

INFORMATION DOCUMENT

REORGANIZED PROGRAMS SUBDIVIDED INTO COURSES

**IMPLEMENTATION: SEPTEMBER 1988
MOTORIZED EQUIPMENT
840-000**

SECONDARY SCHOOL

Québec 

PROGRAM: AUTOMOTIVE BODY REPAIR AND REPAINTING

SSVC: 30 credits - 450 hours

LIST OF COURSES

PROGRAM CODE: 1530

First Semester: 30 credits - 450 hours	Hours	Credits
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847 211 Tools and Equipment	15	1
847 222 Technical Information	30	2
847 235 Making Parts	75	5
847 243 Body Components	45	3
847 253 Windows - Ornamentation	45	3
847 262 Drawing	30	2
847 276 Welding	90	6
847 288 Welded Components	120	8

Second Semester: 30 credits - 450 hours	Hours	Credits
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847 293 Patching	45	3
847 304 Reworking Sheet Metal	60	4
847 317 Finishing Sheet Metal	105	7
847 324 Electricity and Body Work	60	4
847 332 Body, Chassis Measurement	30	2
847 346 Paint Preparation	90	6
847 354 Painting	60	4

SECTOR: MOTORIZED EQUIPMENT

PROGRAM OF STUDY: AUTOMOTIVE BODY REPAIR AND REPAINTING

PROGRAM LEADING TO A SECONDARY SCHOOL VOCATIONAL CERTIFICATE (SSVC)

DURATION: 900 hours

TOTAL CREDITS: 60

TOOLS AND EQUIPMENT	(15 hours, 1 credit)
Content	Major Focuses of Evaluation

Hand Tools (841 018)	- Identifying tools and
Lifting and Handling (841 038)	equipment

TECHNICAL INFORMATION	(30 hours, 2 credits)
Content	Major Focuses of Evaluation

Vehicle Components (841 068)	- Identifying vehicles
Technical Information (847 018)	using identification
	codes

MAKING PARTS	(75 hours, 5 credits)
Content	Major Focuses of Evaluation

Making Replacement Parts (848 122)

SECTOR: MOTORIZED EQUIPMENT**PROGRAM OF STUDY: AUTOMOTIVE BODY REPAIR AND REPAINTING****PROGRAM LEADING TO A SECONDARY SCHOOL VOCATIONAL CERTIFICATE (SSVC)****DURATION: 900 hours****TOTAL CREDITS: 60**

BODY COMPONENTS	(45 hours, 3 credits)
Content	Major Focuses of Evaluation
Removal and Installation of Interior Trims (848 018)	
Removal and Installation of Body Components (848 028)	
Adjustment and Alignment of Body Components (848 038)	
WINDOWS - ORNAMENTATION	(45 hours, 3 credits)
Content	Major Focuses of Evaluation
Protective Accessories and Trims (848 068)	
Removal and Installation of Door Windows (848 078)	
Adjustment of Door Windows (848 088)	
Removal and Installation of Windshields (848 098)	
Leakproofing (848 118)	
DRAWING	(30 hours, 2 credits)
Content	Major Focuses of Evaluation
Basic Design Principles (838 418)	
Cross Sections (838 458)	
Sketches (838 448)	
Blueprint Reading (for Body Work)	

**DIRECTION
DES COMMUNICATIONS**

SECTOR: MOTORIZED EQUIPMENT

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PROGRAM LEADING TO A SECONDARY SCHOOL VOCATIONAL CERTIFICATE (SSVC)

DURATION: 900 hours

TOTAL CREDITS: 60

WELDING	(90 hours, 6 credits)
Content	Major Focuses of Evaluation
Oxyacetylene Welding of Soft Metals (801 091) Heterogenous Welding (848 368)	- Flat, autogenous welding on thin plate
WELDED COMPONENTS	(120 hours, 8 credits)
Content	Major Focuses of Evaluation
Removal of Welded Components (848 041) Installation of Welded Components (848 059) Oxyacetylene Cutting (801 178)	- Flat, braze welding on thin plate
PATCHING	(45 hours, 3 credits)
Content	Major Focuses of Evaluation
Welding Torn Sheet Metal (848 138) Sheet Metal Patching (848 141) Patching Reinforced Sheet Metal (848 158)	

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REWORKING SHEET METAL

(60 hours, 4 credits)

Content

Major Focuses of Evaluation

Stretching Sheet Metal (848 162)

Reworking Stretched Sheet Metal (848 178)

FINISHING SHEET METAL

(105 hours, 7 credits)

Content

Major Focuses of Evaluation

Smoothing Sheet Metal (848 182)

Finishing Sheet Metal (848 192)

ELECTRICITY AND BODY WORK

(60 hours, 4 credits)

Content

Major Focuses of Evaluation

Electrical Principles

Electrical Circuits (841 142)

- Mounting lighting circuits on a board
- Using a voltmeter, ammeter and ohmmeter to check circuits at various points

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DURATION: 900 hours

TOTAL CREDITS: 60

BODY, CHASSIS MEASUREMENT	(30 hours, 2 credits)
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Content	Major Focuses of Evaluation
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Inspection of Chassis Frame and
Unitized Body (848 228)
Dimensional Inspection of Body (848 238)

PAINT PREPARATION	(90 hours, 6 credits)
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Content	Major Focuses of Evaluation
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Sanding (848 249)
Masking (848 258)
Finishing Equipment (848 268)
Handling Spray Equipment (848 278)
Primer Application(848 288)

PAINTING	(60 hours, 4 credits)
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Content	Major Focuses of Evaluation
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Enamel Application (848 291)
Preparing for Delivery (848 338)

PROGRAM OF STUDY: COMMERCIAL VEHICLE MECHANICS

A.V.S. 48 credits - 720 hours

Prerequisites: 347-500, 847-500, 350-500, 850-500, 1242, 1239, 1742, 1739

LIST OF COURSES

PROGRAM CODE: 1977

			Hours	Credits
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858	017	Clutches and Transmissions	105	7
858	027	Rear Axle Assemblies and Drive Shafts	105	7
858	036	Tires	90	6
858	042	Speed Controls	30	2
858	053	Wheels, Suspension and Alignment	45	3
858	065	Practicum	75	5

			Hours	Credits
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858	077	Hydraulic Systems	105	7
858	085	Torque Converters and Automatic Transmissions	75	5
858	092	Heating and Air Conditioning	30	2
858	104	Repairing	60	4

SECTOR: MOTORIZED EQUIPMENT

PROGRAM: COMMERCIAL VEHICLE MECHANICS

PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)

DURATION: 720 hours

TOTAL CREDITS: 48

CLUTCHES & TRANSMISSIONS	(105 hours, 7 credits)
Content	Main Focuses of Evaluation
Heavy-Duty Friction Clutches 820-679	- Removing and installing safely - Checking steering wheel - Checking discs and plates - Adjusting on the vehicle
Manual Transmissions, Power Take-offs and Transfer Cases 820-681	- Removing and installing safely - Main shaft gear assembly - Checking parts - Checking air pressure
REAR AXLE ASSEMBLY AND DRIVE SHAFTS	(105 hours, 7 credits)
Content	Main Focuses of Evaluation
Differential and Torque Distribution 820-683	
Rear Axle Assembly and Transaxles 820-690	- Adjusting the preload of the bearings on a differential ring gear
Drive Shafts 820-682	
TIRES	(90 hours, 6 credits)
Content	Main Focuses of Evaluation
Tires 820-503	- Adjusting an air regulator on a truck - Connecting a relay valve on a truck

SECTOR: MOTORIZED EQUIPMENT
 PROGRAM: COMMERCIAL VEHICLE MECHANICS
 PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)
 DURATION: 720 hours
 TOTAL CREDITS: 48

SPEED CONTROLS	(30 hours, 2 credits)
Content	Main Focuses of Evaluation
Motor Brakes 820-689	- Positioning an engine and adjusting correctly its motor brake
WHEELS, SUSPENSION & ALIGNMENT	(45 hours, 3 credits)
Content	Main Focuses of Evaluation
Wheels, Bearings and Tires 820-691	- Lifting truck safely - Lubricating and adjusting bearings - Inflating tires (remote control)
Suspension of Commercial Vehicles 820-68	- Lifting truck safely - Dismantling procedure - Checking spindle bolt - Installing camber casters
Steering Alignment 820-686	- Checking the convergence of the wheels - Alignment of the steering wheel - Understanding the cam angles
PRACTICUM	(75 hours, 5 credits)
Content	Main Focuses of Evaluation
Work Study Session	

SECTOR: MOTORIZED EQUIPMENT

PROGRAM: COMMERCIAL VEHICLE MECHANICS

PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)

DURATION: 720 hours

TOTAL CREDITS: 48

HYDRAULIC SYSTEMS

(105 hours, 7 credits)

Content

Main Focuses of Evaluation

Hydraulic Pressure System
820-507

- Symbols, principles:
flow, pressure, volume,
etc.

Hydraulic Systems Control 820-510

- Understanding a circuit
- Identifying connections
and tubing
- Identifying the different
controls
- Adjusting the different
controls

Work Units of Hydraulic
Systems 020-511

- Checking pressure
- Understanding hydraulic
engines
- Checking the operation
(of the system)
- Calculating the power of
a cylinder

TORQUE CONVERTERS & AUTOMATIC TRANSMISSIONS

(75 hours, 5 credits)

Content

Main Focuses of Evaluation

Torque Converters and Automatic
Transmissions 820-680

- Removal and installation
- Checking the steering
wheel and drive disc
- Adjusting the selector
and modulator
- Checking pressures

SECTOR: MOTORIZED EQUIPMENT
 PROGRAM: COMMERCIAL VEHICLE MECHANICS
 PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)
 DURATION: 720 hours
 TOTAL CREDITS: 48

HEATING AND AIR CONDITIONING		(30 hours, 2 credits)
Content		Main Focuses of Evaluation
Heating and Air Conditioning 820-696		- Filling an air-conditioning system with coolant
REPAIRING		(60 hours, 4 credits)
Content		Main Focuses of Evaluation
Repairing and Performance Tests after Repairs 820-696 Service and Maintenance 820-692		- Manoeuvring a truck safely in a testing area

PROGRAM OF STUDY: AUTOMOBILE MECHANICS I

A.V.S. 60 credits - 900 hours

Prerequisites: 347-500, 847-500, 1239, 1739

LIST OF COURSES

PROGRAM CODE: 1981

First Semester: 30 credits - 450 hours			Hours	Credits
856	018	Engines and Filtering Systems	120	8
856	028	Carburetion, Injection and Turbo-Superchargers	120	8
856	032	Automobile Diesel Engines	30	2
856	044	Heating and Air Conditioning	60	4
856	058	Electrical Systems and Accessories	120	8
Second Semester: 30 credits - 450 hours			Hours	Credits
856	068	Automatic Transmissions	120	8
856	073	Transmission Diagnosis and Repair	45	3
856	082	Power Steering	30	2
856	098	Steering and Suspension	120	8
856	103	Brake System Diagnosis and Repair	45	3
856	116	Practicum	90	6

SECTOR: MOTORIZED EQUIPMENT

PROGRAM OF STUDY: AUTOMOBILE MECHANICS I

PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)

DURATION: 900 hours

TOTAL CREDITS: 60

ENGINES AND FILTERING SYSTEMS (120 hours, 8 credits)	
Content	Major Focuses of Evaluation
Filtering System Diagnosis and Repair 856-029 (30 hrs.)	- Explaining diagnostic procedures for engine and filtering system problems
Engine Diagnosis and Repair 856-014 (90 hrs.)	- Servicing engines and filtering systems after diagnosis
CARBURETION, INJECTION AND TURBO-SUPERCHARGERS (120 hours, 8 credits)	
Content	Major Focuses of Evaluation
Carburetor Diagnosis and Repair 856-049 (30 hrs.)	- Identifying turbocharger parts, and their functions and roles
Fuel Injection and Turbochargers 856-039 (90 hrs.)	- Checking fuel-injection system parts - Servicing carburetor parts
AUTOMOBILE DIESEL ENGINES (30 hours, 2 credits)	
Content	Major Focuses of Evaluation
Automobile Diesel Engines 856-059 (30 hrs.)	- Identifying the characteristics of diesel engines - Servicing a fuel-injection system

SECTOR: **MOTORIZED EQUIPMENT**
PROGRAM OF STUDY: **AUTOMOBILE MECHANICS I**
PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)
DURATION: 900 hours
TOTAL CREDITS: 60

HEATING AND AIR CONDITIONING	(60 hours, 4 credits)
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Content	Major Focuses of Evaluation
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Heating and Air Conditioning 856-063 (60 hrs.)	- Identifying parts of different heating, ventilation and air-conditioning systems and their functions - Servicing different heating, ventilation and air-conditioning systems
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ELECTRICAL SYSTEMS AND ACCESSORIES	(120 hours, 8 credits)
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Content	Major Focuses of Evaluation
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Electrical Systems Diagnosis and Repair 856-084 (90 hrs.) Accessories 856-079 (30 hrs.)	- Identifying electrical system problems - Servicing electrical systems
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AUTOMATIC TRANSMISSIONS	(120 hours, 8 credits)
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Content	Major Focuses of Evaluation
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Automatic Transmissions 856-094 (120 hrs.)	- Identifying automatic transmission parts, and their roles and operation - Servicing different types of automatic transmissions
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SECTOR: **MOTORIZED EQUIPMENT**
 PROGRAM OF STUDY: **AUTOMOBILE MECHANICS I**
 PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)
 DURATION: **900 hours**
 TOTAL CREDITS: **60**

TRANSMISSION DIAGNOSIS AND REPAIR	(45 hours, 3 credits)
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Content	Major Focuses of Evaluation
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Transmission Diagnosis and Repair 856-112 (45 hrs.)	- Servicing transmission parts
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POWER STEERING	(30 hours, 2 credits)
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Content	Major Focuses of Evaluation
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Power Steering 856-129 (30 hrs.)	- Checking and adjusting power steering unit parts - Servicing different power steering unit parts
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STEERING AND SUSPENSION	(120 hours, 3 credits)
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Content	Major Focuses of Evaluation
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Steering and Suspension Diagnosis and Repair 856-142 (40 hrs.)	- Explaining diagnostic procedures for steering and suspension problems
Steering Alignment (80 hrs.)	- Servicing steering and suspension parts - Identifying parts of front-wheel and rear-wheel drive lines, and their roles and interrelationship - Adjusting automotive steering alignment

SECTOR: MOTORIZED EQUIPMENT

PROGRAM OF STUDY: AUTOMOBILE MECHANICS I

PROGRAM LEADING TO AN ATTESTATION OF VOCATIONAL SPECIALIZATION (AVS)

DURATION: 900 hours

TOTAL CREDITS: 60

BRAKE SYSTEM DIAGNOSIS AND REPAIR

(45 hours, 3 credits)

Content

Major Focuses of Evaluation

Brake System Diagnosis and Repair
856-152 (45 hrs.)

- Service brake system
parts

PRACTICUM

(90 hours, 6 credits)

Content

Major Focuses of Evaluation

Work Study Session in an Automotive Shop
856-164 (90 hrs.)

