



## COURSE OUTLINE: MTH151 - MATHEMATICS

Prepared: Mathematics Department

Approved: Bob Chapman, Chair, Health

| <b>Course Code: Title</b>   | MTH151: MATHEMATICS   |                  |  |   |   |                  |  |
|---|---|------------------|--|---|---|------------------|--|
| <b>Program Number: Name</b>   | 4040: MACHINE SHOP  |                  |  |   |   |                  |  |
| <b>Department:</b>  | MATHEMATICS   |                  |  |   |   |                  |  |
| <b>Semesters/Terms:</b>   | 20F   |                  |  |   |   |                  |  |
| <b>Course Description:</b>  | In this course, emphasis will be placed on teaching mathematics at a level that will help the student in the Machining trade. Some theoretical concepts and topics in algebra, geometry and trigonometry will be covered. These concepts and topics will be reinforced by the use of practical problems to make the current topic relevant to the student's needs.  |                  |  |   |   |                  |  |
| <b>Total Credits:</b>   | 3   |                  |  |   |   |                  |  |
| <b>Hours/Week:</b>  | 3   |                  |  |   |   |                  |  |
| <b>Total Hours:</b>   | 45  |                  |  |   |   |                  |  |
| <b>Prerequisites:</b>   | There are no pre-requisites for this course.  |                  |  |   |   |                  |  |
| <b>Corequisites:</b>  | There are no co-requisites for this course.   |                  |  |   |   |                  |  |
| <b>Substitutes:</b>   | MTH127, MTH142, MTH143, MTH145  |                  |  |   |   |                  |  |
| <b>Essential Employability Skills (EES) addressed in this course:</b> | EES 3 Execute mathematical operations accurately.<br>EES 4 Apply a systematic approach to solve problems.<br>EES 5 Use a variety of thinking skills to anticipate and solve problems.<br>EES 10 Manage the use of time and other resources to complete projects.  |                  |  |   |   |                  |  |
| <b>Course Evaluation:</b>   | Passing Grade: 50%, D<br><br>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.  |                  |  |   |   |                  |  |
| <b>Books and Required Resources:</b>                                  | Calculator -<br>Sharp EL-520XTB (Available in Bookstore)  |                  |  |   |   |                  |  |
| <b>Course Outcomes and Learning Objectives:</b>                       | <table border="1"> <thead> <tr> <th>Course Outcome 1</th> <th>Learning Objectives for Course Outcome 1</th> </tr> </thead> <tbody> <tr> <td>1. Operations with Whole Numbers, Fractions, and Decimals</td> <td>1.1 Solve problems involving whole and decimal numbers including prime and composite numbers.<br/>1.2 Solve problems involving common fractions including finding lowest common denominator.<br/>1.3 Convert decimal fractions to common fractions and the reverse process.<br/>1.4 Measure and include its error factors.</td> </tr> <tr> <th>Course Outcome 2</th> <th>Learning Objectives for Course Outcome 2</th> </tr> </tbody> </table> | Course Outcome 1 | Learning Objectives for Course Outcome 1 | 1. Operations with Whole Numbers, Fractions, and Decimals | 1.1 Solve problems involving whole and decimal numbers including prime and composite numbers.<br>1.2 Solve problems involving common fractions including finding lowest common denominator.<br>1.3 Convert decimal fractions to common fractions and the reverse process.<br>1.4 Measure and include its error factors. | Course Outcome 2 | Learning Objectives for Course Outcome 2 |
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| Course Outcome 2  | Learning Objectives for Course Outcome 2  |                  |  |   |   |                  |  |

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2020-2021 academic year.



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|  |   |  |
|--|---|--|
|  | 2. Understanding measurement and Ration and Proportions | 2.1 Use direct and inverse proportion.<br>2.2 Use variation.<br>2.3 Use percent in dimensioning.<br>2.4 Utilize metric system prefix names and symbols.<br>2.5 Reduce units of measurement within systems.<br>2.6 Convert units of measurement from one system to another. |
|  | <b>Course Outcome 3</b>                                 | <b>Learning Objectives for Course Outcome 3</b>  |
|  | 3. Solving problems involving geometric shapes          | 3.1 Solve practical problems to find the areas of a triangle or quadrilateral.<br>3.2 Solve problems involving the circumference, diameter, area or tangent to a circle.<br>3.3 Compute surface areas and volumes of spheres, cylinders, cones and other solid figures.    |
|  | <b>Course Outcome 4</b>                                 | <b>Learning Objectives for Course Outcome 4</b>  |
|  | 4. Solving triangles using trigonometric ratios         | 4.1 Define the trigonometric functions.<br>4.2 Solve the missing parts of a right angle triangle using trigonometric functions.  |

**Evaluation Process and Grading System:**

| Evaluation Type | Evaluation Weight |
|-----------------|-------------------|
| Assigned Work   | 30%               |
| Tests           | 70%               |

**Date:**

August 13, 2020

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

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