American V-Twin Technician

The American V-Twin Technician program provides technical hands-on training with a variety of American V-Twin products including Victory Motorcycles, S&S Cycle performance products, Harley-Davidson Motorcycles and aftermarket custom motorcycle components. The program prepares the successful student to enter into the field as a technician in a franchised dealership, aftermarket service center, custom motorcycle fabrication paint shop and performance tuning center. Students will practice customer service and communication skills necessary to be successful in a modern service environment. Lab practices and workstations will simulate a service center environment and repair procedures including hands-on training with engines, fuel systems, suspension systems, electrical systems, dynamometers, fabrication tools as well as basic and custom painting techniques.

Course	Course Title	Clock Hours	Weeks	Quarter Credit Hours
PSI-101	Engine Systems – Core Skills	75	3	4.5
PSI-102	Fuel Systems Maintenance & Repair	75	3	4.0
PSI-103	Intro to Electrical Systems	75	3	4.5
PSI-104	Chassis & Suspension Systems Service	75	3	4.0
PSI-105	Advanced Electrical Systems	75	3	4.5
PSI-106	DynoJet Training Center	75	3	4.5
VTS-101	V-Twin Technology	450	18	26.0
VTS-102	Victory Technology	75	3	4.5
VTS-103	Custom Motorcycle Building	225	9	13.0
VTS-104	Custom Fabrication	150	6	9.0
VTS-105	Custom Paint	225	9	12.5
VTS-106	V-Twin Engine Performance & Pro Tuning	150	6	9.0
VTS-107	Industry Preparation	75	3	4.5
		1800	72	104.50

PSI-101 Engine Systems – Core Skills
This module is designed to provide students with an understanding of 4-stroke and 2-stroke engine operation, part/component identification, disassembly and assembly of an engine to working order and manufacturer specifications. Students will develop basic engine service procedure skills while properly utilizing his textbook/workbook, shop resource materials, and the Resource Center. Students will learn hand tool identification and use, fastener identification, shop manual usage, measuring tools, and will be able to measure engine parts during disassembly.

PSI-102 Fuel Systems Maintenance & Repair
This module is designed to provide students with an understanding of power sport vehicle fuel systems and carburetion. Students will learn mechanical diagnostics including compression and leak-down tests and valve adjustments. Students then continue with carburetor fuel circuits in mechanical slide and CV carburetors and include carburetor disassembly, component identification, cleaning, and rebuilding to manufacturer specifications and perform carburetor synchronization and idle drop tests on running vehicles while utilizing his textbook/workbook, shop resource materials, and the Resource Center.

PSI-103 Intro to Electrical Systems
This course provides experiences which will enable the successful student to learn electrical systems operation, test equipment usage, electrical system testing procedures and properly utilize the resource material and Resource Center. Accessories, lighting, starting systems, and batteries are studied along with an introduction to electrical troubleshooting and diagnostic procedures.

PSI-104 Chassis and Suspension Systems Service
This course prepares students for chassis service, and final drive operations, and repair procedures including general maintenance procedures on motorcycle chassis and suspension systems. A focus on suspension technology will be presented to provide core skill information and hands-on workstations to become familiar with suspension adjustments and service, repair procedures, and properly utilize the resource material and resource library Successful students will be able to perform general maintenance procedures on steering head bearings, swing arm bearings and or bushings, brakes systems and suspension systems.

PSI-105 Advanced Electrical Systems
This course provides experiences which will enable the successful student to gain further knowledge of electrical systems, advanced test equipment usage, electrical system testing procedures and proper utilization of the resource material and Resource Center. Ignition and charging systems are studied as well as the troubleshooting and diagnostic procedures for vehicle electrical systems.

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PSI-106 Dynojet Training Center
This course focuses on providing students the ability to utilize a chassis dynamometer to become more efficient in the service department. The student will be able to navigate through Dynojet software to select different options and configure different tests. Students learn to make various dyno runs to assist in the diagnostics of motorcycle maintenance and drivability issues. Students will be shown how to navigate through power commander software and make changes needed to meet the bikes optimum performance.

VTS-101 V-Twin Technology
This course consists of six 75-hour regiments covering V-Twin Engine, Fuel, Electrical, Driveline/ Suspension, Vehicle Maintenance & Assessment. This manufacturer course supported by Victory motorcycles and S&S Cycles provides students an opportunity to complete the requirements for Victory Manufacturer Service Dealer Training (MSD) recognition. This course introduces students to V-Twin engine technology, which enables the successful student to develop the skills and knowledge required to service and repair Harley-Davidson, Victory, and S&S engines. Harley-Davidson and V-Twin electrical system testing and troubleshooting is practiced to be able to diagnose V-Twin charging, ignition, starting and lighting systems issues. Students will perform general maintenance procedures on V- Twin motorcycles, including fuel system which provides a solid understanding of motorcycle engine management systems fuel injection software operation information and diagnosis procedures.

VTS-102 Victory Technology
The course focuses on Victory fuel system technology so that students will gain a solid understanding of fuel injection engine management systems operations and diagnostic procedures. Given services maintenance procedures the successful student will be able to perform maintenance service intervals procedures including changing oil, valve adjustments, cable adjustments, and final drive adjustments on Victory motorcycles. Utilizing Victory fuel injection software and equipment, students gain experience on troubleshooting fuel and electrical drivability issues.

VTS-103 Custom Motorcycle Building & Performance
This S&S Cycle and Dynojet Dynamometer supported course focuses on understanding the methods and procedures of building and assembling a custom motorcycle. The successful student will build a rolling chassis; install an engine, primary and drive systems, an electrical system wiring harness, fuel system and lighting system.

VTS-104 Custom Fabrication
The Custom Fabrication module focuses on understanding the methods and procedures of assembling a custom motorcycle relating to the metal components. The student will design, fabricate and install a fuel tank on a motorcycle frame and prepare the tank for painting.

VTS-105 Custom Paint
The Custom Paint module focuses on the artistic side of motorcycle painting. Using an intensive hands-on environment, students will learn the fundamentals of custom painting including graphics, pin striping and exotic painting and airbrush techniques. Methods of transferring artwork to paintable surfaces, masking, taping, and cutting techniques will be explored along with the equipment operation and maintenance, the paints used, color theory and the basic skills needed to paint.

VTS-106 V-Twin Engine Performance & Pro Tuning
The V-Twin Engine Performance & Pro Tuning module focuses on the S&S Cycle, Inc. and Dynojet Research, Inc. dynamometer methods of tuning a high performance motorcycle engine. Students are introduced to S&S Sidewinder and VFI training and will disassemble and reassemble Evolution and Twin Cam engines using S&S high performance components and perform S&S VFI tuning using the Dynojet dynamometer. The module continues with additional dynamometer tuning using fuel modifiers including S&S Intelligent Spark Technology (IST) and Variable Fuel Injection (VFI) technology, Victory Motorcycle Power Commander, Harley-Davidson Race Tuner software, Daytona Twin Tec ignition systems and ACCEL SLM Self Learning Fuel Injection Tuner Module.

VTS-107 Industry Preparation
The Industry Preparation module prepares the student for employment in the industry. The students are introduced to the career development techniques of employment search and interview skills and starting a business. The module continues with the assessment of skills used to perform manufacturer vehicle scheduled services, tire changes, clutch service and the assessment of diagnostic skills used to troubleshoot vehicle problems. The module concludes with the management, supervision and critique of other student technicians while on task.

Courses applicable to both Diploma or Associate of Applied Science Degree Programs