SAMSEN WITTAYALAI SCHOOL
ENGLISH PROGRAM

COURSE OUTLINE

Subject: Mathematics (MA23101)   **Course Classification**: ☒ Foundation
Learning Period: 3 Periods/Week   **Credit Unit**: 1.5
Grade Level: Mattayomsuksa 3 (Grade 9)   **Semester**: 1 **Academic Year:** 2022
Learning Area: Mathematics   **Samsenwittayalai School** English Program
Teacher: Ms. Daisy Ladiong
              Ms. Sarinya Teerawattananon

I. COURSE DESCRIPTION

The course is aimed to study, practice and mathematical learning process of the following: Factoring Polynomials with Degree Higher than Two, Quadratic Equations, Quadratic Functions, Mathematical skills and process. The course is offered in two types, academic and applied, which are defined as follows: Academic courses develop students' knowledge and skills through the study of theory and abstract problems. Applied courses focus on the essential concepts of a subject, and develop students' knowledge and skills through practical applications and concrete examples.

By presenting the lessons in appropriate order and in creative way along with exercises, projects and assignments it will help the learners to summarize the main point of knowledge, the concept, the definition, the postulate, or any of the theorems considered from the content. Evaluations are done via various assessment methods according to the school's curriculum and the Individual student's skill level and interest. Familiar situations or latest events are used to illustrate ideas, and learners are given more opportunities to experience hands-on applications of the concepts and theories they study.

For mathematics is highly important to develop human mind. It enables a person to think logically and systematically, to analyze various problems or situations, to anticipate, to plan, to make decisions, to solve problems and to apply mathematics to daily life. Mathematics serves as a tool for learning science, technology and other disciplines. It is therefore useful to life, enhancing quality of life and enabling people to live in harmony.

II. INDICATORS

1. Learners' reading, analytical thinking and writing skills meet the criteria prescribed by the respective educational institutions.
2. Learners' desirable characteristics meet the criteria prescribed by the respective educational institutions.
3. M 1.2.1 Understand and use factorization of higher-degree polynomials to solve problems.
4. M 1.3.2 Apply the quadratic equation to one variable in solving mathematical problems.
5. M 1.2.2 Understand and apply the method of solving quadratic function to mathematics problems.
6. M 1.3.1 Understand and use the properties of inequality. To analyze and solve problems using linear inequalities with single variable.
7. M 2.2.1 Understand and use properties of similar triangles to solve math problems and problems in real life.
8. M 3.1.1 Understand and apply statistical knowledge to present and analyze data from box diagrams and interpret results and apply statistics in real life using appropriate technology.

III. TENTATIVE COURSE OUTLINE

Week	Topics T. Daisy	Topics T. Sarinya	Indicator(s)	Period(s)
1	**Factoring Polynomials:** Factoring Polynomials with Degree Higher Than Two	**Quadratic Function:** Introduction to Quadratic Functions	M 1.2.1 M 1.2.2	2
2	Factoring Third Degree Polynomials Using: A. Sum and Difference of Cubes B. Cube of a Binomial	Sketching Graphs of Quadratic Functions (I)	M 1.2.1 M 1.2.2	3
3	Factoring Polynomials with Degree Higher than Two Using: A. Perfect Squares B. Difference of Squares C. Sum and Difference of Cubes	Sketching Graphs of Quadratic Functions (II)	M 1.2.1 M 1.2.2	3

4	Factoring Higher Degree Polynomials Using Pascal's Triangle	Sketching Graphs of Quadratic Functions (III)	M 1.2.1 M 1.2.2	3
5	**Quadratic Equation:** Solving the quadratic equation of one variable	Axes Intercepts of Graphs of Quadratic Functions	M 1.3.2 M 1.2.2	3
6	Application of Quadratic Equation	Quadratic Functions Word Problems (I)	M 1.3.2 M 1.2.2	3
7	Application of Quadratic Equation	Quadratic Functions Word Problems (II)	M 1.3.2 M 1.2.2	3
8	Review for Midterm Examination	Review for Midterm Examination	M 1.3.2 M 1.2.2	3
9	**MIDTERMS**	**MIDTERMS**		3
10	**Similarities:** Similar geometric figures	**Linear Inequality:** Introduction to Linear Inequality in One Variable.	M 2.2.1 M 1.3.1	3
11	Similar Triangles	Graphing Linear Inequality in One Variable.	M 2.2.1 M 1.3.1	3
12	Proving Similar Triangles	Solving Linear Inequality in One Variable (I)	M 2.2.1 M 1.3.1	3
13	Problem Solving with Similar triangles (I)	Solving Linear Inequality in One Variable (II)	M 2.2.1 M 1.3.1	3
14	Problem Solving with Similar triangles (II)	Solving Linear Inequality in One Variable Word Problems (I)	M 2.2.1 M 1.3.1	3
15	**Statistics:** Box Diagram	Solving Linear Inequality in One Variable Word Problems (2)	M 3.1.1 M 1.3.1	3
16	Reading and interpreting from box diagrams	Solving Linear Inequality in One Variable Word Problems (2)	M 3.1.1 M 1.3.1	3
17	Review for Final Examination	Review for Final Examination	M 3.1.1 M 1.3.1	3
18	**FINALS**	**FINALS**		

IV. Teaching Methods and Management

☐ Experiment   ☒ Lecture/Discussion   ☒ Group work

☒ Individual work   ☒ Game   ☐ Song

☒ Self-learning   ☐ Demonstration   ☐ Role play

☒ Project   ☐ Experience   ☐ ICT

☐ Local Wisdom based   ☒ Others

V. Teaching Materials/ Supplements

☒ Handouts   ☒ Worksheets   ☒ Teacher's text book

☒ Graphs/ Diagrams   ☐ Maps   ☒ Pictures

☐ Samples/ Models   ☒ Exercise s

☐ Commercial Text Book

☐ DVD/VCD

☐ Website

☒ Others

VI. Assessment and Evaluation

Indicator / Learning Outcome Score from SGS	Formative I				Midterm	Formative II						Final
	1	2	3	4		10	11	12	13	14	15	
Total score	20				20	10	10	20				20
Learners' reading, analytical thinking						10						
Learners' desirable characteristics							10					
M 1.2.1	10				10							2
M 1.3.2	5				5							1
M 1.2.2	5				5							1
M 1.3.1								8				6
M 2.2.1								6				6
M 3.1.1								6				4

VII. Assignment

SGS No.	Score (points)	Assignment	Deadline	Type		
				Test	Individual	Group
1	20	• Exercises and worksheets • End of chapter examinations	Week 7		✔	
Midterm	20	Midterm Exam	Week 9	✔		
10	10	Learners' reading, analytical thinking	Week 18		✔	
11	10	Learners' desirable characteristics	Week 18		✔	
12	20	• Exercises and worksheets • End of chapter examinations	Week 15		✔	
Final	20	Final Exam	Week 18	✔		

Note: 1. Assignment are quiz, homework, exercise report or project etc.
2. The details in assessment and evaluation are tentative.