Prepared: Cam Pucci Approved: Corey Meunier

Course Code: Title	MCH134: MATERIALS AND FASTENERS
Program Number: Name	4039: MECH. ENG. TN-MANUFA
Department:	MECHANICAL TECHNIQUES PS
Semester/Term:	17F
Course Description:	To provide students with a working knowledge of the theory behind the procedures that is used in the making and working with carbon steels, aluminum and its alloys, and other construction materials as well as knowledge and applications of fasteners. Practical lab and shop activities will be used to enhance and or demonstrate theoretical concepts where possible.
Total Credits:	2
Hours/Week:	2
Total Hours:	32
Vocational Learning Outcomes (VLO's): **Please refer to program web page for a complete listing of program outcomes where applicable.**	#1. Complete all work in compliance with current legislation, standards, regulations and guidelines. #3. Comply with current health and safety legislation, as well as organizational practices and procedures. #5. Use current and emerging technologies to support the implementation of mechanical engineering projects. #9. Manufacture, assemble, maintain and repair mechanical components according to required specifications. #10. Verify the specifications of materials, processes and operations to support the design and production of mechanical components.
Essential Employability Skills (EES):	#6. Locate, select, organize, and document information using appropriate technology and information systems. #7. Analyze, evaluate, and apply relevant information from a variety of sources. #9. Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. #10. Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 50%, D
Other Course Evaluation & Assessment Requirements:	Tests exams assignments labs presentations.

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Grade
Definition Grade Point Equivalent
A+ 90 – 100% 4.00
A 80 – 89%
B 70 - 79% 3.00
C 60 - 69% 2.00
D 50 – 59% 1.00
F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.
S Satisfactory achievement in field /clinical placement or non-graded subject area.
U Unsatisfactory achievement in field/clinical placement or non-graded subject area.
X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR Grade not reported to Registrar`s office.
W Student has withdrawn from the course without academic penalty.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Assignments	25%
Final Test	15%
Student Performance Attendence	10%
Term Tests	50%

Books and Required Resources:

Millwright Manual of Instruction by Michener
Publisher: Government of British Colombia

Millwright Manual of Study Guide by QPBC
Publisher: Ministry of Finance
ISBN: 7960002055

Course Outcomes and Learning Objectives:

Course Outcome 1.

Understand Metals and Alloys

Learning Objectives 1.

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Identify and describe properties of metals and alloys
Identify and describe the effects of temperature on metals and alloys.
Perform assignments to reinforce this knowledge

Course Outcome 2.

Define the following properties of metals and alloys

Learning Objectives 2.

- Define and describe each of the following mechanical and physical .properties and / or terms:

o Elasticity
o Yield Point / Strength
o Tensile ,Compressive, Shear, Bearing strength
o Conductivity
o Corrosion
o Ductility
o Malleability
o Hardness
o Impact Strength
o Temperature effects
Assignment

Course Outcome 3.

Describe the purpose for adding the following to steel:

Learning Objectives 3.

- Carbon
- Sulphur
- Phosphorus
- Silicon
- Manganese
- copper

Perform a class presentation that describes process

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	Course Outcome 4. Identify and describe the uses of non-metallic materials: **Learning Objectives 4.** • Identify the types, applications and qualities of fasteners including o Unified - American - National - Acme o Metric and Pipe thread systems Identify and select bolts, nuts, clips, chemical fasteners and adhesives as well as their potential use and application Describe methods of securing machinery and components using bolts, anchors, fasteners, grouting and epoxy resins Perform practical and theory assignments to reinforce this knowledge
Date:	Friday, September 1, 2017
	Please refer to the course outline addendum on the Learning Management System for further information.