


HIGH SCHOOL: Helena Adult Basic Education		 BIG SKY PATHWAY PROPOSAL
COLLEGE: Helena College University of Montana		
COLLEGE DEGREE PROGRAM: Automotive Technology AAS		
Cluster Overview: Jobs in the Transportation, Distribution, and Logistics career cluster involve the planning, management, and movement of people, materials, and goods by road, air, rail, and water, as well as related professional and technical support services such as transportation infrastructure planning and management; logistics services; and mobile equipment and facility maintenance.	Pathway Options: <ul style="list-style-type: none"> • Transportation Operations • Diesel and Automotive Repair • Warehousing & Distribution Center Operations • Facility and Mobile Equipment Maintenance • Transportation Systems/Infrastructure Planning, Management and Regulation • Health, Safety and Environmental Management 	Occupation Examples: Dispatchers, Aircraft Mechanic, Airline Pilots, Air Traffic Controllers, Bus Drivers, Automotive Technicians, Diesel Mechanics, Service or Parts Managers, Truck Drivers, Locomotive Engineers, Cargo and Freight Agents, Mass Transit Transportation Managers, Shipping and Receiving Clerks <i>For a complete listing, go to:</i> http://online.onetcenter.org/find/career?c=16&q=Go

CRITICAL SKILLS PRACTICED IN ADULT LEARNING CENTER

	Reading	Concentrate on Technical Reading Skills: Read and follow written repair procedures; Comprehend technical data from textbooks and repair manuals; Interpret customer concerns on repair orders.	Notes
	Applications	<i>Using the General Automotive Repair Textbook, select a section and re-write it in your own words. Read textbook following diagnostic and repair procedures.</i>	
	Writing	Concentrate on Technical Writing Skills: Document repairs performed; Provide written description of required tasks for an electronic portfolio.	Notes
	Applications	<i>Set up and Save an electronic portfolio; Provide written conclusions relative to assigned lab worksheets.</i>	
	Mathematics	Calculate basic math operations using numbers, fractions and decimals; Apply ratio concepts to gear ratios and percentages; Calculate formulas and solve for any of the variables in the formulas; Use the metric system and calculate conversions in units of measure; Recognize electrical units and apply Ohm's Law in electrical mathematics. Manipulate algebraic formulas for electrical circuit analysis.	
	Application	<p><i>When two resistor R_1 and R_2 are put in series with a battery giving V volts, the current through the resistors is $i = \frac{V}{R_1 + R_2}$. Solve for R_1.</i></p> <p><i>An automotive technician found the following statement in a manual: The pitch diameter of a cam gear is twice the diameter of the crank gear. Translate this sentence into an algebraic equation.</i></p> <p><i>Use manual calipers to determine measurement. Perform electrical circuit analysis using Ohms Law.</i></p>	
	Employability Skills	Communicate with customers. Describe complex system operation at a lay person level.	Notes
	Application	<i>Describe failed components and proper repair to a customer.</i>	

SUGGESTED TRANSITIONAL COURSES AND EXPERIENCES

College Courses: M11T Technical Math WRIT121 Intro to Tech Writing, Speech COMX 111, HR110T Career Development

Online courses: M11T Technical Math WRIT121 Intro to Tech Writing

Other: Student shadowing; job shadowing, working in auto shop

POSTSECONDARY PROGRAM OF STUDY (72 credits)

	Math	English	Major	Other
Semester 1	M111T Technical Math 3cr		AUTO104 Automotive Mechanics 2cr AST108 Auto Manual Drive Trains 6 AST130 Intro to Auto Electronics 7	
Semester 2			AST160 Auto Engine Repair 6 AST172 Auto Heating/Air Conditioning 5 Electric/Electronics Systems II 4	

Semester 3		WRIT121 Intro to Tech Writing 3cr	AST118 Brake Chassis 6 AST262 Engine Performance I 8cr	
Semester 4			AST264 Engine Performance II 5cr AST 270 Auto Transmissions/Transaxles 7 AST280 Applied Lab Experience Light Repair 4	HR110T Career Development and Human Relations

MONTANA POSTSECONDARY OPPORTUNITIES

*Montana University System Degree and Program Inventory: <http://www.homepage.montana.edu/~mus/drqinv/>
Your Guide to Montana's Certificate and Associate Degree Programs: <http://mus.edu/twoyear/YourGuide.html>*

MSU Two Year Colleges and Programs: City College MSUB—Billings (CC); Great Falls College MSU—Great Falls (GFC); Helena College UM—Helena (HC) Highlands College MT Tech—Butte(HC-Tech); Missoula College UM—Missoula (MC); Gallatin College MSU—Bozeman(GC)	Community Colleges: Dawson Community College (DCC) Flathead Valley Community College (FVCC) Miles Community College (MCC)	Tribal Colleges: Aaniiih Nakoda College (ANC);Blackfeet Community College(BCC); Chief Dull Knife College (CDKC);Fort Peck Community College (FPCC);Little Big Horn College (LBHC);Stone Child College (SCC);Salish Kootenai College (SKC)	Four Year Colleges/Universities: MSU—Bozeman; MSUB—Billings; MSUN—Havre; MT Tech—Butte; UM—Missoula; UMW—Dillon
MILITARY	<ul style="list-style-type: none"> Requires diploma or GED 17 with parental consent; 18 without 	Air Force, Air Guard, Army, Coast Guard, Marines, and Navy For more information: http://todaysmilitary.com	
PROFESSIONAL CERTIFICATE	<ul style="list-style-type: none"> Requires diploma or GED Less than 30 credits; little/no general ed credits Complete in one year or less 	Automotive Technology — FVCC Truck Driving — MCC	
APPRENTICESHIP	<ul style="list-style-type: none"> Requires diploma or GED Must be at least 18 Minimum 2,000 hours of supervised experience 	Aircraft Mechanics, Avionics Technicians, Bus and Truck Mechanics, Diesel Engine Mechanics, Heavy Equipment Mechanics, Material Coordinators/Shipping & Receiving Clerks See the MT Dept of Labor website for more information: http://wsd.dli.mt.gov/apprenticeship/default.asp	
CERTIFICATE OF APPLIED SCIENCE	<ul style="list-style-type: none"> Requires diploma or GED 30-45 credits; limited general education credits Complete in one year or less 	Automotive Collision & Refinishing — CC, GFC Automotive Technology — HC Tech, MSUN, CC, MCC, FPCC Diesel Equipment/Technology — CC Heavy Equipment Operation — MC, FVCC, MCC, FPCC, BCC Highway Construction Worker — SKC Recreational Power Equipment — MC Truck Driving — FPCC	
ASSOCIATE'S OF APPLIED SCIENCE DEGREE	<ul style="list-style-type: none"> Requires diploma or GED 60-72 credits; includes 15-25 general ed credits Complete in two years (<i>if prepared academically in math and English</i>) 	Automotive Collision & Refinishing — CC Automotive Technology — HC, CC, MSUN, MCC, FPCC Aviation — GC Aviation Maintenance — Helena College Diesel Equipment/Technology — CC, HC, MC, MSUN	
BACCALAUREATE DEGREE	<ul style="list-style-type: none"> Requires 4-year college prep for admission 128 credits (approximately) Complete in four years 	Diesel Technology — MSUN	

Degree and Program Inventory above may not be all inclusive