



## **MTH 154—Quantitative Reasoning Elite Learning, Spring 2019**

**Supporting Colleges: MECC SVCC WCC VHCC**

**Southwest Virginia Education and Training Network**

---

### **Contact Information**

**Instructor:** Mary Beth Greer

**E-mail:** The best way to reach me is by sending a message within your Moodle course; however, my email address is [mgreer@tazewell.k12.va.us](mailto:mgreer@tazewell.k12.va.us). Email should only be used as a last resort. Students should expect to receive message responses within 48 hours. Messages will post under your course announcements, so be sure to read the announcements!

**Asynchronous Online Course via Moodle:** <http://elite.mrooms3.net>

### **Course (Catalog) Description**

**VCCS Master Course Description:** MTH 154 Quantitative Reasoning presents topics in proportional reasoning, modeling, financial literacy and validity studies (logic and set theory). Focuses on the process of taking a real-world situation, identifying the mathematical foundation needed to address the problem, solving the problem and applying what is learned to the original situation.

**Prerequisite for Quantitative Reasoning:** A prerequisite means students are not allowed to take this course unless they have a placement recommendation. This is determined by a test given by the community college to make sure students have enough mathematical knowledge to take this course. Parents and/or students should speak to their school's guidance counselor make sure qualifications have been met. Students must have successfully completed Algebra I, Algebra II, and Geometry before taking this course.

### **Course Materials**

No book required. All online resources will be used. All course materials were selected to meet the course goals and objectives. All course materials were selected to meet the course goals and objectives.

### **Time & Location of Class Meeting:**

This course is asynchronous, which means you will be able to access your course material at any time of the day or night. You should have a specific time in the day that you will be assigned to work on your assignments for this course. It is critical to log into your course on a daily basis.

### **Technology Requirement:**

Students will be required to complete and submit assignments by using Moodle, the learning management system for Elite Learning. The course can be accessed at [www.svetn.org](http://www.svetn.org).

Students will need use of the Internet for all coursework. Access to Microsoft Word and PowerPoint are also required.

### **Technical Support:**

Technical problems are not common but occur from time-to-time. To receive prompt support, students must submit a trouble ticket by going to [www.svetn.org](http://www.svetn.org) and then selecting the Contact tab. The trouble ticket form will be distributed to the informational support team. You should receive a response within 24 hours (usually much sooner). After you have submitted the trouble ticket, please send me an email or message to let me know what problems you are having.

### **Course Learning Outcomes/Objectives**

#### **Broad Goals:**

1. **Communication & Learning Skills**--To help students develop the ability to read, understand, interpret, and write about mathematics.
2. **Interpersonal Skills & Human Relations**--To develop responsibility for completion of work in a timely fashion as would be expected by employer.
3. **Computational & Computer Skills**--To develop skill in using a graphing calculator or computer as a problem solving tool.
4. **Understanding Science & Technology**--To provide an understanding of the development of math and its relation to the world by solving real world applications.

#### **Course Content:**

##### **Unit 1 - Set Theory**

The student will:

- apply concepts of set theory to finite and infinite sets
- work with Venn diagrams, complement of a set, and subsets
- work with intersection and union of sets
- apply set theory to decision making of real-world applications

##### **Unit 2 - Logic**

The student will:

- work with statements and quantifiers
- construct truth tables and equivalent statements for conjunction, disjunction, and negation
- analyze the relationship between quantified statements and conditional statements
- work with converse, inverse, contrapositive, and biconditional statements
- apply logic to real-world applications

##### **Unit 3 – Concepts of Algebra**

The student will:

- work with ratios, proportions, and variations

- solve real-world application problems using conversion of units by dimensional analysis
- apply scaling factors to calculate various real-world problems

#### **Unit 4 – Functions, Systems of Equations and Inequalities**

The student will:

- analyze linear functions and their graphs and models
- analyze quadratic functions and their graphs and models
- analyze exponential and logarithmic functions and their graphs and models
- create linear and non-linear regressions and use their models to predict values
- analyze the systems of linear equations and inequalities

#### **Unit 5 – Personal Finance Management**

The student will:

- define interest and related terminology
- compare and contrast compound interest and simple interest
- compare and calculate loans with different lengths and interest rates
- calculate profit from a sale of an investment
- analyze loans and costs of buying items on credit using real-world applications

### **Method of Evaluating Student Achievement**

#### **Grading Policy & Scale**

This course will be graded on a ten-point scale:

100-90 % = A      89-80 % = B      79-70 % = C      69-60 % = D      59 % or less = F

All grades will be reported by SVETN to each school with a numeric grade and a recommended letter, but assignment of a final letter grade will be at the discretion of the student's school.

There will be a test given at the end of each unit. The test average will be 50% of the student's final grade. There will be a cumulative final exam that will be 20% of the student's grade. The average of the weekly content quizzes will be 15% of the student's final grade. And the remaining 15% will be the average of the student's homework grades.

#### **Teaching Methods:**

Many assignments will use a graphing calculator to enhance the problem solution. Also, spreadsheet software will be used for graphing and other mathematical manipulation.

#### **Tips for Success:**

- Make sure you read through this entire document. There is useful information here.
- Stay on task by printing off your assignment sheets and keeping them in a notebook with a calendar.

- Plan ahead, and do not procrastinate. The dual enrollment classes are college classes. An asynchronous class requires discipline. If you are not self-disciplined in your studies, then you need to rethink your decision to take this class.
- You must stay focused and keep a steady pace, or you will fall behind.

### **Late Work Policy:**

This is a rigorous college course which requires disciplined work habits and the meeting of deadlines. Due dates are located on the calendar and throughout the course. You should give yourself plenty of time on assignments and don't wait until the last minute. I will not extend deadlines unless I am contacted by your school with an approved excuse such as extended illness, death in the family, etc. I will not reopen an assignment after it has closed. Plan accordingly if you will be out of school on trips. Students should expect to spend a minimum of 90 minutes per day of class activities. If students are unable to complete assignments during their assigned class period, they will still be responsible for completion of all assignments on their own computers. Remember that this work can be viewed from any computer with the Internet; therefore, students should speak with their guidance counselor to find an appropriate location within the school to work. Email the teacher if problems occur so they can be handled on a one-on-one basis.

### **Attendance Policy:**

Because this is an Internet based course, there is not a scheduled time set for your coursework. Each student must be dedicated to completing assignment independently. The student will be required to log in to this course on a regular basis, which will be checked by the teacher. The school and/or parents will be notified if a student has not logged into their course for a three day period. Contacts will also be made if a student is logging into their course with only a minimum amount of work each day. Expect no less than 60-90 minutes of work each day.

At least once every school day, you are required to log on to MOODLE and perform three tasks:

1. Check your inbox for new messages.
2. Check for new course announcements under "Latest News."
3. Check the calendar under "Upcoming Events," to see what work is due.

You should then proceed to work on the assignments within the current unit.

### **Elite Learning Inclement Weather Policy:**

Asynchronous online courses have many advantages over the traditional classroom. Among those advantages are the availability of the instructor, the opportunity to "attend" class from many locations, the flexibility of schedule, and no make-up days due to snow. To provide the required amount of "seat-time" for students, Elite Learning instructors will continue to present class material and require assignment submissions. When some schools are temporarily closed, it is necessary to require a continuation of assigned work even if students are absent from school due to weather. It is the responsibility of the student to access the class via Internet during this type of absence. Students without Internet access beyond school hours will need to discuss this with their instructor at the beginning of the semester.

### **Students with Disabilities:**

Students who participate in this class are also high school students. Each high school has resources available for students with disabilities (IEP). Please contact the guidance counselor at your school to request academic accommodations. Each community college also has the Office of Student Services,

which may be able to provide additional services. A representative from your school (guidance counselor) may make a request for services at the college. That office will evaluate the request and make recommendations for appropriate and reasonable accommodations, which the student will provide to the instructor. Please contact your guidance counselor or SVETN for more information.

**Emergency Policy:**

Follow all emergency policies for your home school.

**Academic Integrity:**

Each student will be bound by the academic codes of their school. Any violations will be reported to the student's school for appropriate disciplinary action. Cheating will not be tolerated. Because these courses are considered college courses, each student is considered a responsible adult. It is assumed that students will maintain standards of conduct appropriate to membership in Elite Learning as well as the community college. Emphasis is placed on standards of student conduct rather than on limits or restrictions. Guidelines and regulations governing student conduct are developed by the Elite Learning faculty, staff, and administration. More detailed information is found in the *Elite Learning Student Guide*.

**It is critical that all students read the Elite Learning Guide for Students. This guide is located at [www.svetn.org](http://www.svetn.org) as well as within your course. Contact Dawn Stafford, SVETN Executive Director, if you have questions or concerns.**

**Course syllabus and schedule is subject to change at the discretion of the instructor.**