

DEPARTMENT OF TRANSPORTATION TRADES

COURSE OUTLINE – WINTER 2023, SEMESTER 1

JANUARY 3 – MARCH 24, 2023

MCM 250 SHOP II – 5 CREDITS 240 HOURS

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR: Darcy Hudak **PHONE:** 780.835.6747
OFFICE: FM2 - 120 **E-MAIL:** dhudak@nwpolytech.ca
OFFICE HOURS: 8 AM to 4:30 PM

CALENDAR DESCRIPTION: Subjects covered in Shop II include: charging, starting and ignition systems, four-stroke tuning, four-stroke top end diagnosis, inspection and reconditioning procedures, transmissions, two-stroke and roller bearing crankshaft inspection and repair, plain bearing crankshaft inspection and repair and fuel injection.

PREREQUISITE(S)/COREQUISITE: MCM 150

REQUIRED TEXT/RESOURCE MATERIALS:

Alberta Apprenticeship and Industry Training Individual Learning Modules

Shop Procedures Package:

090101aA	Communication – Part A
090101aB	Communication – Part B
090101b	Measuring Tools
090101c	Specialty Hand Tools
090101d	Fastening Devices
090101e	Safety
150101n	Hand Grinding Machines
150101o	Drilling Machines
190101f	Oxy-Fuel Equipment, Heating and Cutting

Other Textbooks:

Modern Motorcycle Technology (text and workbook)

Edward ABDO – Delmar

Other Required Supplies:

- pencils
- pens
- 3-ring binder (1")
- safety glasses (MANDATORY)
- steel toe footwear (CSA approved – highly recommended!)
- Welding Gloves (MANDATORY)
- smock/coverall (OPTIONAL)
- Skill/Task Sheets (provided by Instructor)
- notepad (for Shop use)

Note: This list has been prepared for safe participation in a workshop environment.
It is a minimum guideline only.
Hearing protection will be available to students as required (from the tool room).

Apprenticeship Prior Learning Assessment Fee: \$150 fee for assessment to write 2nd Year Apprenticeship Exam in Winter, 2023 term.

DELIVERY MODE(S): Workshop projects; procedures; instructor led; hands on.

Note: NWP reserves the right to change the course delivery.

COURSE OBJECTIVES:

The Pre-Employment Motorcycle Mechanic program has been developed to provide students with entry level skills in the motorcycle mechanic technologies and provide pre-apprenticeship opportunities for those who may be interested in pursuing apprenticeship.

Motorcycle Mechanic Training Goal

I. PROFICIENT

- A. A thorough competence derived from training and practice (skilled).
 - 1. COMPETENCE – having suitable or adequate ability.
 - 2. ABILITY – physical and/or mental power to perform.

Well advanced in an occupation or branch of knowledge.

II. OCCUPATION

- A. An activity serving as one's regular employment.

III. PRACTICE

- A. To perform or work at repeatedly to become proficient (acquire skill).
 - 1. SKILL – specialized knowledge and ability.
- B. To do repeated exercises for proficiency.
- C. To pursue a profession actively.
 - 1. PROFESSION – occupation requiring advanced education.

- The goal of apprenticeship training is to develop a competent journeyman through a combination of on-the- job and technical training.

LEARNING OUTCOMES:

TRANSFERABILITY: None.

EVALUATIONS:

Areas of Evaluation	Percentage of Total Course Mark
Practical Tests	40%
Quality of Work	20%
Productivity	10%
Attitude Towards Daily Work	5%
Ability to Follow Instructions	5%
Daily Clean Up	5%
Professionalism	5%
Attendance	10%

GRADING CRITERIA:

Students must complete all required courses with a grade point of 2.0 or higher; a percentage of 63% or higher; a "C" letter grade or higher, and no failing grades. A student must pass each course individually in order to receive a Certificate of Achievement in Pre-Employment Motorcycle Mechanic.

Absence for tests or assignment missed will result in a score of zero.

A grade of less than 45% on a practical exam will result in an opportunity to retest at a mutually agreed time, within the original deadline. A 20% reduction will apply to all retests.

NORTHWESTERN POLYTECHNIC			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A⁻	3.7	80 – 84	FIRST CLASS STANDING
B⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C⁻	0.0	60 – 62	FAIL
D⁺	0.0	55 – 59	
D	0.0	50 – 54	
F	0.0	0 – 49	
WF	0.0	0	FAIL, withdrawal after the deadline

COURSE SCHEDULE/TENTATIVE TIMELINE:

MCM 200/250

12 Weeks

30.0 Hours Per Week

360 Hours

Week 1	4-Stroke Tune-Up
Week 2	4-Stroke Diagnosis
Week 3	4-Stroke Top End Disassembly and Inspection
Week 4	Clutch and Transmission Inspection and Service
Week 5	Crankshaft Inspection and Service
Week 6	Charging Systems
Week 7	Electric Start and Ignition Systems
Week 8	Practical Testing
Week 9	4-Stroke Reconditioning
Week 10	4-Stroke Reassembly
Week 11	Fuel Injection Introduction
Week 12	Review, Shop Wrap-Up and Final Exam

SKILL/TASK LIST – SESSION 2

- | | |
|---|---|
| 01. 4-Stroke Compression Test (2 models) | 19. Top End Reassembly |
| 01a. 4-Stroke Compression Test | 20. Engine Start-Up |
| 02. 4-Stroke Cylinder Leakage Test (2 models) | |
| 02a. 4-Stroke Cylinder Leakage Test | 21. Transmission Inspection |
| 03. R&R Dual Ignition Point (Timing and Dwell)
<i>*Optional</i> | 22. Oil Pump Inspections |
| 04. Adjust Valve Clearance (Threaded single) | |
| 05. Adjust Valve Clearance (Threaded double) | 23. Clutch Inspections |
| 06. Adjust Valve Clearance (Shim O.B.) | 24. Check Primary Gear Backlash |
| 07. Adjust Cam Chain <i>*Optional</i> | 25. Adjust Clutch Release (3 models) |
| 07a. Adjust Primary Chain | 25a. Adjust Clutch Release |
| 08. Change Oil and Filter | 25b. Adjust Clutch Release |
| 09. Check Oil Pressure Roller Brg. | |
| 09a. Check Oil Pressure Plain Brg. | 26. 2-Stroke Single Cylinder Crankshaft |
| 10. Synchronize Dual Carbs | |
| 11. Synchronize Four Carbs <i>*Optional</i> | 27. Charging System Inspection 1Ø <i>*Optional</i> |
| | 28. Charging System Inspection 3Ø (2 models) |
| 12. Pre-Disassembly Diagnosis | 28a. Charging System Inspection 3Ø |
| 13. Engine Removal | |
| | 29. Electric Start – Mechanical Inspection |
| 14. 4-Stroke Top End Disassembly | 30. Electric Start – Voltage Drop (2 models) |
| 15. Inspect Cylinder Head Assembly | 30a. Electric Start – Voltage Drop |
| 16. Inspect Cylinder and Piston Assembly | |
| | 31. Test Ignition Coil (Static) (2 models) |
| 17. Recondition Valve and Seat | 31a. Test Ignition Coil (Static) |
| 18. Deglaze 4-Stroke Cylinder | 32. Test Ignition Coil (Dynamic) (2 models) |
| | 32a. Test Ignition Coil (Dynamic) |
| | 33. Test Condenser (Static and Dynamic) |

 **Remember, competency improves with practice!**

STUDENT RESPONSIBILITIES:

Following the guidelines in “Student Rights and Responsibilities” in the NWP College calendar assist us all in maintaining an adult learning environment. Please refer to the Student Rights and Responsibilities policy in the Northwestern Polytechnic Calendar or at www.nwpolytech.ca/downloads/documents/StudentRightsandResponsibilities.pdf.

PROFESSIONAL CONDUCT

Students are in a public facility and will be expected to act accordingly. This includes attitude towards others and refraining from use of offensive language. Everyone is entitled to experience a cordial environment. Remember, you are responsible for the attitude you bring to class every day!

NWP Fairview Campus property is public domain; therefore, Alberta traffic rules and laws apply to all parking lots and roadways (enforced by R.C.M.P.).

NWP TRAINING UNITS ARE NOT TO BE RIDDEN AT ANY TIME!

Helmet usage is mandatory, and insurance and licensing requirements will be met by all students involved in operating powered vehicles.

ATTENDANCE

Lack of regular attendance will have a bearing on student evaluation. Regular attendance and punctuality in all courses are mandatory. Failure to maintain the necessary level of attendance may result in the student being withdrawn from the program.

Certain unavoidable absences may be excused by the instructor(s). In such cases the student shall make every effort to inform the instructor(s) prior to an absence. If this is not possible the student shall at the earliest opportunity (next regularly scheduled class) provide a descriptive note explaining the absence. Failing to provide a note or acceptable explanation at the beginning of the next attended class will result in an unauthorized absence. Any missed information is the student’s responsibility!

Absence for tests or assignment missed will result in a score of zero.

Absence reporting is solely the student’s responsibility!

Based on a percentage of the total hours in a program involving unauthorized absences (i.e. MCM 100/150 = 480 hours).

1. 2.5% of total hours: Student will be given a verbal warning by the Instructor
(12 hours) (to be recorded).
2. 3.75% of total hours: Student will be advised in writing by the Program Leader
(18 hours) or designate.
3. 5.0% of total hours: Student may be withdrawn from the program!
(24 hours)

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at <https://www.nwpolytech.ca/programs/calendar/> or the Student Rights and Responsibilities policy which can be found at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

**Note: all Academic and Administrative policies are available on the same page.

Additional Information (Optional):