

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.

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:**

FAA-H-8083-31 Aviation Maintenance Technician Handbook-Airframe
FAA-H-8083-30 Aviation Maintenance Technician Handbook-General
Standard Aviation Maintenance Handbook

Scientific Calculator (Available in Bookstore)

Math Set (Available in Bookstore)

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/ All assignments must be completed, and are recorded on file. Failure to complete assignments may be used as criteria toward X-GRADE policy for rewrites in respect of the final grade for ASR105.**

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
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.	

If a faculty member determines that a student is at risk of not being academically successful, the faculty member may confidentially provide that student's name to Student Services in an effort to help with the student's success. Students wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.

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.

1/ Course attendance is mandatory. If a student is absent, he/she must have a valid reason – documentation is required.

2/ Students having missed more than 5 percent of the program through absences, shall not qualify for experience credit from Transport Canada, and will not be granted make-up or re-write options for theory tests and shop projects.

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/ 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.

5/ Valid reasons for being absent:

- Illness – supported by doctor's note
- Family death or serious illness – supported by applicable documents

**CELL PHONES / LAPTOPS / ELECTRONIC DEVICES MUST NOT BE USED
IN THE SHOP OR CLASSROOM**

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located in D2L and on the portal form part of this course outline.