DEPARTMENT OF ELECTRICAL/MILLWRIGHT

COURSE OUTLINE – FALL 2012 – SEPTEMBER 4 – DECEMBER 21, 2012

MW101 MILLWRIGHT/MACHINIST THEORY – 8.5 CREDITS 128 HOURS

INSTRUCTOR: Peter Gerzanich **PHONE:** 780-539-2207
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OFFICE HOURS: 8:00 – 4:15

PREREQUISITE(S)/COREQUISITE: None

REQUIRED TEXT/RESOURCE MATERIALS: Alberta Apprenticeship and Industry Training Millwright/Machinist Individual Learning Modules First Year

CALENDAR DESCRIPTION: This course is designed to introduce the students to the apprenticeship system, the Millwright & Machinist industry, the types of equipment used and the terminology of the trade. Topics to be included are: apprenticeship orientation, safety, grinders, power saws, lathes, drilling and milling, limits and fits, and metallurgy.

CREDIT/CONTACT HOURS: 8.5 credits, 8 hours per week for 16 weeks

DELIVERY MODE(S): Instructor led classroom theory.

OUTCOME:

- **Describe safe work practices and environmental protection.**
- **Identify and describe fire classes, extinguishers, prevention, detection, cleanup and restoration.**
- **Apply the requirements of WHMIS to the work site.**
- **Identify and describe types and applications of ladders and scaffolding.**
- **Define the limits, tolerances, allowances and fits of various machine parts in both imperial and metric SI (International System of Units) terms.**
- **Describe the use of measuring tools for the millwright trade.**
- **Describe layout procedures and identify layout tools.**
- **Identify and describe use of non-cutting hand tools.**
- **Describe the correct use and maintenance of cutting type hand tools.**
- **Identify metric and imperial threaded fasteners and describe typical applications.**
- **Explain non-threaded fasteners and locking devices.**
- **Explain the installation and removal of fasteners.**
- **Describe the safe use and maintenance of grinders.**
- **Describe metal and wood cutting saws used in industry.**
- **Describe the procedures for operating drilling machines.**
- **Describe the safe use and maintenance of milling machines.**
- **Describe the sizing, parts, accessories and attachments of lathe types**
- **Describe the safe use and maintenance of engine lathes.**
- **Apply taper systems to machining operations.**
- **Apply lubricants to reduce friction and increase efficiency.**
- **Select the correct type of metal for an application.**

TRANSFERABILITY: N/A

GRADING CRITERIA:

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**	
C^{-}	**1.7**	**60 – 62**	
D^{+}	**1.3**	**55 – 59**	**MINIMAL PASS**
D	**1.0**	**50 – 54**	
F	**0.0**	**0 – 49**	**FAIL**
WF	**0.0**	**0**	**FAIL, withdrawal after the deadline**

EVALUATIONS:

Mid Term #1 30%

Mid Term #2 30%

Final Exam 40%

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:

Lack of regular attendance will have a bearing on student evaluation. Regular attendance and punctuality in all courses is mandatory. Failure to maintain the necessary level of attendance may result in the offending student being withdrawn from the course. Certain unavoidable absences may be excused by the instructor. In such cases the student shall make every effort to inform the instructor prior to being absent. Absence from class must fall into the following categories to be excusable:

- **Severe family or personal illness.**
- **Bereavement.**
- **Road/weather conditions.**
- **Pre-arranged or pre-approved absence (to be approved PRIOR to absence).**

Students who accumulate 30 hours of absence within the program will be placed on academic probation. If attendance continues to be a problem, program staff will consider action on a case by case basis. Late entry to class will be considered 1.5 hours late.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

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

COURSE SCHEDULE/TENTATIVE TIMELINE: 8 hours per week for 16 weeks

WEEKS	MODULE # & DESCRIPTION
1	Registration 160101c WHMIS 16101a General Safety & Alignment Assignment #1 – Handout
2	160102b Measuring Tools 150101d Angular Measuring Tools 160102d Precision Measuring Tools 160102a Measurement Basics
3	Overview of Lathes 160102a Measurement Basics 160102c Layout Alignment Assignment #1 – Due
4	Term Test #1 160103b Bench Work-Hand Held Cutting Tools
5	160103a Bench Work-Non Cutting Hand Tools 160106a Drilling 160105a Grinders
6	160106b Milling 150101l Taper Systems 150101m Machine Lubrication & Cutting Fluids Term Test #2
7	160106c Lathe Construction & Accessories 160106d Lathe Operations 160101b Fire Safety 150101e Inspection Gauges 160105b Power Saws
8	160107a Metallurgy Review Final Exam
9	160108b Rim & Face Shaft Alignment
10	160108b Rim & Face Shaft Alignment

11	**160108a Grouting, Leveling & Anchoring**
12	**160109a Rigging Procedures**
13	**150101j Screw Thread Measuring & Gauging** **Mid-Term Exam**
14	**160104b Non Threaded Fasten & Locking Devices** **160104c Installation & Removal of Fasteners**
15	**160101d Ladders & Scaffolds**
16	**160109b Cranes & Hoists** **150102b Oxyacetylene Equipment** **Final Exam**