**1. COURSE TITLE\*:** Aviation Technician Mathematics

**2.** **CATALOG – Prefix/Course Number/Course Section\*:** MATH 1128

**3. PREREQUISITES\*:**

A student must meet one of the following criteria to register for this course:

- Math 1118

- Three High school STEM or Core Math courses with grades of C or higher

- Appropriate score on College Placement Test.

- Accuplacer QAS 253 or above

**COREQUISITE:** MATH 1020 Tech Math Corequisite

**4. COURSE TIME/LOCATION/MODALITY: (Course Syllabus – Individual Instructor Specific)**

**5. CREDIT HOURS\*:** 3 **LECTURE HOURS\*:** 3

**LABORATORY HOURS\*:** 0 **OBSERVATION HOURS\*:** 0

**6. FACULTY CONTACT INFORMATION:(Course Syllabus – Individual Instructor Specific)**

**7. COURSE DESCRIPTION:**

This course contains skills and applications related to the Aviation Maintenance Technician program. Emphasis is on formulas, graphing, trigonometry, vectors, fractions, basic math operations, decimals, ratios, proportions, percentages, powers, functions, scientific notation, basic algebra, area, and volume.

**8. LEARNING OUTCOMES:**

 At the completion of this course the student will be able to:

1. Identify, assess, and mitigate risks using precedence of operations when solving an algebraic equation.

2. Identify, assess, and mitigate risks using both positive and negative integers in mathematical operations.

3. Identify, assess, and mitigate risks related to rounding off calculations.

4. Determine the square root of given numbers.

5. Compute the volume of a cylinder.

6. Compute the area of a wing.

7. Calculate the volume of a shape, such as a baggage compartment or fuel tank.

8. Convert between fractional and decimal numbers.

9. Compare two numerical values using ratios.

10. Compute compression ratio.

11. Compute the torque ratio when converting from inch-pounds to foot-pounds or from foot-pounds to inch-pounds

 12. Compute the volume of a cylinder.

 13. Use the Pythagorean Theorem and basic trigonometry functions to solve triangles.

 14. Use vectors and component vectors to solve problems.

 15. Interpret and use angle and radian measure.

 16. Graph trigonometric functions.

 17. Graph exponential and logarithmic functions.

 18. Solve exponential equations.

 19. Use trigonometry to solve applied problems.

**9. ADOPTED TEXT(S):**

 *Aviation Maintenance Technician Handbook-General (FAA-H-8083-30B)*

2023 edition

U.S. Department of Transportation, Federal Aviation Administration

*Contemporary Mathematics*

First Edition

Kirk, Donna et. al.

Download for free at <https://openstax.org/details/books/contemporary-mathematics>

*Algebra and Trigonometry*

2nd Edition

Abramson, Jay et. al.

Download for free at <https://openstax.org/details/books/algebra-and-trigonometry-2e>

**10. OTHER REQUIRED MATERIALS: SEE APPENDIX C FOR TECHNOLOGY REQUEST FORM.)\*\***

 Scientific calculator required.

**11. GRADING\*\*\*:**

Grading will follow the policy in the catalog. The scale is as follows:

 A: 90 – 100

 B: 80 – 89

 C: 70 – 79

 D: 60 – 69

F: Below 60

**12. GRADING PROCEDURES OR ASSESSMENTS:(Course Syllabus – Individual Instructor Specific) EXAMPLES BELOW**

|  |
| --- |
| *Example 1 - By Percent* |
|  Homework 10% Quizzes/Tests 90% Total 100% |

|  |
| --- |
| *Example 2*  |
| *Category* | *By Total Points* | *% of Grade* |
| Homework (20x10) | 200 | 10% |
| Quizzes/Tests(5x360) | 1800 | 90% |
| Total | 2000 | 100% |
|  |  |  |

**13. COURSE METHODOLOGY: *(Course Syllabus – Individual Instructor Specific)***

The course design provides instruction and materials to support the course objectives.  Classes may consist of a variety of means to accomplish this including but not limiting to: lectures, class discussions, small group projects, supplemental materials, and outside assignments.  Practice is an important part of the learning process.  For every one hour of class time, two additional hours of study time should be expected.

**14. COURSE OUTLINE: *(Course Syllabus – Individual Instructor Specific)***

Week 1: (CM) 3.1, 3.2 (AM.I.H.R2: Use of both positive and negative integers in mathematical operations. LO #2)

Week 2: (CM) 3.3, 3.4 (AM.I.H.R1: Precedence of operations when solving an algebraic equation. LO#1,3, 8)

Week 3: (CM) 3.5, 5.1 (AM.I.H.R1, AM.I.H.R3: Rounding off calculations. AM.I.H.S1: Determine the square root of given numbers. LO#1, 3, 4)

Week 4: (CM) 5.2, 5.4 (AM.I.H.R1, AM.I.H.S6: Compare two numerical values using ratios, LO #9, 10, 11)

Week 5: (CM) 10.2, 10.3, 10.4 (Background for AM.I.H.S2,3,4 LO # 5, 6, 7)

Week 6: (CM) 10.6, 10.7(AM.I.H.S2: Compute the volume of a cylinder. AM.I.H.S3: Compute the area of a wing. AM.I.H.S4: Calculate the volume of a shape, such as a baggage compartment or fuel tank. LO # 5, 6, 7

Week 7: (CM) 10.8, (A&T) 7.1 (Physics requirement component, LO#12, 15)

Week 8: (A&T) 7.2, 7.4 (LO#12, 15)

Week 9: (A&T) 7.3 (LO #14, 15)

Week 10: (A&T) 8.3 (LO #12, 15)

Week 11: (A&T) 10.1 (LO #6, 7, 12, 15)

Week 12: (A&T) 10.2 (LO #6, 7, 12, 15)

Week 13: (A&T) 10.8 (LO#13)

Week 14: (AM) Compression Ratio(AM.I.H.S7: Compute compression ratio. LO #10)

Week 15: (AM) Torque Value (AM.I.H.S8: Compute the torque value when converting from inch-pounds to foot-pounds or from foot-pounds to inch-pounds. LO #11)

Week 16: Finals

**15. SPECIFIC MANAGEMENT REQUIREMENTS\*\*\*:**

 Students will have their class embedded within Canvas. Depending on modality, assignments may be required to be done within Canvas. Exams will be proctored.

**16. FERPA:\***

Students need to understand that their work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**17. ACCOMMODATIONS: \***

Students requesting accommodations may contact Ryan Hall, Accessibility Coordinator at rhall21@sscc.edu or 937-393-3431, X 2604.

Students seeking a religious accommodation for absences permitted under Ohio’s Testing Your Faith Act must provide the instructor and the Academic Affairs office with written notice of the specific dates for which the student requires an accommodation and must do so no later than fourteen (14) days after the first day of instruction or fourteen (14) days before the dates of absence, whichever comes first. For more information about Religious Accommodations, contact Ryan Hall, Accessibility Coordinator at rhall21@sscc.edu or 937-393-3431 X 2604.

**18. OTHER INFORMATION\*\*\*:**

**SYLLABUS TEMPLATE KEY**

**\*** Item cannot be altered from that which is included in the master syllabus approved by the Curriculum Committee.

**\*\*** Any alteration or addition must be approved by the Curriculum Committee

**\*\*\*** Item should begin with language as approved in the master syllabus but may be added to at the discretion of the faculty member.