



## Motorcycle Mechanics

### Credential: Diploma in Motorcycle Mechanics D6026000

This curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair and/or adjust motorcycles, ATV's and personal watercraft.

Course work includes a thorough understanding of the operating principles involved in modern motorcycles which will be presented in class assignments, discussion, demonstration and shop practice.

Graduates receiving a diploma may find employment with motorcycle dealers, independent repair shops or may set up their own business after they have developed skills in the trade.

**Entrance Standards:** See General Admission Standards on page 7 (*Gen. Info* section).

**Academic Standards:** See General Academic Standards on page 19 (*Gen. Info* section).

**Program Length:** 3 semesters

**Career Pathway Options:** Diploma in Motorcycle Mechanics

**Program Sites:**

Lee Campus - Day Program

#### Course Requirements for Motorcycle Mechanics Diploma

<b>A. <u>General Education Courses</u> (6 SHC)</b>		C-L-SHC
ENG	102 Applied Communications II	3-0-3
MAT	101 Applied Math I	2-2-3
<b>B. <u>Required Major Core Courses</u> (38 SHC)</b>		
BUS	230 Small Business Mgmt	3-0-3
MCM	101 Intro to Motorcycle Mech.	3-8-7
MCM	102 Motorcycle Engines	2-9-5
MCM	103 Motorcycle Electrical Sys.	2-8-6
MCM	104 Motorcycle Fuel Systems	2-6-5
MCM	105 Motorcycle Chassis	1-6-3
MCM	106 Troubleshooting	2-6-4
MEC	111 Machine Processes I	1-4-3
WLD	112 Basic Welding Processes	1-3-2
<b>C. <u>Other Major Hours Required for Graduation</u> (2 SHC)</b>		
CIS	111 Basic PC Literacy	1-2-2

Total Semester Hours Credit Required for Graduation: 46

#### Semester Curriculum for Motorcycle Mechanics Diploma

<b>1st Semester (Summer)</b>		C-L-SHC
BUS	230 Small Business Mgmt	3-0-3
MCM	101 Intro to Motorcycle Mech.	<u>3-8-7</u>
		6-8-10

<b>2nd Semester (Fall)</b>		
CIS	111 Basic PC Literacy	1-2-2
MAT	101 Applied Math I	2-2-3
MCM	102 Motorcycle Engines	2-9-5
MCM	103 Motorcycle Electrical Sys.	2-8-6
WLD	112 Basic Welding Procedures	<u>1-3-2</u>
		8-24-18

<b>3rd Semester (Spring)</b>		
ENG	102 Applied Communications II	3-0-3
MCM	104 Motorcycle Fuel Systems	2-6-5
MCM	105 Motorcycle Chassis	1-6-3
MCM	106 Troubleshooting	2-6-4
MEC	111 Machine Processes I	<u>1-4-3</u>
		9-22-18

Total Semester Hours Credit: 46

#### **BUS 230 Small Business Mgmt.** 3-0-3

This course introduces the challenges of entrepreneurship including the startup and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

#### **CIS 111 Basic PC Literacy** 1-2-2

This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

#### **ENG 102 Applied Communications II** 3-0-3

*Prerequisites: 65 CPT reading score and 74 CPT writing score, or 18 ACT score, or 450 verbal SAT score, or satisfactory completion of developmental requirements.*

This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. *The computer is used as a writing and design tool for this course. This is a diploma-level course.*

#### **MAT 101 Applied Mathematics I** 2-2-3

*Prerequisites: CPT arithmetic score of 31, or ACT score of 18, or SAT mathematics score of 450, or successful completion of developmental requirements*

This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. *This course is intended for certificate and diploma programs.*

#### **MCM 101 Intro to Motorcycle Mech** 3-8-7

This course covers the proper nomenclature of parts and components of motorcycles, ATVs, and personal watercraft. Topics include theory of operation, differences of operation, preventive maintenance, and operating principles involved in servicing and repairing motorcycles, ATVs, and personal watercraft. Upon completion, students should be able to perform basic inspection, diagnosis, repair,

and/or adjustment of motorcycles, ATVs, and personal watercraft.  
*This is a diploma-level course.*

**MCM 102 Motorcycle Engines** 2-9-5

This course covers the construction and operation of components in internal combustion engines used in modern motorcycles. Topics include two- and four-cycle engines, power trains, and final drive systems. Upon completion, students should be able to disassemble, inspect, measure, reassemble, and operationally test two- and four-cycle motorcycle engines. *This is a diploma-level course.*

**MCM 103 Motorcycle Elect Systems** 2-8-6

This course introduces starting, ignition, charging, and electrical accessory systems and their components and how they function in modern motorcycles. Topics include wiring diagrams, batteries, AC generators, rectifiers, voltage regulators, and diodes as well as points-coil, capacitor discharge, and electronic ignition systems. Upon completion, students should be able to diagnose and repair various starting, ignition, charging, and electrical accessory systems. *This is a diploma-level course.*

**MCM 104 Motorcycle Fuel Systems** 2-6-5

This course introduces various types of fuels and fuel systems used in motorcycle internal combustion engines. Emphasis is placed on the theory and principles of carburetion and fuel injection. Upon completion, students should be able to service, disassemble, inspect, reassemble, and adjust to manufacturers' specifications the components of various fuel systems. *This is a diploma-level course.*

**MCM 105 Motorcycle Chassis** 1-6-3

This course covers chassis adjustments, components, and types and uses of frames and suspensions. Emphasis is placed on proper and safe use of tools and equipment in servicing and maintaining motorcycle chassis. Upon completion, students should be able to service and repair motorcycle chassis systems and suspension components. *This is a diploma-level course.*

**MCM 106 Troubleshooting** 2-6-4

This course covers shop procedures for fast and accurate diagnosis of problems in the electrical, mechanical, and fuel systems of motorcycles. Emphasis is placed on developing a logical sequence of diagnostic procedures. Upon completion, students should be able to diagnose problems in the electrical, mechanical, and fuel systems of motorcycles. *This is a diploma-level course.*

**MEC 111 Machine Processes I** 1-4-3

This course introduces safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include safety, measuring tools, and the basic setup and operation of lathes, milling machines, drill presses, and saws. Upon completion, students should be able to manufacture a simple part to a specified tolerance.

**WLD 112 Basic Welding Processes** 1-3-2

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.