

CTE Course Description and Standards Crosswalk

Course Information	
Course Name	Automotive Service Tech 1
Course Number	86511 or 86512
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/NATEF
Occupational Standards	
Source of Occupational Standards	ASE/NATEF AST 2013
Names/Numbers of Occupational Standards	Automobile/Light Truck Certification Tests (A series)
Registration Information	
Course Description (brief paragraph – as shown in your student handbook or course list)	Automotive Service Technician 1 covers troubleshooting, maintenance, and light duty repair of the automotive systems. This course is designed to teach the student skills necessary for future employment in the automotive field. 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)	Automobile/Light Truck Certification Tests (A series)
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	Alaska Content and Performance Standards 4th Edition; Section 1: Employability Page 33
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

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	
Als the course brokered through another institution or agency? (Y/N)	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 SkillsUSA AST 4.0
Exhibit responsibilities of employment standards including exhibiting dependability and meeting organizationally defined expectations in shop operation.	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 AST 5.0/NATEF
Identify and investigate career opportunities and duties of an automotive technician.	Skills USA AST 5.0	TD 6	WHST.RB. 9-10.8		B2, B3, C4	A2, A3, A5, B2, B3, B4, B5	ALL	SkillsUSA AST 5.0 AKCIS

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 hydraulic brake systems and determine necessary action	ASE NATEF V.B SkillsUSA AST 9.0		WHST.PD. 11-12.6	G-GMD.3.	B2, B4	A2, A5	Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Inspect master cylinder and hydraulic lines of the system.	ASE NATEF V.B SkillsUSA AST 9.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Inspect, test and replace switches, valves, and control devices.	ASE NATEF V.B SkillsUSA AST 9.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Bleed and flush brake cylinders, master cylinder and hydraulic lines.	ASE NATEF V.B SkillsUSA AST 9.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Diagnose drum brake systems and determine necessary action.	ASE NATEF V.C SkillsUSA AST 9.0		WHST.PD. 11-12.6	S-IC.4. S-IC.6.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Remove, clean, and inspect drum brake assemblies.	ASE NATEF V.C SkillsUSA AST 9.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Repair, replace, and adjust drum brake assemblies.	ASE				B2, B4	A2, A5	Health	SkillsUSA

DISTRICT NAME: Mat-Su Borough School District

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	NATEF V.C SkillsUSA AST 9.0						/Safety Technology Technical Skills	AST 9.0 ASE A-5 Brakes
Diagnose disc brake systems and determine necessary action.	ASE NATEF V.D SkillsUSA AST 9.0			S-IC.4. S-IC.6.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Remove, clean, and inspect disc brake components.	ASE NATEF V.D SkillsUSA AST 9.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 9.0 ASE A-5 Brakes
Diagnose steering systems and determine necessary action.	ASE NATEF IV.B SkillsUSA AST 7.0		WHST.RB. 9-10.8		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Clean and inspect power and manual steering gear boxes.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Clean, remove, and inspect steering linkage components.	ASE NATEF IV.B SkillsUSA AST 7.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Diagnose front suspension systems and determine necessary action.	ASE NATEF		RST.CS.9- 10.4	N-Q.3.	B2, B4	A2, A5	Health /Safety	SkillsUSA AST 7.0

DISTRICT NAME: Mat-Su Borough School District

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	IV.B SkillsUSA AST 7.0						Technology Technical Skills	ASE A-4 Susp & Steering
Inspect and replace front and rear shock absorbers and stabilizer assemblies.	ASE NATEF IV.B SkillsUSA AST 7.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Repair, replace, and adjust wheel bearings.	ASE NATEF IV.D SkillsUSA AST 7.0			N-Q.3.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Diagnose steering and tire wear problems, and determine necessary action.	ASE NATEF IV.D SkillsUSA AST 7.0		RST.CS.9-10.4		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Dismount, inspect, repair and mount tire and wheel assemblies.	ASE NATEF IV.D SkillsUSA AST 7.0				B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Rotate and balance wheel assemblies.	ASE NATEF IV.D SkillsUSA AST 7.0			N-VM.1.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 7.0 ASE A-4 Susp & Steering
Solve electrical problems using Ohm’s Law.	ASE NATEF VI.A		RST.CS.9-10.4	A-CED.4.	B2, B4	A2, A5	Health /Safety Technology	SkillsUSA AST 3.0 & 6.0

DISTRICT NAME: Mat-Su Borough School District

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	SkillsUSA AST 3.0 & 6.0						Technical Skills	ASE A-6 Electronics
Identify common electrical circuit components.	ASE NATEF VI.A SkillsUSA AST 3.0 & 6.0		RST.CS.9-10.4		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 SkillsUSA AST 3.0 & 6.0		RST.CS.9-10.4		B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Measure resistance in electrical circuits using an ohmmeter.	ASE NATEF VI.A SkillsUSA AST 3.0 & 6.0			N-Q.3. N-Q.1.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Measure voltage with a voltmeter or oscilloscope.	ASE NATEF VI.A SkillsUSA AST 3.0 & 6.0		RST.CS.9-10.4 RST.CS.11-12.4	N-Q.3. N-Q.1.	B2, B4	A2, A5	Health /Safety Technology Technical Skills	SkillsUSA AST 3.0 & 6.0 ASE A-6 Electronics
Measure current with an ammeter.	ASE NATEF VI.A SkillsUSA		RST.CS.9-10.4 RST.CS.11-	N-Q.3. N-Q.1.	B2, B4	A2, A5	Health /Safety Technology Technical	SkillsUSA AST 3.0 & 6.0

DISTRICT NAME: Mat-Su Borough School District

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	AST 3.0 & 6.0		12.4				Skills	ASE A-6 Electronics
Clean and inspect battery clamps, cables and connectors and perform battery condition tests.	ASE NATEF VI.B SkillsUSA AST 3.0 & 6.0		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
Charge and install a battery.	ASE NATEF VI.B SkillsUSA AST 3.0 & 6.0		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
Jump-start a vehicle.	ASE NATEF VI.C SkillsUSA AST 3.0 & 6.0		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

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>

DISTRICT NAME: Mat-Su Borough School District

AKCIS - Alaska Career Information System Information:

www.akcis.org

ASE - National Institute for Automotive Service Excellence:

<http://www.asecert.org>

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