

CTE Course Description and Standards Crosswalk

Course Information

Course Name	Automotive Service Tech 3
Course Number	86531/86532
Number of High School Credits	1
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
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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 3 covers advanced training in the diagnosis, repair and maintenance of automotive systems. This course is designed to teach the student advanced 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. Successful completion of this course qualifies the student to receive Technical Preparation credit from the University of Alaska Anchorage (UAA).
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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
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Summative Assessments and Standards

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

Employability Standards

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Source of Employability Standards	SkillsUSA/NATEF
Tech Prep	
Current Tech Prep Articulation Agreement? (Y/N)	Y
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
Identify and Investigate career opportunities and duties of an automotive technician.	Skills USA AST 5.0	CRP 10	W.RB.9-10.7 W.RB.11-12.7		B2, B3, C4	A2, A3, A5, B2, B3, B4, B5	All	AKCIS/ Skills USA AST 5.0

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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.RB.11-12.8	N-Q.3 S-ID.9	B2, B4	A2, A5	Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Inspect and repair or replace master cylinders, wheel cylinders, and hydraulic lines of the system.	ASE NATEF V.B SkillsUSA AST 9.0			N-Q.1 N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Inspect, test and replace switches, valves, and control devices.	ASE NATEF V.B SkillsUSA AST 9.0			N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Repair, replace, and adjust disc brake components.	ASE NATEF V.C SkillsUSA AST 9.0			N-Q.3 S-IC.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Diagnose power assist brake systems and determine necessary action.	ASE NATEF V.E SkillsUSA AST 9.0		WHST.PD.11-12.6	S-ID.9 S-IC.6	B2, B4	A2, A5	Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Remove, clean, and inspect power brake components.	ASE NATEF V.E SkillsUSA AST 9.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Repair, replace, and adjust power brake components.	ASE NATEF V.E SkillsUSA AST 9.0			S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0

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Remove, clean, and inspect hydro-boost components.	ASE NATEF V.E SkillsUSA AST 9.0			S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Repair, replace, and adjust hydro-boost components.	ASE NATEF V.E SkillsUSA AST 9.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Check operation of anti-lock braking systems.	ASE NATEF V.G SkillsUSA AST 9.0			S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Adjust or repair anti-lock brake components to manufacturer's specifications.	ASE NATEF V.G SkillsUSA AST 9.0			N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-5 Brakes SkillsUSA AST 9.0
Diagnose steering and suspension problems and determine necessary action.	ASE NATEF IV.A SkillsUSA AST 7.0		WHST.PD.11-12.6	N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Clean, remove, and inspect and replace steering linkage components.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Clean and inspect power and manual steering gear boxes.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0

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Reassemble, adjust, and install power and manual steering gear boxes.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Clean and inspect power and manual rack-and-pinion steering rack assemblies.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Reassemble, install and adjust power and manual rack-and-pinion steering rack.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect, repair, and replace power steering pumps.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect and repair steering columns.	ASE NATEF IV.B SkillsUSA AST 7.0			N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Diagnose conventional and electronic front suspension systems and determine necessary action.	ASE NATEF IV.C SkillsUSA AST 7.0		RST.CS.11-12.4 WHST.PD.11- 12.6	N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect and repair control arm and spring assemblies on conventional systems.	ASE NATEF IV.C SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0

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Diagnose MacPherson strut assemblies and determine necessary action.	ASE NATEF IV.C SkillsUSA AST 7.0		WHST.PD.11-12.6 WHST.RB.11-12.8 RST.CS.11-12.4	N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect, assemble, and replace front MacPherson strut assemblies.	ASE NATEF IV.C SkillsUSA AST 7.0			N-Q.3 S-ID.9 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Repair, replace, and adjust wheel spindles and bearings.	ASE NATEF IV.C SkillsUSA AST 7.0			N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Diagnose conventional and electronic rear suspension systems and determine necessary action.	ASE NATEF IV.D SkillsUSA AST 7.0		WHST.PD.11-12.6 RST.KI.11-12.3	N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect and replace rear shock absorbers and spring assemblies.	ASE NATEF IV.D SkillsUSA AST 7.0		RST.KI.11-12.3	N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Inspect, assemble, and replace rear MacPherson strut assemblies.	ASE NATEF IV.D SkillsUSA AST 7.0		RST.KI.11-12.3	N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0

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Inspect and repair suspension linkages and bushings.	ASE NATEF IV.D SkillsUSA AST 7.0		RST.KI.11-12.3	N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Diagnose steering and tire wear problems, and determine necessary action.	ASE NATEF IV.E SkillsUSA AST 7.0		WHST.PD.11-12.6	N-Q.1 N-Q.3 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Set correct alignment angles on front and rear wheels.	ASE NATEF IV.E SkillsUSA AST 7.0		RST.KI.11-12.3	G-GMD.1 G-MG.1 N-Q.1 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Rotate and balance wheel assemblies.	ASE NATEF IV.F SkillsUSA AST 7.0			G-MG.1 N-Q.1 S-IC.6	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-4 Susp & Steering SkillsUSA AST 7.0
Diagnose starting systems and determine necessary action.	ASE NATEF VI.C SkillsUSA AST 3.0 & 6.0		RST.KI.11-12.3	S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0
Remove, clean, and inspect alternator and determine necessary action.	ASE NATEF VI.D SkillsUSA AST 3.0 & 6.0		RST.KI.11-12.3	S-IC.6 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0

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Repair or replace internal alternator or generator components.	ASE NATEF VI.D SkillsUSA AST 3.0 & 6.0		RST.KI.11-12.3	N-Q.1 N-Q.3	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0
Repair or replace charging system components.	ASE NATEF VI.D SkillsUSA AST 3.0 & 6.0		RST.KI.11-12.3	N-Q.3	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0
Diagnose and repair lighting systems.	ASE NATEF VI.E SkillsUSA AST 3.0 & 6.0		WHST.PD.11-12.6	N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0
Repair or replace lights, sockets, wires and switches.	ASE NATEF VI.D SkillsUSA AST 3.0 & 6.0			N-Q.3 S-ID.9	B2, B4	A2, A5	Health /Safety Technology Technical Skills	ASE A-6 Electronics SkillsUSA AST 3.0 & 6.0

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,

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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

ASE - National Institute for Automotive Service Excellence:

<http://www.asecert.org>

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