COURSE OUTLINE: ASR105 - TRADE CALCULATIONS

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Course Code: Title	ASR105: TRADE CALCULATIONS
Program Number: Name	4067: AIRCRAFT STRUCT TECH
Department:	AIRCRAFT STRUCTURAL REPAIR
Semesters/Terms:	19F
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. Applied problems include layout work and bend calculations.
Total Credits:	2
Hours/Week:	2
Total Hours:	32
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Vocational Learning Outcomes (VLO's) addressed in this course: **Please refer to program web page for a complete listing of program outcomes where applicable.**	**4067 - AIRCRAFT STRUCT TECH** VLO 9 Apply weight and balance formulas. VLO 13 Fabricate sheet metal parts with the use of shop equipment and manuals.
Essential Employability Skills (EES) addressed in this course:	EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 10 Manage the use of time and other resources to complete projects.
Course Evaluation:	Passing Grade: 70%, B
Other Course Evaluation & Assessment Requirements:	Test #1 - Fractions, Decimals, Ratio & Proportion and Measurement (20%) Test #2 - Geometry - Bend Calculations (50%) Test #3 - Trigonometry - Bend Calculations (30%)
Books and Required Resources:	Aviation Maintenance Technician Handbook: Airframe: Volume 1 by Federal Aviation Administration ISBN: 9781560279501 Aviation Maintenance Technician Handbook: Airframe: Volume 2 by Federal Aviation

Administration
ISBN: 9781560279525

Aviation Maintenance Technician Handbook: General by Federal Aviation Administration
ISBN: 9781619540255

Standard Aviation Maintenance Handbook by Jeppesen
ISBN: 9780884871316

Course Outcomes and Learning Objectives:

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Introduction to Arithmetic	1.1 listen to teacher presentation on the definitions of terms, sequence of operations and applying the rules and procedures to problem solving 1.2 complete assignment for discussion in class 1.3 participate in a hands-on demonstration on the use of hand-held scientific calculators
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Common Fractions	2.1 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 2.2 complete assignment #1 for discussion in class 2.3 listen to teacher presentation on the addition, subtraction, multiplication and division of fractions, cancellation and complex fractions 2.4 complete assignment #2 for discussion in class 2.5 participate in a class discussion on a review of arithmetic and common fractions
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Decimal Fractions	3.1 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 3.2 complete assignment for discussion in class
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Ratio and Proportion	4.1 listen to teacher presentation on the principles of ratio and proportion 4.2 complete assignment #1 for discussion in class 4.3 listen to teacher presentation on the applications of density, specific gravity and the conversion of units 4.4 complete assignment #2 for discussion in class 4.5 participate in class discussion on a review of decimal fractions and ratio and proportion

Course Outcome 5	Learning Objectives for Course Outcome 5
5. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Measurement	5.1 listen to teacher presentation on the various units of measurement and conversions between English and Metric systems, using conversion tables 5.2 practice using conversion tables as needed to aid in problem solving throughout ASR105
Course Outcome 6	**Learning Objectives for Course Outcome 6**
6. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Basic Algebra	6.1 listen to teacher presentation on the addition, subtraction, multiplication and division of signed numbers and how to solve and check simple equations 6.2 apply the algebra skills learned to problem solving throughout ASR105
Course Outcome 7	**Learning Objectives for Course Outcome 7**
7. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Geometry	7.1 observe teacher demonstration on how to construct the various geometric surfaces that are used for layout exercises related to aircraft structural repair work 7.2 work individually on constructing the layout exercises 7.3 listen to teacher presentation on perimeter, circumference, bend layout terms and bend allowance calculations 7.4 complete assignments on perimeter, circumference and bend allowance exercises for discussion in class 7.5 listen to teacher presentation on area and volume 7.6 complete assignment for discussion in class
Course Outcome 8	**Learning Objectives for Course Outcome 8**
8. Upon successful completion of this course the student will demonstrate the ability to understand and solve the practical applied problems related to: Trigonometry	8.1 listen to teacher presentation on the introduction to trigonometry, the trigonometric functions and the applications to right triangles 8.2 complete assignment for discussion in class

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Test 1: Fractions, Decimals, Ratio & Proportion and Measurement	20%
Test 2: Geometry - Bend Calculations	50%
Test 3: Trigonometry - Bend Calculations	30%

Date: August 29, 2019

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.