

Tompkins Cortland Community College
Master Course Syllabus

Course Discipline and Number: MATH 110

Year: 2021-2022

Course Title: Topics in Mathematics

Credit Hours: 3

Attendance Policy: *To maintain good grades, regular attendance in class is necessary. Absence from class is considered a serious matter and absence never excuses a student from class work. It is the responsibility of all instructors to distribute reasonable attendance policies in writing during the first week of class. Students are required to comply with the attendance policy set by each of their instructors. Students are not penalized if they are unable to attend classes or participate in exams on particular days because of religious beliefs, in accordance with Chapter 161, Section 224-a of the Education Law of the State of New York. Students who plan to be absent from classroom activity for religious reasons should discuss the absence in advance with their instructors. See college catalog for more information.*

Services for Students with Disabilities: *It is the College's policy to provide, on an individual basis, appropriate academic adjustments for students with disabilities, which may affect their ability to fully participate in program or course activities or to meet course requirements. Students with disabilities should contact the Coordinator of Access and Equity Services, to discuss their particular need for accommodations. All course materials are available in alternate formats upon request.*

Course Description

This course covers topics in mathematics related to everyday life applications. Such topics include proportions, customary units of measure, ratios and conversions, consumer mathematics, algebraic expressions and equations, introduction to quadratic and exponential functions, probability and statistics, and introductory geometry. These topics are studied through practical and quantitative reasoning applications as well as the use of technology. MATH 110 fulfills the SUNY General Education Mathematics requirement. Prerequisites: C or better grade in MATH 090 if required by placement testing; RDNG 099 if required by placement testing; ENGL 099 or prior completion or concurrent enrollment in ESL 120, 121, and 122 (or prior completion of ESL 103) if required by placement testing. 3 Cr. (3 Lec.)

Course Context/Audience

This course can be used to fulfill a SUNY General Education mathematics elective requirement.-Some four-year institutions may accept this course for transfer as a mathematic elective.

Basic Skills/Entry Level Expectations

Writing	W2	ENGL 099 or prior completion or concurrent enrollment in ESL 120, 121 and 122 if required by placement testing.
Math:	M2	MATH 090 if required by placement testing.
Reading:	R2	RDNG 099 if required by placement testing.

Course Goals

1. Students will be able to solve algebraic applications and linear equations.
2. Students will be able to use ratios and perform unit conversions.
3. Students will be able to interpret word problems and set up proportions to solve applications.
4. Students will be able to work with percent, and percent applications such as interest, mark-ups, mark-downs, yield percent, and others.
5. Students will be able to read, interpret, and construct frequency and relative-frequency distributions, evaluate probabilities and empirical probabilities, find expected values and make predictions based on quantitative evidence. .
6. Students will be able to recognize linear, quadratic, and exponential functions and compare their growth rates.
7. Students will be able to use geometric formulas to solve applications.

Course Objectives/Topics

Objective/Topic	# Hours
Students will be able to solve algebraic applications and linear equations.	6 Hours
Students will be able to use ratios and perform unit conversions.	9 Hours
Students will be able to interpret word problems and set up proportions to solve applications.	9 Hours
Students will be able to work with percent, and percent applications.	9 Hours
Students will be able to evaluate probabilities; read, interpret, and construct frequency and relative-frequency distributions; find expected values and make predictions based on quantitative evidence.	6 Hours
Students will be able to recognize linear, quadratic, and exponential functions and compare their growth rates.	3 Hours
Students will be able to use geometric formulas to solve applications.	3 Hours

General Education Goals - Critical Thinking & Social/Global Awareness

CRITICAL THINKING OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
<p>Students will be able to</p> <ul style="list-style-type: none"> ➤ Develop meaningful questions to address problems or issues. ➤ Gather, interpret, and evaluate relevant sources of information. ➤ Reach informed conclusions and solutions. ➤ Consider analytically the viewpoints of self and others. 	<p>This course is designed to address problem solving and quantitative literacy. Homework, activities, projects, and tests are used to evaluate student understanding of the course content.</p> <p>Students complete a research paper on a topic of their interest and present their findings mathematically. Paper and/or oral presentation is required.</p> <p>Students practice making informed decisions and predictions based on mathematical and scientific evidence. They learn to answer problems and rationalize the reasonableness of their answers. Homework, guided activities, projects, and tests are used.</p> <p>Students may work in groups on solutions for real-world applications and provide feedback/critique on presentations.</p>
SOCIAL/GLOBAL AWARENESS OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
<ul style="list-style-type: none"> ➤ Students will begin to understand how their lives are shaped by the complex world in which they live. ➤ Students will understand that their actions have social, economic and environmental consequences. 	<p>Students solve real-world problems like population growth, cost of goods, economic growth, waste management, and correlation. All outcomes are evaluated mathematically and analysis of their impact is conducted. Results are reported individually and in groups.</p>

Instructional Methods

The main mode of instruction should be the lecture format enhanced with discussions, research, and instructional videos. Group work should be encouraged during the class meetings with in-class group presentations required.

Methods of Assessment/Evaluation

Method	% Course Grade
Chapter tests	40-60%
Homework	20-40%
Written paper / Technology Project	10-30 20%
Group presentation	10-20%

Text(s)

Under Development using OER.

Bibliography

Linda Blocker & Julie Hill, Culinary Math, 4th Edition

Allan B. Bluman, Mathematics in Our World, 1st Edition, McGraw Hill, © 2005

Peter Tannenbaum, Excursions in Modern Mathematics, 7th Edition, Prentice Hall © 2010, 2007, 2004, 2001, 2008, 1995, 1992

Jeffrey Bennet & William Briggs, Using and Understanding Mathematics: A Quantitative Reasoning Approach, 4th Edition, Pearson / Addison Wesley, © 2008

William Setek, Jr. & Michael A. Gallo. Fundamentals of Mathematics, 11th Edition. Upper Saddle River, NJ: Prentice Hall. © 2009

Sophia Georgiakaki, Pre-Algebra, Thales Books, © 2014

Charles D. Miller, Vern E. Heeron and John Hornsby. Mathematical Ideas. 12th edition. Boston, Ma: Pearson Education. © 2011.

Thomas L. Pirnot. Mathematics All Around. Boston, MA: Pearson Education, Inc. © 2014.

Fred Richman, Carol L. Walker, Robert J. Wisner and James W. Brewer. Mathematics for the Liberal Arts Student. Upper Saddle River, NJ: Prentice Hall. © 2000.

Other Learning Resources

Audiovisual

www.myopenmath.com

Electronic

www.myopenmath.com, www.microsoft.com

Other

No resources specified