



**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:**

A/C 65-15A A&P Mechanics Airframe Handbook  
 A/C 65-9A A&P Mechanics General Handbook  
 Standard Aviation Maintenance Handbook  
 Aircraft Sheet Metal  
 Scientific Calculator (Available in Sault College Bookstore)  
 Math Set (Available in Sault College 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%)

**Note: 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.**

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.	

## VI. SPECIAL NOTES:

### Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

### 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 postsecondary institutions.

### Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.

Substitute course information is available in the Registrar's office.

### Disability Services:

If you are a student with a disability (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Disability Services office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

### Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

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 enclosed, the learning process has begun. Late arrivers will not be granted admission to the room.***

**COURSE NOTE: All assignments must be completed. Failure to complete assignments will result in removal of 10% from the test associated with the assignment.**