

## TEAU 1055 - Math for Automotive Technicians (2 Credits)

### Course Description

Mathematical skills form the foundation of automotive design and operation. Math for Automotive Technicians, is designed to provide realistic problems technicians will face including: whole numbers, decimals, fractions, geometry, angle measurement, metric system, integers, ratios, business statistic, repair orders, automotive engine systems, automotive electrical systems, automotive drivetrain, automotive chassis, and automotive HVAC systems.

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### Course Objectives

- Calculate differential gear ratios, engine bore and stroke, electrical current flow, voltage, resistance and many other components and systems found in the modern automobile.
  - Determine weights of gasses needed in the air conditioning systems and fuel systems.
  - Determine fuel composition, and diagnose and repair vehicles.
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### Course Outline

- Whole Numbers and Decimals
  - Fractions and Geometry
  - Integers, Signed Numbers, Ratios, Proportions, and Percent
  - Business, Statistics, and Repair Orders
  - The Automobile Engine and Systems
  - Automobile Electrical Systems
  - The Automobile Drive Train
  - The Automobile Chassis
  - Automobile Heating, Ventilation, and Air Conditioning
  - Measurement Tools
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### Textbook & Reading Materials

Cengage Unlimited (1 year subscription), Cengage

## Assignments and Assessments

Student Contract	Read
Orientation	Watch
Orientation Acknowledgement	Do
Remind Txt Group	Assess: Quiz 2-4
Automotive Student OE Instructions	Math Matters
Cengage Unlimited Student Dashboard	Show What You Know - Chapter 2
Cengage Technical Support	Chapter 2 Review
Webex Classroom Link	Chapter 2 Test
Calculator	Module 1 Completion
Cell Phone	Module 1 End
Module 1 Test Out: Whole Numbers and Decimals	Module 2 Test Out: Fractions, Geometry, Angle Measurement, and the Metric System
Chapter 1: Whole Numbers	Chapter 3: Fractions
Adding Whole Numbers	Working with Fractions
Read	Read
Watch	Watch
Do	Do
Assess: Quiz 1-1	Adding Fractions
Subtracting Whole Numbers	Read
Read	Watch
Watch	Do
Do	Subtracting Fractions
Assess: Quiz 1-2	Read
Multiplying Whole Numbers	Watch
Read	Do
Watch	Multiplying Fractions
Do	Read
Assess: Quiz 1-3	Watch
Dividing Whole Numbers	Do
Read	Dividing Fractions
Watch	Read
Do	Watch
Assess: Quiz 1-4	Do
Math Matters	Math Matters
Show What You Know - Chapter 1	Assess: Quiz 3-1
Chapter 1 Review	Assess: Quiz 3-2
Chapter 1 Test	Assess: Quiz 3-3
Chapter 2: Decimals	Assess: Quiz 3-4
Adding Decimals	Assess: Quiz 3-5
Read	Show What You Know - Chapter 3
Watch	Chapter 3 Review
Do	Chapter 3 Test
Assess: Quiz 2-1	Chapter 4: Geometry, Angle Measurement, and the Metric System
Subtracting Decimals	Angles
Read	Circular Measures
Watch	Read
Do	Watch
Assess: Quiz 2-2	Do
Multiplying Decimals	Assess: Quiz 4-1
Read	Circular Measures
Watch	Read
Do	Watch
Assess: Quiz 2-3	
Dividing Decimals	

Do  
Assess: Quiz 4-2  
The Metric System  
Read  
Watch  
Do  
Assess: Quiz 4-3  
Math Matters  
Show What You Know - Chapter 4  
Chapter 4 Review  
Chapter 4 Test  
Module 2 Completion  
Module 2 End  
Module 3 Test Out: Integers, Signed Numbers, Ratios,  
Proportions, and Percentages  
Assess: Quiz 5-1  
Subtracting Signed Numbers  
Read  
Watch  
Do  
Assess: Quiz 5-2  
Show What You Know - Chapter 5  
Math Matters  
Chapter 5 Review  
Chapter 5 Test  
Chapter 6: Ratios, Proportions, and Percentages  
Ratios  
Read  
Watch  
Do  
Assess: Quiz 6-1  
Proportions  
Read  
Watch  
Do  
Assess: Quiz 6-2  
Percentages  
Read  
Watch  
Do  
Assess: Quiz 6-3  
Math Matters  
Show What You Know - Chapter 6  
Chapter 6 Review  
Chapter 6 Test  
Module 3 Completion  
Module 3 End  
Chapter 7: Business and Statistics  
Discounts  
Read  
Watch  
Do  
Profit, Loss, and Commissions  
Read

Watch  
Do  
Assess: Quiz 7-1  
Interest and Payments  
Read  
Watch  
Do  
Assess: Quiz 7-2  
Taxes  
Read  
Watch  
Do  
Assess: Quiz 7-3  
Averages  
Read  
Watch  
Do  
Assess: Quiz 7-4  
Math Matters  
Show What You Know - Chapter 7  
Chapter 7 Review  
Chapter 7 Test  
Chapter 8: Completing Repair Orders  
Repair Orders  
Read  
Do  
Apply: Chapter 8 Repair Order  
Assess: Quiz 8-1  
Math Matters  
Show What You Know - Chapter 8  
Chapter 8 Review  
Chapter 8 Test  
Module 4 Completion  
Module 4 End  
Chapter 9: The Automobile Engine  
The Automobile Engine  
Read  
Do  
Apply: Chapter 9 Repair Order  
Assess: Quiz 9-1  
Math Matters  
Show What You Know - Chapter 9  
Chapter 9 Review  
Chapter 9 Test  
Chapter 10: Automobile Engine Systems  
Automobile Engine Systems  
Read  
Do  
Apply: Chapter 10 Repair Order  
Assess: Quiz 10-1  
Math Matters  
Show What You Know - Chapter 10  
Chapter 10 Review  
Chapter 10 Test

Module 5 Completion  
Module 5 End  
Chapter 11: Automobile Electrical Systems  
Automobile Electrical Systems  
Read  
Do  
Apply: Chapter 11 Repair Order  
Assess: Quiz 11-1  
Math Matters  
Show What You Know - Chapter 11  
Chapter 11 Review  
Chapter 11 Test  
Module 6 Completion  
Module 6 End  
Chapter 12: The Automobile Drive Train  
The Automobile Drive Train  
Read  
Do  
Apply: Chapter 12 Repair Order  
Assess: Quiz 12-1  
Math Matters  
Show What You Know - Chapter 12  
Chapter 12 Review  
Chapter 12 Test  
Module 7 Completion  
Module 7 End  
Chapter 13: The Automobile Chassis  
The Automobile Chassis  
Read  
Do  
Apply: Chapter 13 Repair Order  
Assess: Quiz 13-1  
Math Matters  
Show What You Know - Chapter 13  
Chapter 13 Test  
Module 8 Completion  
Module 8 End  
Chapter 14: Automobile Heating, Ventilation, and Air Conditioning  
Automobile Heating, Ventilation, and Air Conditioning  
Read  
Do  
Apply: Chapter 14 Repair Order  
Assess: Quiz 14-1  
Math Matters  
Show What You Know - Chapter 14  
Chapter 14 Review  
Chapter 14 Test  
Module 9 Completion  
Module 9 End  
Chapter 15: Measurement Tools  
Digital Meters  
Read  
Watch

Do  
Assess: Quiz 15-1  
Scale Measurement  
Read  
Watch  
Do  
Assess: Quiz 15-2  
Dial Indicators  
Read  
Watch  
Do  
Assess: Quiz 15-3  
Micrometers  
Read  
Watch  
Do  
Assess: Quiz 15-4  
Drill Sizes  
Read  
Do  
Assess: Quiz 15-5  
Digital Electronic Micrometers  
Read  
Watch  
Do  
Math Matters  
Show What You Know - Chapter 15  
Chapter 15 Review  
Chapter 15 Test  
Module 10 Completion  
Module 10 End  
Student Feedback  
End of Course Survey

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*Subject to change. Please consult your Canvas course for the most current instructions and updates.*

## Classroom Hours

Mo, Tu, W, Th  
8:00 AM - 12:00 PM  
1:00 PM - 5:00 PM

Friday  
8:00 AM - 12:00 PM

For a full list of course hours visit: [Course Schedule](#)

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## Instructor Contact Information

Cody Dawson — [cdawson@stech.edu](mailto:cdawson@stech.edu)  
Shad Esplin — [sesplin@stech.edu](mailto:sesplin@stech.edu)  
Dallin Robinson — [drobinson@stech.edu](mailto:drobinson@stech.edu)  
McKael Stapel — [mstapel@stech.edu](mailto:mstapel@stech.edu)

Office Hours: By appointment

Email is the preferred method of communication; you will receive a response within 24 hours during regular business hours.

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## Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- [stech.instructure.com](http://stech.instructure.com)
- For Canvas passwords or any other computer-related technical support contact Student Services.
- For regular Hours and Weekdays call (435) 586 - 2899.
- For after Hours & Weekends call (435) 865 - 3929 (Leave a message if no response).

## Course Policies

Class attendance is required, this is not an online course. Attendance is required during your scheduled time.

Grade Scale — A: 100 - 90%, B: 89 - 80%, F: 79% or lower.

Cell phones for many have become a distraction. When you are in class or lab we encourage you to keep your cell phones put away in a secure location. If you use ear buds we ask that you only use one so you can still hear the things going on around you. If you are using your phone for things other than school related items, instructors will ask you to put them away. Please follow the direction of your instructors. Those who have been asked to refrain from using your cell phone and fail to do so will be asked to meet with the Director of Transportation and student services will be notified.

The program is designed to provide the student with as much hands-on work as possible. In the automotive industry you may be required to lift heavy objects and stand for hours at a time to complete work required. Technicians deal with chemicals and materials which require caution, these will be identified in the Right to Know Agreement provided to you. You will also be required to use computers to track and complete work.

High School Power School Grades: Quarter student grades will be determined by student progress percentage. Faculty will use the higher percentage of either 1) quarter progress, or 2) cumulative progress for the current training plan year. The progress percentage will be used with the grading scale to determine the minimum grade. High School Grade Scale: The following grading scale will be used to determine a letter grade from the progress percentage:

• A : 94 - 100%	• B : 83 - 86%	• C : 73 - 76%	• D : 63 - 66%
• A- : 90 - 93%	• B- : 80 - 82%	• C- : 70 - 72%	• D- : 60 - 62%
• B+ : 87 - 89%	• C+ : 77 - 79%	• D+ : 67 - 69%	• F : 0 - 59%

## Additional Information

InformaCast Statement: Southwest Tech uses InformaCast to ensure the safety and well-being of our students. In times of emergency, such as weather closures and delays, this app allows us to promptly deliver notifications directly to your mobile devices. To stay informed and receive real-time updates, we encourage all students to sign up for notifications. Your safety is our priority, and staying connected ensures a swift response to any unforeseen circumstances. More information and directions for signing up are available at: <https://stech.edu/emergency-notifications/>

Internet Acceptable Use Policy: The student is expected to review and follow the Southwest Technical College Internet Safety Policy at: <https://stech.edu/students/policies/>

Student Code of Conduct Policy: The student is expected to review and follow the Southwest Technical College Student Code of Conduct Policy at: <https://stech.edu/students/policies/>

Accommodations: Students with medical, psychological, learning, or other disabilities desiring accommodations or services under ADA, must contact the Student Services Office. Student Services determines eligibility for and authorizes the provision of these accommodations and services. Students must voluntarily disclose that they have a disability, request an accommodation, and provide documentation of their disability. Students with disabilities may apply for accommodations, based on an eligible disability, through the Student Services office located at 757 W. 800 S., Cedar City, UT 84720, and by phone at (435) 586-2899. No diagnostic services are currently available through Southwest Technical College.

Safety and Building Maintenance: The College has developed and follows a variety of plans to ensure the safe and effective operation of its facilities and programs. The following plans are available online:

1) Facilities Operations and Maintenance Plan; 2) Technical Infrastructure Plan; and 3) Health and Safety Plan.

Withdrawals and Refunds: Please refer to the Southwest Technical College Refund Policy at: <https://stech.edu/students/policies/>

Any high school or adult student, who declares a technical training objective is eligible for admission at Southwest Technical College (Southwest Tech). Program-specific admissions requirements may exist and will be listed on the Southwest Tech website. A high school diploma or equivalent is not required for admission but is mandatory for students seeking Title IV Federal Financial Aid.

Non-Discriminatory Policy: Southwest Technical College affirms its commitment to promote the goals of fairness and equity in all aspects of the educational enterprise, and bases its policies on the idea of global human dignity.

Southwest Tech is committed to a policy of nondiscrimination. No otherwise qualified person may be excluded from participation in or be subjected to discrimination in any course, program or activity because of race, age, color, religion, sex, pregnancy, national origin or disability. Southwest Technical College does not discriminate on the basis of sex in the education programs or activities that it operates, as required by Title IX and 34 CFR part 106. The requirement not to discriminate in education programs or activities extends to admission and employment. Inquiries about Title IX and its regulations to STECH may be referred to the Title IX Coordinator, to the Department of Education, and/or to the Office for Civil rights.

If you believe you have experienced discrimination or harassment on our campus, please contact the Title IX Coordinator, Cory Estes: [cestes@stech.edu](mailto:cestes@stech.edu), (435) 865-3938.

For special accommodations, please contact the ADA Coordinator, Cyndie Tracy: [ctracy@stech.edu](mailto:ctracy@stech.edu), (435) 865-3944.

Southwest Technical College

757 West 800 South

Cedar City, UT 84720

[info@stech.edu](mailto:info@stech.edu)

(435) 586-2899