DEPARTMENT OF MOTORCYCLE AND RECREATIONAL POWERSPORTS

COURSE OUTLINE – FALL, SEMESTER 1

SM 105 Power Equipment Shop

INSTRUCTOR:	Les Ashton	**PHONE:**	780.835.6687
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OFFICE HOURS:	Monday through Friday. 9:00 a.m. – 5:00 p.m.		

PREREQUISITE(S)/COREQUISITE: None.

REQUIRED TEXT/RESOURCE MATERIALS:

Optional Textbooks:

Small Air Cooled Engines Service Manual 17th Edition	Intertec
Small AC Generator Service Manual *3rd Edition	Intertec
Chain Saw Service Manual *8th Edition	Intertec

Other Required Supplies:

- clipboard (legal size preferred)
- safety glasses (mandatory)
- coveralls (cotton) or shop coat (cotton)
- suitable shop footwear; not open-toed; (safety footwear recommended)
- pencils
- welding gloves
- welding beanie
- wireless enabled laptop computer (optional)

CALENDAR DESCRIPTION: Power Equipment Shop is a hands-on reinforcement and application of the topics covered in SM 100. Students will work with a variety of small engines. In doing so, they learn the usage of specialty tools, measuring tools, and basic hand tools all supplied by the program. Novices will benefit from the "build from the ground up" approach and experienced students will appreciate the opportunity to build a competitive engine and evaluate its performance on the dynamometer.

Delivery Option – Fairview Campus Only

CREDIT/CONTACT HOURS: 9.5 credits; 20 hours per week; 8 weeks; 160 hours.

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

OBJECTIVES: The Outdoor Power Equipment Technician program has been developed to provide students with entry level skills in the outdoor power equipment technologies.

TRANSFERABILITY: None.

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 Outdoor Power Equipment Technician.

GRANDE PRAIRIE REGIONAL COLLEGE			
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	
F	0.0	60 – 62	FAIL
F	0.0	55 – 59	
F	0.0	50 – 54	
F	0.0	0 – 49	
WF	0.0	0	FAIL, withdrawal after deadline

EVALUATIONS: Shop Evaluation includes guidelines listed below.

1. Application of theory to shop practices. **2.** Safety: • organization and cleanliness. • eye protection. • proper procedures. • attitude and adherence. **3.** Use of Service Manuals: • recommended procedures. • special tool usage (as available). • specific information. **4.** Completion of Exercises: • worksheets filled in. • all procedures performed. • participation of all group members. **5.** Cooperation with fellow students, instructors and supervisors.	**6.** Use of Tools and Equipment: • safety and cleanliness. • reporting damage. • proper techniques. **7.** Application of Techniques: • ability to follow instructions. • Are repeat demonstrations required? **8.** Workmanship: • quality of work performed. • proper parts request information supplied. • correct procedure usage. • service procedures performed in a logical and orderly manner. • parts shortage. • time management. **9.** Request assistance when needed/ offer assistance as required.

STUDENT RESPONSIBILITIES:

Please refer to the Student Rights and Responsibilities policy in the Grande Prairie Regional College Calendar or at www.gprc.ab.ca/downloads/documents/StudentRightsandResponsibilities.pdf.

ATTENDANCE REQUIREMENTS:

In addition, attendance will be graded as follows:

- Unavoidable absences should be relayed to the instructor prior to or immediately after the day in concern. If the instructors know the situation, it is easier to be compassionate to individual needs. If you are unable to contact the instructor, a message left at the Mech. 6 Tool Room will alert us to unexpected absences (780.835.6744).
- Note: Attendance is monitored for both shop and theory.
- Student attendance is recorded by the hour.
- If a student is late by 15 minutes = one hour missed.
- Students who are chronically late must meet with the Instructor or the Chair of the program.
- Chronic lateness will not be permitted.

- If six hours are missed the student must meet with the Instructor. A written and signed record of the meeting will be completed. A copy will be given to the student and the instructor will place a copy on the student's file.
- If 12 hours are missed the student must meet with the Chair of the program. A written and signed record of the meeting will be completed. A copy will be given to the student, the instructor and the Chair.
- If 18 hours are missed the student must meet with the Chair of the program again. Disciplinary action will be taken. Such disciplinary action may include, but is not limited to, a penalty assessed to the student's marks, placed on probation, or termination from the program.
- Absence for tests will result in a score of zero.

STATEMENT ON PLAGIARISM AND CHEATING:

Please refer to www.gprc.ab.ca/downloads/documents/Student%20Misconduct%20Plagiarism%20and%20Cheating.pdf regarding plagiarism, cheating and the resultant penalties. These are serious issues and will be dealt with severely.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week 1 Use of hand tools and power tools, fastener identification, drilling and tapping, torque wrench use, broken screw extraction, thread repair using Heli-coil insert, drill bit sharpening.

Week 2 Safe operation of welding and cutting equipment. Introduction to the set up and operation of MIG welding equipment.

Week 3 4-Stroke disassembly and reassembly procedures, parts identification, special tools usage, precision measurement, model identification, computer assisted parts and service look up.

Week 4 4-Stroke engine disassembly, inspection and evaluation procedures. Reconditioning procedures including valve grinding and cutting, seat cutting using Neway cutters, valve guide replacement, cylinder honing.

Week 5 4-Stroke engine reconditioning and assembly completion, carburetor disassembly and cleaning, tune up procedures.

Week 6 Diesel engine disassembly and familiarization, high pressure fuel system disassembly and inspection, pump timing procedure, diesel engine diagnostic procedures, tune up.

Week 7 Two-stroke chain saw disassembly and inspection, reassembly and pressure testing. Diaphragm carburetor disassembly and adjustment. Trimmer and brush cutter familiarization. Saw chain sharpening by machine grinding.

Week 8 Portable generator component identification and testing, adjustments procedures. Meter usage including volts AC and DC, frequency, ohms, watts, amps. Reading schematic diagrams.