

MOTORCYCLE SERVICE TECHNOLOGY (MST)

MST 106 Introduction to Powder Coating (3 Credits)

30 lecture, 30 lab, 3 total contact hours

In this course, students are introduced to the basic principles and process of powder coating, a finishing process for vehicle components that is an alternative to painting. Students will be introduced to tooling, media and procedures used to powder coat small components. Other topics such as project management and resource development will be covered. Level I Prerequisite: Academic Reading and Writing Levels of 6; ABR 111 or ASV 130 or MST 110, minimum grade "C"

MST 110 Motorcycle Service Technology I (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this course, students will be introduced to the operation of a motorcycle service department. Through practice, students will gain confidence in the proper use of hand tools, shop tools and precision measurement tools commonly used in the powersports industry. Other topics include the use of service and parts manuals, the theory behind and the performance of mileage-based maintenance as well as the operation and tolerances of basic internal combustion engines. Time management and service quality will be discussed. Level I Prerequisite: Academic Reading and Writing Levels of 6

MST 112 Advanced Powder Coating (3 Credits)

30 lecture, 30 lab, 3 total contact hours

In this course, students are exposed to more complex techniques used in the powder coating process. Advanced powder coating is a multiple layered coating process that is an alternative to custom painting. Students will further develop skills in tooling, media and procedures used to powder coat by applying them to larger components. Color matching, powder coating step-by-step process identification and proper media selection for specific applications will be discussed. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 106 minimum grade "C"

MST 120 Motorcycle Service Technology II (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this course, students will be introduced to the operation and maintenance of motorcycle driveline components and the theory behind frame designs. Students will learn how to inspect, service and repair primary and final drive systems, clutch assemblies and transmissions. Frame geometry, wheel lacing, brake component rebuilding, brake system servicing and suspension component rebuilding and set up will also be covered. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 110 minimum grade "C"

MST 130 Motorcycle Service Technology III (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this course, students focus on problem-solving strategies for isolating defective components, troubleshooting and repair. Students will work on wiring harness, charging system, ignition system and starting system components. The principles, components, operation, troubleshooting, service and repair of both carbureted and fuel-injected systems will be covered. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 120 minimum grade "C"

MST 140 Motorcycle Service Technology IV (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this course, students learn the proper procedure for preparing complete and accurate damage repair estimates through the use of manufacturer's service and parts manuals. Using a combination of classroom and hands-on skills training, students learn to diagnose, service and repair single- and multiple-cylinder engines. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 130 and WAF 105, minimum grade "C"

MST 210 Performance Engine Technology (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this class, students will explore performance powertrain theory and the skills to develop and build reliable engines. Topics such as selection of complementary engine components, precision measuring tools, performance engine testing simulators and engine component machining tools will be covered. Students will also learn the advantages and disadvantages of raising the performance levels of an engine. Upon successful completion of the course, students will be able to identify, design, install and test engine enhancing components. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 140 and MST 225, minimum grade "C"

MST 220 Dynamometer Operations (4 Credits)

45 lecture, 60 lab, 4 total contact hours

In this course, students learn to identify the components and operation of a load control dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic, data acquisition, and tuning tool. The course will instruct students in the design and application of various tuning technologies used in current custom fuel and ignition mapping. Students will develop the skills to become proficient in tuning carbureted vehicles. Level I Prerequisite: Academic Reading and Writing Levels of 6; ASV 277 or MST 140, minimum grade "C"; ASV 277 may enroll concurrently

MST 225 Advanced Dynamometer Tuning Systems (4 Credits)

45 lecture, 60 lab, 4 total contact hours

Students will be taught the skills to operate a load control dynamometer as an advanced tuning tool. The primary emphasis is on the student learning to use the dynamometer to troubleshoot and tune fuel injection systems on motorcycles and ATV's. They will learn the application of various technologies used by both the OEM's and aftermarket companies. Level I Prerequisite: Academic Reading and Writing Levels of 6; MST 220 minimum grade "C"

MST 230 Advanced Motorcycle Fabrication (3 Credits)

30 lecture, 30 lab, 3 total contact hours

This course begins the integration of the knowledge and skills acquired in the Motorcycle Service Technology programs and from coursework in Welding and Fabrication and Machine Tool Technology. Students will practice design skills including pattern development, mechanical drawing and fastener selection in the creation of a custom motorcycle frame, swing arm or billet accessory. Designed parts will be fabricated using welding, milling machine and lathe operation skills on various types of building materials including body sheet metal. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required

MST 235 Advanced Motorcycle Fabrication II (3 Credits)

30 lecture, 30 lab, 3 total contact hours

This is the second course in advanced motorcycle fabrication. This course expands on the knowledge acquired in Motorcycle Service Technology, Welding and Fabrication and in Machine Tool Technology. Areas of study will include all aspects of the complete design and fabrication of a custom motorcycle. Level I Prerequisite: Academic Reading and Writing Levels of 6; consent required