Florida Department of Education
CURRICULUM FRAMEWORK

Program Title: Motorcycle Service Technology
Program Type: Job Preparatory
Occupational Area: Industrial Education

	Secondary	PSAV
Program Numbers	**8766100**	**I470616**
CIP Number	0647.060601	0647.060601
Grade Level	9-12, 30, 31	30, 31
Length	10 Credit	1500 Hours
Facility Code		203
CTSO	SkillsUSA-VICA	SkillsUSA-VICA
Co-op Method	Yes	Yes
Apprenticeship	Yes	Yes
Certification	Motorcycle @7G	Motorcycle @7 G
Basic Skills		
Math		10
Language		9
Reading		10

I. **PURPOSE:** The purpose of this program is to prepare students for employment or advanced training in the motorcycle service technology industry and for a career as a motorcycle mechanic (DOT 620.281-054) or a motorcycle mechanic with advanced training (Industry Title). Helps prepare individuals for employment in personal watercraft and all terrain vehicle (ATV) businesses.

This program focuses on broad, transferable skills, stresses the understanding of all aspects of the motorcycle services technology industry, and demonstrates such elements of the industry as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

II. **PROGRAM STRUCTURE:** This program is a planned sequence of instruction consisting of four occupational completion points as follows: (1) Assembler (Setup) (OES 93956); (2) Clerk, Parts (Industry Title); (3) Helper, Mechanic and Repairer (OES 98102); (4) Motorcycle Mechanic (DOT 620.281-054). When the recommended sequence is followed, the structure will allow students to complete specified portions of the program for employment or to remain for advanced training. A student who completes the applicable competencies at any occupational completion point may either continue with the training or become an occupational completer.

Occupational Completion Points may be reached before the end of a secondary course. All outcomes must be completed to receive credit for a Occupational Completion Point (OCP). Listed below are the courses that comprise this program when offered at the secondary level.

8766110 - Motorcycle Service 1 (150) [150] - OCP A
8766120 - Motorcycle Service 2 (150)
8766130 - Motorcycle Service 3 (150) [200] - OCP B
8766140 - Motorcycle Service 4 (150)

8766150 - Motorcycle Service 5 (150) [400] - OCP C
8766160 - Motorcycle Service 6 (150)
8766170 - Motorcycle Service 7 (150)
8766180 - Motorcycle Service 8 (150)
8766190 - Motorcycle Service 9 (150)
8766200 - Motorcycle Service 10 (150) [750] - OCP D

III. **LABORATORY ACTIVITIES**: Classroom, shop, and laboratory activities are an integral part of this program. These activities include training in the general maintenance and safe use of all instructional resources. Equipment and supplies should be provided to enhance hands-on experiences for students in the chosen occupation.

IV. **SPECIAL NOTE: SkillsUSA**-VICA, Inc. is the appropriate Career and Technical Student Organization (CTSO) for providing leadership training and for reinforcing specific career and technical skills. Career and Technical Student Organizations, when provided, shall be an integral part of the career and technical instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC.

In many businesses, motorcycles and personal watercraft are sold and serviced at the same sites. The outcomes and standards in this curriculum framework apply to a variety of motorcycle power applications including personal watercraft.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

This program is offered in postsecondary adult vocational (PSAV) courses. Vocational credit shall be awarded to the student on a transcript in accordance with Section 230.643, F.S.

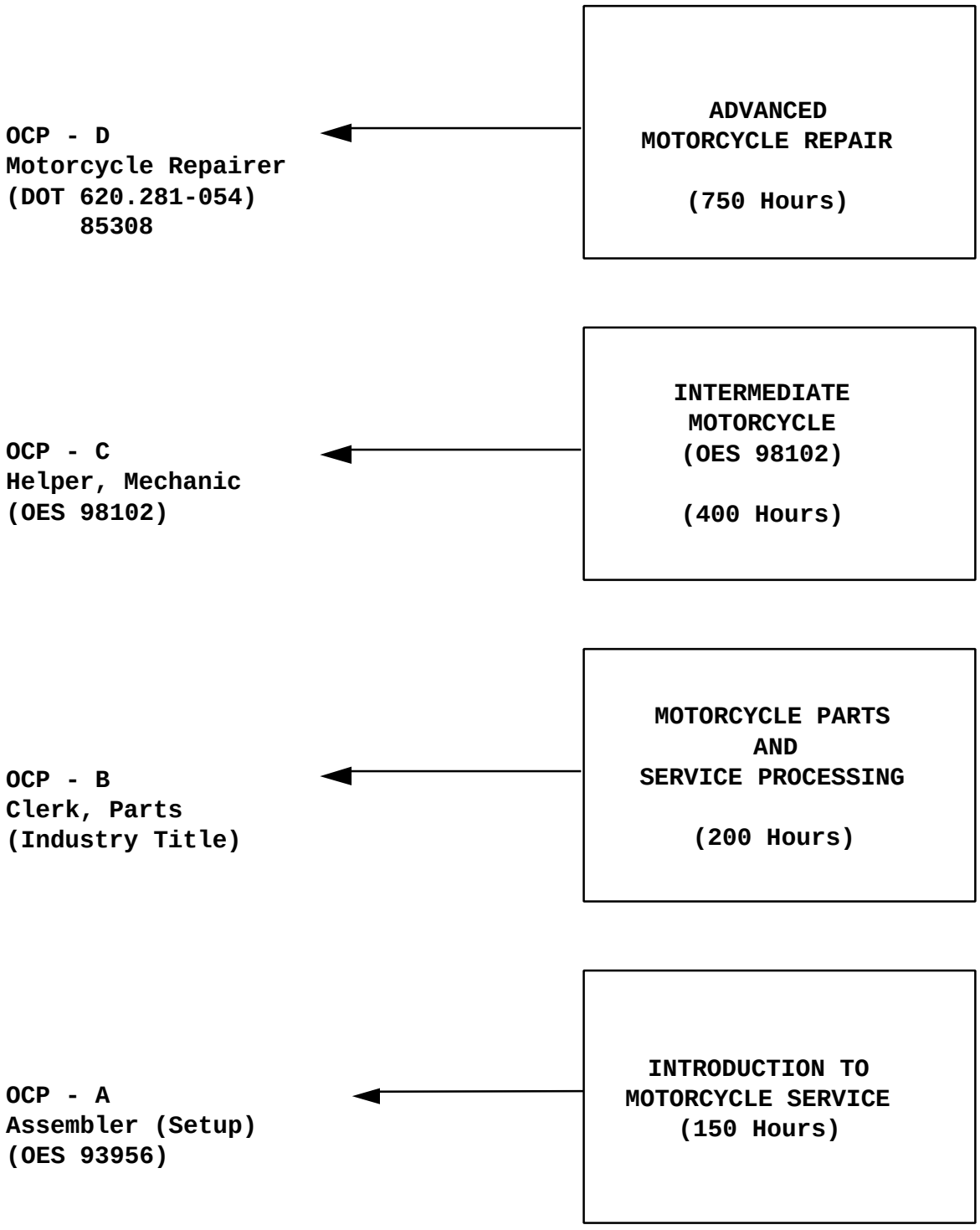
In accordance with Rule 6A-10.040, FAC, the minimum basic-skills grade levels required for adult vocational students to complete this program are: Mathematics 10.0, Language 9.0, Reading 10.0. These grade-level numbers correspond to grade-equivalent scores obtained on one of the state-designated basic-skills examinations. If a student does not meet the basic-skills level required for completion of the program, remediation should be provided concurrently through Vocational Preparatory Instruction (VPI). Please refer to the Rule for exemptions.

When a secondary student with a disability is enrolled in a vocational class with modifications to the curriculum framework, the particular outcomes and student performance standards which the student must master to earn credit must be specified on an individual basis. The job or jobs for which the student is being trained should be reflected in the student's desired postschool outcome statement on the Transition Individual Educational Plan (Transition IEP).

V. **SCANS Competencies**: To accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies, instructional strategies for this program must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment.

The following diagram illustrates the program structure:

MOTORCYCLE SERVICE TECHNOLOGY



Instructional strategies must also incorporate methods to improve students' personal qualities and higher-order thinking skills.

The standard length for this program is 1500 hours.

VI. **INTENDED OUTCOMES:** After successfully completing the appropriate course(s) for this program, the student will be able to perform the following:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 HOURS)
ASSEMBLER (SETUP) - OES 93956

MOTORCYCLE SERVICE 1

01.0 Identify personal and industry safety requirements.
02.0 Demonstrate the proper use and care of basic shop tools and equipment.
03.0 Demonstrate appropriate set-up procedures.
04.0 Demonstrate basic math skills.
05.0 Demonstrate proficiency in performing routine preventative maintenance services.
06.0 Demonstrate proficiency in employability skills.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (200 HOURS)
CLERK, PARTS - INDUSTRY TITLE

MOTORCYCLE SERVICE 2

07.0 Demonstrate industry-related communication skills.
08.0 Demonstrate industry-related math skills.

MOTORCYCLE SERVICE 3

09.0 Demonstrate proficiency in acceptable employee behavior.
10.0 Demonstrate proficiency in parts inventory identification and repair order processing.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (400 HOURS)
HELPER, MECHANIC - OES 98102

11.0 Perform basic services and minor repairs.
12.0 Perform basic frame and suspension service.

MOTORCYCLE SERVICE 4

13.0 Perform basic wheel, tire and brake service.
14.0 Perform basic electrical system service.

MOTORCYCLE SERVICE 5

15.0 Diagnose, service and repair cooling systems.
16.0 Diagnose, repair and recondition basic engine components.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (750 HOURS)
MOTORCYCLE REPAIRER -- MOTORCYCLE MECHANIC - DOT 620.281-054

MOTORCYCLE SERVICE 6

17.0 Apply industry-related science to motorcycle service.

18.0 Diagnose, service and repair frames and suspension components.

MOTORCYCLE SERVICE 7

19.0 Diagnose, service and repair wheels, tires, and brakes.

MOTORCYCLE SERVICE 8

20.0 Diagnose, service and repair drive trains.
21.0 Diagnose, service and repair fuel and exhaust systems.

MOTORCYCLE SERVICE 9

22.0 Troubleshoot and repair electrical-system components.

MOTORCYCLE SERVICE 10

23.0 Tune up motorcycles.
24.0 Diagnose, repair and recondition engines.
25.0 Demonstrate the proper use of industry tools and equipment.
26.0 Demonstrate an understanding of entrepreneurship.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Motorcycle Service Technology
Secondary Number: 8766100
Postsecondary Number: I470616

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
ASSEMBLER (SETUP) - OES 93956

01.0 IDENTIFY PERSONAL AND INDUSTRY SAFETY REQUIREMENTS--The student will be able to:

01.01 Identify federal and state standards for health and safety, including OSHA and the Florida "Right-to-Know" law, Florida Statutes, Chapter 442.
01.02 Identify safety requirements for shop organization and management.
01.03 Identify safety requirements for the use of industry tools and equipment.
01.04 Identify fire-safety precautions.
01.05 Identify electrical-safety precautions.

02.0 DEMONSTRATE THE PROPER USE AND CARE OF BASIC SHOP TOOLS AND EQUIPMENT--The student will be able to:

02.01 Identify general and specialized hand tools.
02.02 Identify and use power tools.
02.03 Identify and use fasteners.

03.0 DEMONSTRATE APPROPRIATE SET-UP PROCEDURES--The student will be able to:

03.01 Identify and interpret vehicle identification number information.
03.02 Inspect tires; check and adjust air pressure.
03.03 Check for proper fluid levels.
03.04 Check lamp circuits.
03.05 Inspect and fill battery.
03.06 Clean engine.
03.07 Install cables, hoses and electrical assemblies.
03.08 Inspect cables, connectors, clamps and hold-downs; adjust as necessary.
03.09 Check drive chain tension.

04.0 DEMONSTRATE BASIC MATH SKILLS--The student will be able to:

04.01 Add, subtract, multiply and divide using fractions, decimals and whole numbers.
04.02 Measure dimensions using millimeters and inches.

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING ROUTINE PREVENTATIVE MAINTENANCE SERVICES--The student will be able to:

05.01 Identify and describe typical motorcycle lubricants and lubricant properties.
05.02 Inspect and test head and tail lamp circuits; aim headlights and replace bulbs.

05.03 Perform battery state-of-charge test; perform slow/fast battery charge.
05.04 Inspect and clean battery cables, connectors, clamps and hold-downs; repair or replace as needed.
05.05 Inspect and test fusible links, circuit breakers and fuses; replace as needed.
05.06 Check radiator coolant level (if applicable), test and add coolant.
05.07 Check fluid levels and change fluids and filters.

06.0 DEMONSTRATE PROFICIENCY IN EMPLOYABILITY SKILLS --The student will be able to:

06.01 Secure information about a job.
06.02 Identify documents that may be required when applying for a job.
06.03 Complete a job application form correctly.
06.04 Identify and adopt acceptable work habits.
06.05 Demonstrate acceptable employee health habits.
06.06 Demonstrate appropriate telephone/communication skills.
06.07 Conduct a job search.
06.08 Demonstrate competence in job interview techniques.
06.09 Identify or demonstrate appropriate responses to criticism from an employer, supervisor, or other employees.
06.10 Demonstrate knowledge of how to make job changes appropriately.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (200 Hours)
CLERK, PARTS - INDUSTRY TITLE

07.0 DEMONSTRATE INDUSTRY-RELATED COMMUNICATION SKILLS--The student will be able to:

07.01 Read and follow written and oral instructions.
07.02 Answer and ask questions coherently and concisely.
07.03 Write logical and understandable statements or phrases to accurately complete forms or invoices commonly used in business and industry.
07.04 Demonstrate appropriate telephone and face-to-face communication skills.
07.05 Read critically by recognizing assumptions and implications and by evaluating ideas.

08.0 DEMONSTRATE INDUSTRY-RELATED MATH SKILLS--The student will be able to:

08.01 Measure tolerance(s) using millimeters and inches.
08.02 Perform metric to SAE (and SAE to metric) conversions.

09.0 DEMONSTRATE PROFICIENCY IN ACCEPTABLE EMPLOYEE BEHAVIOR--The student will be able to:

09.01 Explain the effects of chemical/substance abuse.
09.02 Identify principles of stress management.
09.03 Identify and define career opportunities in the industry.
09.04 Explain and identify acceptable work ethics.
09.05 Explain acceptable dress standards.
09.06 Identify and demonstrate proper customer relations skills.
09.07 Identify principles of time management.

09.08 Identify and define payroll deductions (taxes, insurance, social security) and employee benefits.

10.0 DEMONSTRATE PROFICIENCY IN PARTS INVENTORY IDENTIFICATION AND REPAIR ORDER PROCESSING--The student will be able to:

10.01 Read and interpret information in parts and service manuals and other technical media.
10.02 Read and understand graphs, charts, diagrams and tables commonly used in the industry.
10.03 Write and process work orders.
10.04 Prepare cost estimates for jobs using service- and flat-rate standards.
10.05 Perform basic parts inventory tracking.
10.06 Interpret and verify complaint; determine needed repairs.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (400 Hours)
HELPER, MECHANIC - OES 98102

11.0 PERFORM BASIC SERVICES AND MINOR REPAIRS--The student will be able to:

11.01 Demonstrate the proper use of industry tools and equipment.
11.02 Identify, select and use appropriate sealants.
11.03 Service air filtration.
11.04 Service and diagnose batteries.
11.05 Service lubrication systems.
11.06 Identify components of air and liquid cooling systems by name and function.
11.07 Remove, remount and balance tires.
11.08 Diagnose, service and repair chain and belt final drive components.

12.0 PERFORM BASIC FRAME AND SUSPENSION SERVICE--The student will be able to:

12.01 Identify different front- and rear-suspension systems and explain their operation.
12.02 Identify the parts and functions of different frames and suspension systems.
12.03 Install and route cables, hoses and wiring harnesses.
12.04 Explain how wheels, tires and suspension affect chassis performance and driveability.

13.0 PERFORM BASIC WHEEL, TIRE AND BRAKE SERVICE--The student will be able to:

13.01 Explain how wheels, tires and suspension affect chassis performance ad driveability.
13.02 Replace and true a wheel assembly.
13.03 Diagnose and service wheel bearings and seals.

14.0 PERFORM BASIC ELECTRICAL SYSTEM SERVICE--The student will be able to:

14.01 Identify and use basic electrical system test equipment.
14.02 Use basic DC electrical theory to select appropriate test procedures.

14.03 Inspect and test fusible links, circuit breakers and fuses; replace as needed.
14.04 Check electrical circuits with a test light; determine needed repairs.

15.0 DIAGNOSE, SERVICE, AND REPAIR COOLING SYSTEMS--The student will be able to:

15.01 Identify the components of air and liquid cooling systems by name and function.
15.02 Diagnose, service and repair air cooling systems.
15.03 Diagnose, service and repair liquid cooling systems.

16.0 DIAGNOSE, REPAIR AND RECONDITION BASIC ENGINE COMPONENTS--The student will be able to:

16.01 Explain the engine operating theory.
16.02 Recondition a two-stroke engine top-end.
16.03 Diagnose and repair oil-delivery systems.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (750 Hours)
MOTORCYCLE REPAIRER -- MOTORCYCLE MECHANIC - DOT 620.281-054

17.0 APPLY INDUSTRY-RELATED SCIENCE TO MOTORCYCLE SERVICE--The student will be able to:

17.01 Explain how temperature extremes, chemical reactions and moisture content affect motorcycle systems.
17.02 Draw conclusions or make inferences from data.
17.03 Identify health-related problems that may result from exposure to work-related chemicals and hazardous materials and know the proper precautions required for handling such materials.
17.04 Measure pressure in terms of pounds per square inch (PSI).

18.0 DIAGNOSE, SERVICE, AND REPAIR FRAMES AND SUSPENSION--The student will be able to:

18.01 Service and repair front suspension.
18.02 Service and repair rear suspension.
18.03 Inspect, remove, and replace frames.

19.0 DIAGNOSE, SERVICE, AND REPAIR WHEELS, TIRES AND BRAKES--The student will be able to:

19.01 Diagnose and repair mechanical disc and drum brake systems and components.
19.02 Diagnose and repair hydraulic disc and drum brake systems and components.
19.03 Diagnose and repair ABS braking systems and other advanced stopping systems.

20.0 DIAGNOSE, SERVICE, AND REPAIR DRIVE TRAINS--The student will be able to:

20.01 Diagnose, service, and repair primary-drive systems.
20.02 Diagnose, service, and repair clutch assemblies.
20.03 Diagnose, service, and repair transmissions.

20.04 Diagnose, service, and repair shaft drives.
20.05 Diagnose and repair kickstart systems.

21.0 DIAGNOSE, SERVICE, AND REPAIR FUEL AND EXHAUST SYSTEMS--The student will be able to:

21.01 Identify components and operation of carburetion and fuel-injection systems.
21.02 Diagnose, service and repair slide-type carburetors.
21.03 Diagnose, service and repair constant-velocity-type (CV-type) carburetors.
21.04 Diagnose, service and repair fixed-venturi carburetors.
21.05 Diagnose, service and repair fuel-injection systems.
21.06 Diagnose, service and repair exhaust systems.
21.07 Diagnose, service and repair other fuel-delivery-system components.

22.0 TROUBLESHOOT AND REPAIR ELECTRICAL-SYSTEM COMPONENTS--The student will be able to:

22.01 Utilize electrical test equipment to isolate defective components.
22.02 Read and interpret a wiring diagram.
22.03 Troubleshoot and repair wiring harnesses.
22.04 Troubleshoot and repair battery/points ignition systems.
22.05 Troubleshoot and repair battery-operated electronic ignition systems.
22.06 Troubleshoot and repair magneto-ignition systems.
22.07 Troubleshoot and repair capacitive-discharge-ignition (CDI) systems.
22.08 Troubleshoot and repair half-wave and full-wave charging systems.
22.09 Troubleshoot and repair three-phase charging systems.
22.10 Troubleshoot and repair electrical starter systems.
22.11 Troubleshoot and repair direct current (DC) generators.
22.12 Troubleshoot and repair warning systems.

23.0 TUNE UP MOTORCYCLES--The student will be able to:

23.01 Diagnose driveability problems.
23.02 Adjust the cam chain tension.
23.03 Adjust the valve clearances.
23.04 Replace the ignition points, condenser, and spark plugs.
23.05 Check and set the ignition timing.
23.06 Adjust the carburetor and service the fuel-delivery systems.
23.07 Service the air-filtration systems.
23.08 Service and diagnose batteries.
23.09 Service the lubrication systems.

24.0 DIAGNOSE, REPAIR, AND RECONDITION ENGINES--The student will be able to:

24.01 Explain the engine operating theory.
24.02 Recondition a single-cylinder four-stroke engine top-end.
24.03 Recondition a multi-cylinder four-stroke engine top-end.
24.04 Recondition a two-stroke engine top-end.
24.05 Rebuild a four-stroke head.
24.06 Recondition a single-cylinder four-stroke engine bottom-end.
24.07 Recondition a multi-cylinder four-stroke engine bottom-end.
24.08 Recondition a two-stroke engine bottom-end.

24.09 Rebuild a built-up crankshaft.
24.10 Service a plain-bearing crankshaft.
24.11 Diagnose and repair electric-starter drive systems.
24.12 Diagnose and repair oil-delivery systems.

25.0 DEMONSTRATE THE PROPER USE OF INDUSTRY TOOLS AND EQUIPMENT--The student will be able to:

25.01 Utilize oxyacetylene welding outfit for heating, welding, brazing and cutting.
25.02 Use heating devices to perform service procedures.
25.03 Recondition cylinders.

26.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

26.01 Define entrepreneurship.
26.02 Describe the importance of entrepreneurship to the American economy.
26.03 List the advantages and disadvantages of business ownership.
26.04 Identify the risks involved in ownership of business.
26.05 Identify the necessary personal characteristics of a successful entrepreneur.
26.06 Identify the business skills needed to operate a small business efficiently and effectively.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 1
Course Number: 8766110
Course Credit: 1

01.0 IDENTIFY PERSONAL AND INDUSTRY SAFETY REQUIREMENTS--The student will be able to:

01.01 Identify federal and state standards for health and safety, including OSHA and the Florida "Right-to-Know" law, Florida Statutes, Chapter 442.
01.02 Identify safety requirements for shop organization and management.
01.03 Identify safety requirements for the use of industry tools and equipment.
01.04 Identify fire-safety precautions.
01.05 Identify electrical-safety precautions.

02.0 DEMONSTRATE THE PROPER USE AND CARE OF BASIC SHOP TOOLS AND EQUIPMENT--The student will be able to:

02.01 Identify general and specialized hand tools.
02.02 Identify and use power tools.
02.03 Identify and use fasteners.

03.0 DEMONSTRATE APPROPRIATE SET-UP PROCEDURES--The student will be able to:

03.01 Identify and interpret vehicle identification number information.
03.02 Inspect tires; check and adjust air pressure.
03.03 Check for proper fluid levels.
03.04 Check lamp circuits.
03.05 Inspect and fill battery.
03.06 Clean engine.
03.07 Install cables, hoses and electrical assemblies.
03.08 Inspect cables, connectors, clamps and hold-downs; adjust as necessary.
03.09 Check drive chain tension.

04.0 DEMONSTRATE BASIC MATH SKILLS--The student will be able to:

04.01 Add, subtract, multiply and divide using fractions, decimals and whole numbers.
04.02 Measure dimensions using millimeters and inches.

05.0 DEMONSTRATE PROFICIENCY IN PERFORMING ROUTINE PREVENTATIVE MAINTENANCE SERVICES--The student will be able to:

05.01 Identify and describe typical motorcycle lubricants and lubricant properties.
05.02 Inspect and test head and tail lamp circuits; aim headlights and replace bulbs.
05.03 Perform battery state-of-charge test; perform slow/fast battery charge.

05.04 Inspect and clean battery cables, connectors, clamps and hold-downs; repair or replace as needed.
05.05 Inspect and test fusible links, circuit breakers and fuses; replace as needed.
05.06 Check radiator coolant level (if applicable), test and add coolant.
05.07 Check fluid levels and change fluids and filters.

06.0 DEMONSTRATE PROFICIENCY IN EMPLOYABILITY SKILLS --The student will be able to:

06.01 Secure information about a job.
06.02 Identify documents that may be required when applying for a job.
06.03 Complete a job application form correctly.
06.04 Identify and adopt acceptable work habits.
06.05 Demonstrate acceptable employee health habits.
06.06 Demonstrate appropriate telephone/communication skills.
06.07 Conduct a job search.
06.08 Demonstrate competence in job interview techniques.
06.09 Identify or demonstrate appropriate responses to criticism from an employer, supervisor, or other employees.
06.10 Demonstrate knowledge of how to make job changes appropriately.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 2
Course Number: 8766120
Course Credit: 1

07.0 DEMONSTRATE INDUSTRY-RELATED COMMUNICATION SKILLS--The student will be able to:

07.01 Read and follow written and oral instructions.
07.02 Answer and ask questions coherently and concisely.
07.03 Write logical and understandable statements or phrases to accurately complete forms or invoices commonly used in business and industry.
07.04 Demonstrate appropriate telephone and face-to-face communication skills.
07.05 Read critically by recognizing assumptions and implications and by evaluating ideas.

08.0 DEMONSTRATE INDUSTRY-RELATED MATH SKILLS--The student will be able to:

08.01 Measure tolerance(s) using millimeters and inches.
08.02 Perform metric to SAE (and SAE to metric) conversions.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 3
Course Number: 8766130
Course Credit: 1

09.0 DEMONSTRATE PROFICIENCY IN ACCEPTABLE EMPLOYEE BEHAVIOR--The student will be able to:

09.01 Explain the effects of chemical/substance abuse.
09.02 Identify principles of stress management.
09.03 Identify and define career opportunities in the industry.
09.04 Explain and identify acceptable work ethics.
09.05 Explain acceptable dress standards.
09.06 Identify and demonstrate proper customer relations skills.
09.07 Identify principles of time management.
09.08 Identify and define payroll deductions (taxes, insurance, social security) and employee benefits.

10.0 DEMONSTRATE PROFICIENCY IN PARTS INVENTORY IDENTIFICATION AND REPAIR ORDER PROCESSING--The student will be able to:

10.01 Read and interpret information in parts and service manuals and other technical media.
10.02 Read and understand graphs, charts, diagrams and tables commonly used in the industry.
10.03 Write and process work orders.
10.04 Prepare cost estimates for jobs using service- and flat-rate standards.
10.05 Perform basic parts inventory tracking.
10.06 Interpret and verify complaint; determine needed repairs.

11.0 PERFORM BASIC SERVICES AND MINOR REPAIRS--The student will be able to:

11.01 Demonstrate the proper use of industry tools and equipment.
11.02 Identify, select and use appropriate sealant.
11.03 Service air filtration.
11.04 Service and diagnose batteries.
11.05 Service lubrication systems.
11.06 Identify components of air and liquid cooling systems by name and function.
11.07 Remove, remount and balance tires.
11.08 Diagnose, service and repair chain and belt final drive components.

12.0 PERFORM BASIC FRAME AND SUSPENSION SERVICE--The student will be able to:

12.01 Identify different front-and rear-suspension systems and explain their operation.
12.02 Identify the parts and functions of different frames and suspension systems.
12.03 Install and route cables, hoses and wiring harnesses.
12.04 Explain how wheels, tires and suspension affect chassis performance and driveability.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 4
Course Number: 8766140
Course Credit: 1

13.0 PERFORM BASIC WHEEL, TIRE AND BRAKE SERVICE--The student will be able to:

13.01 Explain how wheels, tires and suspension affect chassis performance ad driveability.
13.02 Replace and true a wheel assembly.
13.03 Diagnose and service wheel bearings and seals.

14.0 PERFORM BASIC ELECTRICAL SYSTEM SERVICE--The student will be able to:

14.01 Identify and use basic electrical system test equipment.
14.02 Use basic DC electrical theory to select appropriate test procedures.
14.03 Inspect and test fusible links, circuit breakers and fuses; replace as needed.
14.04 Check electrical circuits with a test light; determine needed repairs.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 5
Course Number: 8766150
Course Credit: 1

15.0 DIAGNOSE, SERVICE, AND REPAIR COOLING SYSTEMS--The student will be able to:

15.01 Identify the components of air and liquid cooling systems by name and function.
15.02 Diagnose, service and repair air cooling systems.
15.03 Diagnose, service and repair liquid cooling systems.

16.0 DIAGNOSE, REPAIR AND RECONDITION BASIC ENGINE COMPONENTS--The student will be able to:

16.01 Explain the engine operating theory.
16.02 Recondition a two-stroke engine top-end.
16.03 Diagnose and repair oil-delivery systems.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 6
Course Number: 8766160
Course Credit: 1

17.0 APPLY INDUSTRY-RELATED SCIENCE TO MOTORCYCLE SERVICE--The student will be able to:

17.01 Explain how temperature extremes, chemical reactions and moisture content affect motorcycle systems.
17.02 Draw conclusions or make inferences from data.
17.03 Identify health-related problems that may result from exposure to work-related chemicals and hazardous materials and know the proper precautions required for handling such materials.
17.04 Measure pressure in terms of pounds per square inch (PSI).

18.0 DIAGNOSE, SERVICE, AND REPAIR FRAMES AND SUSPENSION--The student will be able to:

18.01 Service and repair front suspension.
18.02 Service and repair rear suspension.
18.03 Inspect, remove, and replace frames.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 7
Course Number: 8766170
Course Credit: 1

19.0 DIAGNOSE, SERVICE, AND REPAIR WHEELS, TIRES AND BRAKES--The student will be able to:

19.01 Diagnose and repair mechanical disc and drum brake systems and components.
19.02 Diagnose and repair hydraulic disc and drum brake systems and components.
19.03 Diagnose and repair ABS braking systems and other advanced stopping systems.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 8
Course Number: 8766180
Course Credit: 1

20.0 DIAGNOSE, SERVICE, AND REPAIR DRIVE TRAINS--The student will be able to:

20.01 Diagnose, service, and repair primary-drive systems.
20.02 Diagnose, service, and repair clutch assemblies.
20.03 Diagnose, service, and repair transmissions.
20.04 Diagnose, service, and repair shaft drives.
20.05 Diagnose and repair kickstart systems.

21.0 DIAGNOSE, SERVICE, AND REPAIR FUEL AND EXHAUST SYSTEMS--The student will be able to:

21.01 Identify components and operation of carburetion and fuel-injection systems.
21.02 Diagnose, service and repair slide-type carburetors.
21.03 Diagnose, service and repair constant-velocity-type (CV-type) carburetors.
21.04 Diagnose, service and repair fixed-venturi carburetors.
21.05 Diagnose, service and repair fuel-injection systems.
21.06 Diagnose, service and repair exhaust systems.
21.07 Diagnose, service and repair other fuel-delivery-system components.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 9
Course Number: 8766190
Course Credit: 1

22.0 TROUBLESHOOT AND REPAIR ELECTRICAL-SYSTEM COMPONENTS--The student will be able to:

22.01 Utilize electrical test equipment to isolate defective components.
22.02 Read and interpret a wiring diagram.
22.03 Troubleshoot and repair wiring harnesses.
22.04 Troubleshoot and repair battery/points ignition systems.
22.05 Troubleshoot and repair battery-operated electronic ignition systems.
22.06 Troubleshoot and repair magneto-ignition systems.
22.07 Troubleshoot and repair capacitive-discharge-ignition (CDI) systems.
22.08 Troubleshoot and repair half-wave and full-wave charging systems.
22.09 Troubleshoot and repair three-phase charging systems.
22.10 Troubleshoot and repair electrical starter systems.
22.11 Troubleshoot and repair direct current (DC) generators.
22.12 Troubleshoot and repair warning systems.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Motorcycle Service 10
Course Number: 8766200
Course Credit: 1

23.0 TUNE UP MOTORCYCLES--The student will be able to:

23.01 Diagnose driveability problems.
23.02 Adjust the cam chain tension.
23.03 Adjust the valve clearances.
23.04 Replace the ignition points, condenser, and spark plugs.
23.05 Check and set the ignition timing.
23.06 Adjust the carburetor and service the fuel-delivery systems.
23.07 Service the air-filtration systems.
23.08 Service and diagnose batteries.
23.09 Service the lubrication systems.

24.0 DIAGNOSE, REPAIR, AND RECONDITION ENGINES--The student will be able to:

24.01 Explain the engine operating theory.
24.02 Recondition a single-cylinder four-stroke engine top-end.
24.03 Recondition a multi-cylinder four-stroke engine top-end.
24.04 Recondition a two-stroke engine top-end.
24.05 Rebuild a four-stroke head.
24.06 Recondition a single-cylinder four-stroke engine bottom-end.
24.07 Recondition a multi-cylinder four-stroke engine bottom-end.
24.08 Recondition a two-stroke engine bottom-end.
24.09 Rebuild a built-up crankshaft.
24.10 Service a plain-bearing crankshaft.
24.11 Diagnose and repair electric-starter drive systems.
24.12 Diagnose and repair oil-delivery systems.

25.0 DEMONSTRATE THE PROPER USE OF INDUSTRY TOOLS AND EQUIPMENT--The student will be able to:

25.01 Utilize oxyacetylene welding outfit for heating, welding, brazing and cutting.
25.02 Use heating devices to perform service procedures.
25.03 Recondition cylinders.

26.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

26.01 Define entrepreneurship.
26.02 Describe the importance of entrepreneurship to the American economy.
26.03 List the advantages and disadvantages of business ownership.
26.04 Identify the risks involved in ownership of business.
26.05 Identify the necessary personal characteristics of a successful entrepreneur.
26.06 Identify the business skills needed to operate a small business efficiently and effectively.