**Resources:** AK EED Safety Manual: <http://www.eed.state.ak.us/tls/CTE/docs/resources/safetymanual.pdf>  
 SkillsUSA Automotive Service Technology (AST): <http://www.skillsusa.org/contests.html>  
 AKCIS - Alaska Career Information System Information: [www.akcis.org](http://www.akcis.org)  
 ASE - National Institute for Automotive Service Excellence: <http://www.asecert.org>

NATEF 2013 MAST