SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON

Sault College

COURSE OUTLINE

Course Title: TRADE CALCULATIONS

Code No.: ASR105   **Semester**: 1

Program: AIRCRAFT STRUCTURAL REPAIR

Author: LARRY CANDURO

Date: June 1999   **Previous Outline Date**: June 1998

Approved: _____   _____
           Dean   **Date**

Total Credits: 2   **Prerequisite(s): Grade 12 General Math**

Length of Course: 2 HRS/WK.   **Total Credit Hours: 34**

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_____   _____
COURSE NAME   COURSE NUMBER

I.   COURSE DESCRIPTION:

of
This course studies the rules and procedures needed to obtain a complete understanding

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.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

(Generic Skills Learning Outcomes placement on the course outline will be determined
and communicated at a later date.)

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

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II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (Continued)

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

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II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE (Continued)

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:

        Scientific Calculator (Available in Sault College Bookstore for $19.50)
        Math Set (Available in Sault College Bookstore for $9.00)

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V.   EVALUATION PROCESS/GRADING SYSTEM

Written Tests (5) - Each test accounts for 20% of the final grade.
GRADES: A+ (94-100%)   B (78-85%)   R - Repeat
            A   (86-93%)   C (70-77%)

VI.   SPECIAL NOTES:

- Special Needs
  If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 so that support services can be arranged for you.

- Retention of Course Outlines
  It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other post-secondary institutions.

- Disclaimer for Meeting the Needs of the Learners

- Substitute Course Information is available at the Registrar's Office.

VII. PRIOR LEARNING ASSESSMENT

Students who wish to apply for advanced credit in the course should consult the instructor.