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| **SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**  **SAULT STE. MARIE, ONTARIO**  New Logo - College BW COURSE OUTLINE | | | | | |
| **COURSE TITLE:** | TRADE CALCULATIONS | | | | |
| **CODE NO. :** | ASR105 | | **SEMESTER:** | 1 | |
| **PROGRAM:** | AIRCRAFT STRUCTURAL REPAIR | | | | |
| **AUTHOR:** | Larry Canduro | | | | |
| **DATE:** | Sept. 2012 | **PREVIOUS OUTLINE DATED:** | | | Sept. 2011 |
| **APPROVED:** | “B.Punch” | | | |  |
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| **TOTAL CREDITS:** | 2 | | | | |
| **PREREQUISITE(S):** | Ontario Secondary School Diploma | | | | |
| **HOURS: (Total)** | 32 | | | | |
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| *For additional information, please contact Brian Punch, Chair, Environment, Design and Business* | | | | | |
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| ***(705) 759-2554, Ext. 2681*** | | | | | |

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| **I.** | **COURSE DESCRIPTION:**  This course studies the rules and procedures needed to obtain a complete  understanding of modern technical mathematics as it applies to aircraft structural repair work. The participants will solve practical applied problems after studying and learning the fundamental concepts involved. |

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| **II.** | **LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:** | |
|  | Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: | |
|  | 1. | Introduction to Arithmetic |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the definitions of terms, sequence of  operations and applying the rules and procedures to problem solving  • complete assignment for discussion in class  • participate in a hands-on demonstration on the use of hand-held scientific  calculators |
|  | 2. | Common Fractions |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the following principles of common  fractions: mixed numbers, proper and improper fractions, reducing a  common fraction to its lowest terms, reducing an improper fraction,  changing a whole or mixed number to an improper fraction, finding the  lowest common denominator for two or more fractions  • complete assignment #1 for discussion in class  • listen to teacher presentation on the addition, subtraction, multiplication  and division of fractions, cancellation and complex fractions  • complete assignment #2 for discussion in class  • participate in a class discussion on a review of arithmetic and common  fractions |
|  | 3. | Decimal Fractions |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the following principles of decimal  fractions: reading numbers, changing a common fraction to a decimal  fraction and vice versa, using a table of decimal equivalents, adding,  subtracting, multiplying and dividing decimals and rounding off numbers  • complete assignment for discussion in class |
|  | 4. | Ratio and Proportion |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the principles of ratio and proportion  • complete assignment #1 for discussion in class  • listen to teacher presentation on the applications of density, specific  gravity and the conversion of units  • complete assignment #2 for discussion in class  • participate in class discussion on a review of decimal fractions and ratio  and proportion |
|  | 5. | Measurement |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the various units of measurement and  conversions between English and Metric systems, using conversion tables  • practice using conversion tables as needed to aid in problem solving  throughout ASR105 |
|  | 6. | Basic Algebra |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the addition, subtraction, multiplication  and division of signed numbers and how to solve and check simple  equations.  • apply the algebra skills learned to problem solving throughout ASR105 |
|  | 7. | Geometry |
|  |  | Potential Elements of the Performance:  • observe teacher demonstration on how to construct the various geometric  surfaces that are used for layout exercises related to aircraft structural  repair work  • work individually on constructing the layout exercises  • listen to teacher presentation on perimeter, circumference, bend layout  terms and bend allowance calculations  • complete assignments on perimeter, circumference and bend allowance  exercises for discussion in class  • listen to teacher presentation on area and volume  • complete assignment for discussion in class |
|  | 8. | Trigonometry |
|  |  | Potential Elements of the Performance:  • listen to teacher presentation on the introduction to trigonometry, the  trigonometric functions and the applications to right triangles  • complete assignment for discussion in class |
| **III.** | **TOPICS:** | |
|  | 1. | Introduction to Arithmetic |
|  | 2. | Common Fractions |
|  | 3. | Decimal Fractions |
|  | 4. | Ratio and Proportion |
|  | 5. | Measurement |
|  | 6. | Basic Algebra |
|  | 7. | Geometry |
|  | 8. | Trigonometry |
| **IV.** | **REQUIRED RESOURCES/TEXTS/MATERIALS:**  A/C 65-15A A&P Mechanics Airframe Handbook  FAA H-8083-30-ATB Aviation Maintenance Technician Handbook  Standard Aviation Maintenance Handbook  Aircraft Sheet Metal  Scientific Calculator (Available in Bookstore)  Math Set (Available in Bookstore) | |

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| **V.** | **EVALUATION PROCESS/GRADING SYSTEM:**  Written Tests (3):  Test #1 Fractions, Decimals, Ratio & Proportion and Measurement (20%)  Test #2 Geometry – Bend Calculations (50%)  Test #3 Trigonometry – Bend Calculations (30%)  Notes:  1/ Students in the Aircraft Structural Repair Program require a  minimum of seventy (70) percent in a course to obtain a passing  grade. This equates to a “B” grade.  2/ Course attendance is mandatory. If a student is absent, he/she  must have a valid reason – documentation is required.  If a student is absent for all of the in-class theory or shop  demonstrations for which a test/project is assigned, he/she will  not be granted permission to complete the test/project.  3/ If a student misses a test, he/she must have a valid reason –  documentation is required.  In addition, the instructor must be notified prior to the test, or the  student will receive a mark of zero, with no make-up option.  4/ All assignments must be completed. Failure to complete  assignments will result in removal of 10% from the test associated  with the assignment.  5/ Re-writes for tests, and Repeats for shop projects will not be  granted.  Valid reasons for being absent:   * Illness – supported by doctor’s note * Family death or serious illness – supported by applicable documents   **CELL PHONES MUST NOT BE USED IN THE SHOP OR CLASSROOM** |
|  | The following semester grades will be assigned to students in postsecondary courses: |

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|  | Grade | Definition | Grade Point Equivalent |
|  | A+ | 90 - 100% | 4.00 |
|  | A | 80 – 89% | 4.00 |
|  | 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. |  |

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| **VI.** | **SPECIAL NOTES:** | |
| Attendance:  Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.  ***It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.*** | |

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| **VII.** | **COURSE OUTLINE ADDENDUM:** |
|  | The provisions contained in the addendum located on the portal form part of this course outline. |