ALGEBRA 1
COURSE SYLLABUS

GRADE LEVEL: Grade 8　　　　　　　　　**SCHOOL YEAR**: 2024-2025

TEACHER: ISAAC MATERE　　　　　　　**EMAIL: misaac@dishs.tp.edu.tw**

COURSE DESCRIPTION:

Algebra I is a course that students are required to make the transition from arithmetic to the new world of symbols. Symbolic reasoning and calculations with symbols are central in this course. The Common Core State Standards are adopted for students and teachers to achieve higher expectations.

Through the study of Algebra, students develop an understanding of the symbolic language of mathematics. Use properties of rational exponents, rational and irrational numbers. Interpret and create the structure, and perform arithmetic on linear and quadratic polynomials. Interpret, analyze, and solve linear, absolute value equations and inequalities, and quadratic and exponential equations. Construct and compare linear, quadratic, and exponential models. Use scatter plots to fit and interpret correlation coefficients, and summarize, represent, and interpret data using measures of center and spread. In addition, algebraic skills and concepts are developed and used in a wide variety of problem-solving situations. It gives students a solid foundation for exploring and understanding Geometry, Algebra II, and Calculus in future grades.

COURSE OBJECTIVES:

To enable students, communicate in mathematics. Students need to listen, speak, read and write math just like any other language. They will be asked to utilize this math language to express the real-life problem, to construct a model to solve the problem, and to find the solution of the problem. Throughout the learning process, hope they can enjoy this efficient and very powerful language. In addition, student's use units, interpret them consistently in formulas as a way to understand problems and to guide the solution of multi-step problems. Use the structure of an expression to interpret complicated problems such as terms, factors, coefficients by viewing one or more of their parts as a singular entity. Factor a quadratic expression using factoring, complete the square, or formula method. Create equations in one, two or more variables to solve problems and to represent relationships between quantities; graph equations on coordinate axes with labels and scales. Understand a function (linear, quadratic, exponential), and use function notation, to evaluate for inputs in their domains, and interpret statements that use function notation in terms of a context. Write arithmetic and geometric sequences both recursively and with an explicit formula, and use them to model situations, and translate between the two of them. Understand and apply Pythagorean theorem.

ASSESSMENT:

Tests and Quarterly Exams are announced in advance. Pop Quizzes are unannounced and can be given at any time during the class so students must come to class prepared. ALL Tests, Exams and Quizzes are cumulative so students are responsible for staying current and prepared of the previous scopes and lessons learned.

Homework/Classwork/Seatwork are graded based on completion and completing by the due dates. Students are responsible for checking the assignments' due dates posted on Google Classroom. Students are expected to be prepared to turn-in any work by the due date class time even if the Teacher did not collect the work at the due date. Actual work turn-in may be after the original due date, in which any incomplete work is well late. Any missing, incomplete or late works are counted with 10% or more penalty with due dates as posted on the Google Classroom. Students MUST submit "Mark as Done" in Google Classroom for each assignments posted. Not submitting "Done" count as Incomplete with 10% penalty. Additional 10% are penalized for each day for late turn-in work. Actual work turn-in may be after the original due date, in which any incomplete work is well late. No late work is accepted 3 days after the due dates posted. Students who are absent are responsible for keeping up with the class by doing the work as assigned on Google Classroom.

Students who miss the scheduled Test or Quarterly Exam must make-up the exam on return at the earliest. If the student does not make-up the exam at the earliest on return, then penalty may be deducted from the exam score. The make-up test/exam may be different and more challenging than the originally scheduled test/exam. The student grades are assigned as the following:

1. Tests and Pop Quizzes	30%
2. Homework/Classwork/Seatwork /Projects	30%
3. Quarterly Exam	30%
4. Deportment	10%
Total Grade	100%

PRIMARY TEXTBOOK & OTHER RESOURCES

ALGEBRA 1— Common Core (Big Ideas Learning, 2022)
Ron Larson and Laurie Boswell, Algebra 1 – Resources by chapter
Ron Larson and Laurie Boswell, Algebra 1 – Assessment Book
Ron Larson and Laurie Boswell, Algebra 1 – Practice workbook and Test Preparation
www.bigideasmath.com

ADDITIONAL INFORMATION

Students are required to check the subject's Google Classroom regularly for assignments and announcements. Regular correspondences are conducted with the school's Gmail. A Class link/code: will be given for students to join Google classroom.
Students are required to come to class prepared with at least the standard school supplies:
Stationary:
1. Notebook - A Decent Notebook At least 60 to 80 pages - the wire bind ones are very convenient for the students to take notes during every lesson and to do some examples before they start with the classwork or homework assignments
2. File A 60 to 80 Plastic Pocket folder (Flip file) is preferred to keep all tear out assignments and tests together for the whole year
3. Ruler
4. Blue/black pen and pencil (only pens are allowed during tests)
5. Red pen for marking
6. Home online access (Computer/Laptop/Notepad/) to get into Google Classroom and other online websites. Codes will be given later on to get access to the Algebra 1 E-book.
7. Calculator: The CASIO fx-991ES Plus NATURAL-V.P.A.M is suggested to use in Grades 8 (You will be informed when to bring to school) and 9. From Grade 10 onwards a more advanced calculator will be introduced. Other resources may be required when instructed by your teacher.
Academic Dishonesty means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at DIS. Academic dishonesty includes but is not limited to, the following:
   1.   Purposely incorporating the ideas, words of sentences, paragraphs, or parts thereof without appropriate

acknowledgment and representing the product as one's own work; and

1. Representing another's intellectual work such as photographs, paintings, drawings, sculpture, or research or the like as one's own, including failure to attribute content to an AI.
2. Employing a tutor, making use of Artificial Intelligence without acknowledgement, getting a parent to write a paper or do an assignment, paying for an essay to be written by someone else and presented as the student's own work.
3. Committing any act that a reasonable person would conclude, when informed of the evidence, to be a dishonest means of obtaining or attempting to obtain credit for academic work.

Any act of academic dishonesty will result in an automatic zero on the entire assignment

1st QUARTER – TENTATIVE COURSE CONTENT

Week / Date	Topic / Projects / Assessments
(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week 1 **Aug 12th to 16th** **4 Days of Class** 12~ First Day / Orientation Day 15~ Opening Mass & Assumption of Our Lady 8:00 15~ Induction of Class, Student Council Officers and DYM	First Day of School/Orientation Day Class rules New student orientation 1-1 Solving Simple Equations 1-2 Solving Multiple-Step Equations
Week 2 **Aug 19th to 23rd**	1-3 Modeling Quantities 1-4 Accuracy with Measurements 1-5 Solving Equations with Variables on Both Sides Weekly Test
Week 3 **Aug 26st to 30th** 26~Fire drill? 26~Middle and High School Catholic Bridge Program (after assembly) 28~St. Dominic de Guzman Feast Day Celebration	1-6 Solving Absolute Value Equations 1-7 Rewriting Equations and Formulas 2-1 Writing and Graphing Inequalities Weekly Test
Week 4 **Sep 2nd to 6th** 2~House Ceremony	2-2 Solving Inequalities Using addition or Subtraction 2-3 Solving Inequalities Using Multiplication or Division 2-4 Solving Multi-Step Inequalities Weekly Test
Week 5 **Sep 9th to 13th** 9~ Mass & Birthday Mother Mary& VIP Induction	2-5 Solving Compound Inequalities 2-6 Solving Absolute Value Inequalities 3-1 Functions Weekly Test
Week 6 **Sep 16th to 20th** **1 Day of Class** 17~Moon Festival 18-20~ Teacher's Conference	3-2 Characteristics of Functions

Week / Date	Topic / Projects / Assessments
Week 7 **Sep 23rd to 27th** 24-26~Pre-Exam Days	3-3 Linear Functions 3-4 Function Notation 3-5 Graphing Linear Equations in Standard Form Weekly Test
Week 8 **Sep 30th to Oct 4th**	3-6 Graphing Linear Equations in Slope-Intercept form 3-7 Transformations of linear Functions 3-8 Graphing Absolute Value Functions Review of Quarter 1 Exam
Week 9 **Oct 7th to 11th** <u>**1 Day of Class**</u> 7~Launching - Rosary Month and Bullying Prevention Day 8-9 ~Q1 Exams 10~Double Ten 11~Record Day	Review of Quarter 1 Exam Quarter 1 Exam

2nd QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (10) **Oct 14thth to 18th** 14~ Second Quarter Begins	4-1 Writing Equations in Slope-Intercept Form 4-2 Writing Equations in Point-Slope Form 4-3 Writing Equations of Parallel and Perpendicular Lines Weekly Test
Week 2 (11) **Oct 21st to 25th** 25 – Book Fair 25- Masquerade Night	4-4 Scatter Plots and Lines of Fit 4-5 Analyzing Lines of Fit 4-6 Arithmetic Sequences Weekly Test
Week 3 (12) **Oct 28th to Nov 1st** 1-All Saint's Day Mass	4-7 Piecewise Functions 5-1 Solving Systems of Linear Equations by Graphing 5-2 Solving Systems of Linear Equations by Substitution Weekly Test
Week 4 (13) **Nov 4th to Nov 8th**	5-3 Solving Systems of Linear Equations by Elimination 5-4 Solving Special Systems of Linear Equations 5-5 Solving Equations by Graphing Weekly Test
Week 5 (14) **Nov 11th to 15th**	5-6 Graphing Linear Inequalities in Two Variables 5-7 Systems of Linear Inequalities 6-1 Properties of Exponents Weekly Test
Week 6 (15) **Nov 18th to 22nd** 22-Gr.12 Q2 Exam 22 - YSC Contest	6-2 Radical and Rational Exponents 6-3 Exponential Functions Weekly Test
Week 7 16) **Nov 25th to 29th** 25-Gr.12 Q2 Exam 26-28~Pre-Exam Day	6-4 Exponential Growth and Decay 6-5 Solving Exponential Equations Weekly Test

Week 8 (17) **Dec 2nd to Dec 6th** **6~Half Day** Foundation Day Celebrations	6-6 Geometric Sequences 6-7 Recursively Defined Sequences Weekly Test
Week 9 (18) **Dec 9th to 13th** **3 Days of Class** 12-13 ~Q2 Exams	Review of Quarter 2 Exam Quarter 2 Exam
Dec 16th to Jan 3rd	**Christmas Break**

3rd QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (19) **Jan 6th to 10th** **4 Days of Class** 6~Record Day 7~Third Quarter Begins 10 ~ New Year Mass	7-1 Adding and Subtracting Polynomials 7-2 Multiplying and Dividing Polynomials Weekly Test
Week 2 (20) **Jan 13th to 17th**	7-3 Special Product of Polynomials 7-4 Solving Polynomials Equations in Factored Form Weekly Test
Week 3 (21) **Jan 20th to 24th**	7-5 Factoring $x^2 + bx + c$ 7-6 Factoring $ax^2 + bx + c$ Weekly Test
Jan 27th to Jan 31st	**Chinese New Year**
Week 4 (22) **Feb 3rd to 7th**	7-7 Factoring Special Products 7-8 Factoring Polynomials Completely Weekly Test
Week 5 (23) **Feb 10th to 14th** 1-14~Catholic Week	8-1 Graphing $f(x) = ax^2$ 8-2 Graphing $f(x) = ax^2+c$ Weekly Test
Week 6 (24) **Feb 17th to 21st**	8-3 Graphing $f(x) = ax^2+bx+ c$ 8-4 Graphing f(x) = a(x – h)2 + k Weekly Test
Week 7 (25) **Feb 24th to 28th** **4 Days of Class** 24~Lenten Mass? 25-27 ~ Pre-Exam Days 24-27~IOWA Assessments 28 ~ Memorial Day Holiday	8-5 Using Intercept Form 8-6 Comparing Linear, Exponential, and Quadratic Functions Weekly Test

Week 8 (26) **March 3rd to 7th** 5~ Ash Wednesday	Review of Quarter 3 Exam
Week 9 (27) **March 10th to 14th** **4 Days of Class** 14 – Q3 Exams	Quarter 3 Exam

4th QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (28) **March 17th 21st** **4 Days of Class** 17 – Q3 Exams 18~ Fourth Quarter Begins 18~ Fire Drill? 19~ Feast of St. Joseph	9-1 Properties of Radicals 9-2 Solving Quadratic Equations by Graphing 9-3 Solving Quadratic Equations Using Square Roots Weekly Test
Week 2 (29) **March 24th to 28th**	9-4 Solving Quadratic Equations by Completing the Square 9-5 Solving Quadratic Equations Using the Quadratic Formula 9-6 Solving Nonlinear Systems of Equations Weekly Test
Week 3 (30) **March 31st to April 4th** **4 Days of Class** 4~Tomb Sweeping	10-1 Graphing Square Root Functions 10-2 Graphing Cube Root Functions 10-3 Solving Radical Equations Weekly Test
Week 4 (31) **Apr 7th to 11th**	10-4 Inverse of A Function 11-1 Measure of Center and Variation 11-2 Box-and-Whisker Plots Weekly Test
April 14th to April 18th	**Easter Break**
Week 5 (32) **Apr 21st to 25th** 23~Easter Mass 21-25 ~ AP Mock Exams 26~Spring Fair	11-3 Shapes of Distributions 11-4 Two-Way Tables Weekly Test
Week 6 (33) **Apr 28th to May 2nd**	11-5 Choosing a Data Display Weekly Test

4/29-5/1~ Pre-Exam Days 1-2~ Final Exams (K, 5, 8, 12 only)	
Week 7 (34) **May 5th to 9th** 5-9~ Final Exams (K, 5, 8, 12 only) 5-9 ~ AP Exams	Review of Quarter 4 Exam Quarter 4 Exam
Week 8 (35) **May 12th to 16th** **4 Days of Class** 14-15~ Q4 Exam 16~ Record Day 12-16 ~ AP Exams	Quarter 4 Exam for other Grades
Week 9 (36) **May 19th to 23rd** 19-23 ~ Student Clearance 19~ Baccalaureate Mass 23~Gr. 6 – 7 Recognition and Gr. 8 Graduation	*19-23 ~ Student Clearance Days* *19 ~ Baccalaureate Mass for Graduating classes* *23 ~ Pre-Kindergarten & Gr. 1 - 4 Recognition/Kindergarten Graduation/Gr. 5 Promotion* *23 ~ Gr. 6 – 7 Recognition and Gr. 8 Graduation*
Week 10 (37) **May 26th to 30th** **4 Days of Class** 26~House Culminating Activity 27~Gr. 9-11 Recognition and Gr. 12 Graduation 28! Class Party 29- ~ Students Last Day 30~ Teachers/Staff Meeting	*26 ~ House Culminating Activity* *27 ~ Gr. 9-11 Recognition and Gr. 12 Graduation* *28 ~ Class Party* *29 ~ Last Day of School & Report Card Distribution (half day)* *30 ~ Teachers/Staff Meeting*