Practical/Technical Mathematics -- Grade 11, 12

Adopted June 2018

Time	Concepts	The students will know:	Resources	Assessment	Standard(s)
September	Arithmetic	1) Add, subtract, multiply, divide whole numbers, fractions, and decimals 2) Memorize shop fractions to sixteenths 3) Use fraction operations to solve real-world applications 4) Identify and use graduations on a rule to 64ths 5) Round decimals 6) Convert fractions to decimals and vice-versa 7) Apply content from this unit to technical drawings	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.2.11A
October	Arithmetic Metrics	1) Determine acceptable range of measurement (tolerance) 2) Distinguish between unilateral and bilateral tolerance 3) Determine minimum and maximum measurements using tolerances 4) Convert between percent fraction and decimal 5) Use percent to solve real-world problems 6) Use arithmetic operation on signed numbers 7) Understand the correlation between powers and roots 8) Convert between metric and English measurement	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.2.11.DE 2.3.11.AC 2.2.11.A
November & December	Algebra Statistics	1) Manipulate algebraic formulas 2) Apply algebraic formulas to technical applications 3) Use ratios and proportions to solve concept applications 4) Determine control limits using statistics 5) Solving probabilities for quality control	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.8.8.A 2.2.11.A 2.6.11.G
January & February	Geometry	1) Angles and lines 2) Triangles 3) Polygons 4) Circles and Tangents 5) Pythagorean Theorem 6) Other Geometric Formulas	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.9.11.C 2.10.11.B 2.9.11.E 2.9.11.F

March	Trigonometry	1) Functions of angles 2) Right triangles 3) Applications of right triangles	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.10.11.B 2.3.11.A 2.5.11.AC
April	Trigonometry	1) Law of Sines 2) Law of Cosines	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.10.11.B
May & June	Trigonometry	1) Finding compound angles 2) Finding cutting angles for tool bits 3) Finding oblique angles	New Practical Mathematics (for metalworking trainees) book Various practical mathematics supplements from other algebra/geometry/trigonometry books or online resources.	Verbal Response Written Exams Assignments Class Participation Teacher Observation Projects/Labs Writing Oral Presentations Notebooks	2.1.11.A 2.2.11.A,E 2.3.11.A,C 2.5.11.A,C 2.8.8.A 2.9.11.C,E,F 2.10.11.B