



**SAMSEN WITTAYALAI SCHOOL
ENGLISH PROGRAM**

COURSE OUTLINE

Subject: Basic Mathematics (MA23211) **Course Classification:** Foundation Additional
Learning Period: 2 Periods/Week (100 mins) **Credit Unit:** 1.0
Grade Level: Mattayomsuksa 3 (Grade 9) **Semester 1 Academic Year 2022**
Learning Area: Mathematics **Samsenwittayalai School English Program**
Teacher: Ms. Joy D. Soliva

I. COURSE DESCRIPTION

The course is aimed to study, practice, develop mathematical skills, reasoning skills, and problem-solving skills, and apply knowledge through study of the following: Roots and Radicals, Factorizing Polynomials, and Rational Expressions. 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 learners' knowledge and skills through practical applications and vivid examples.

By presenting the lessons in systematic, creative, and fun way along with exercises, worksheets, projects, and assignments, it will help the learners to surmise the main thought, show processes, describe characteristics of a geometric figures considered from the content, and explain concept and its application to real life. Surround experiences or situations will be set in the study with practice, summarizing, interpreting and reporting. The learning assessment and evaluation methods are done according to the school's curriculum: student's knowledge, skill, interest, and behavior.

For applying the knowledge, the purpose is to develop learners' skills in calculation, problem solving, reasoning, mathematical communication, and application of experience in knowledge, and obtained processes to learn things in daily life creatively. Furthermore, learners will be trained to have appreciation with good attitude towards mathematics as well as ability to work orderly, carefully, responsibly, mindfully, and confidently which will prepare them for their future studies.

II. INDICATORS / LEARNING OUTCOMES

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. Use property of addition, subtraction, multiplication, and division with real numbers involve in roots and radicals.
4. Factor polynomials by completing the square and factor polynomials with degree higher than two having integer coefficient by completing the square and/or using factor theorem and remainder theorem.
5. Use property of addition, subtraction, multiplication, and division with real numbers in solving rational expressions.

III. TENTATIVE COURSE OUTLINE (about 18 weeks)

Week	Topics / Contents	Indicator(s)	Period(s)
1	<ul style="list-style-type: none"> • Introduction to Roots and Radicals 		1
2	<ul style="list-style-type: none"> • Understanding Roots, Radicals, Rational, and Irrational Numbers 		2
3	<ul style="list-style-type: none"> • Simplifying Square Roots of a Number 		2
4	<ul style="list-style-type: none"> • Operations on real number corresponding to Roots and Radicals: Addition • Operations on real number corresponding to Roots and Radicals: Subtraction 		2
5	<ul style="list-style-type: none"> • Operations on real number corresponding to Roots and Radicals: Multiplication • Operations on real number corresponding to Roots and Radicals: Division 		2
6	<ul style="list-style-type: none"> • Rationalizing the denominator of a fraction 		2
7	<ul style="list-style-type: none"> • Solving Radical Equations 		2
8	<ul style="list-style-type: none"> • Application of Roots and Radicals <p>UNIT TEST & REVIEW FOR MIDTERMS</p>		2
9	MIDTERM EXAMINATION		1
10	<ul style="list-style-type: none"> • Introduction to Polynomials 		1
11	<ul style="list-style-type: none"> • Factoring the Difference of Two Squares and Completing the Squares • Creating a Perfect Square Trinomials and Factoring Higher Order Degree Polynomials with Integer Coefficients 		2
12	<ul style="list-style-type: none"> • Factor Theorem and Its Application 		2
13	<ul style="list-style-type: none"> • Remainder Theorem and Its Application <p>UNIT TEST</p>		2
14	<ul style="list-style-type: none"> • Introduction to Rational Expression and Its Simplification 		2

15	<ul style="list-style-type: none"> • Multiplying Rational Expression • Dividing Rational Expression 		2
16	<ul style="list-style-type: none"> • Adding Rational Expression • Subtracting Rational Expression 		2
17	<ul style="list-style-type: none"> • Application of Rational Expression UNIT TEST & REVIEW FOR FINALS		2
18	FINAL EXAMINATION		1

IV. Teaching Methods and Management

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| <input checked="" type="checkbox"/> Discovery Learning | <input checked="" type="checkbox"/> Lecture/Discussion | <input checked="" type="checkbox"/> Group work |
| <input checked="" type="checkbox"/> Individual work | <input checked="" type="checkbox"/> Game | <input checked="" type="checkbox"/> Song |
| <input checked="" type="checkbox"/> Self-learning | <input checked="" type="checkbox"/> Demonstration | <input checked="" type="checkbox"/> Video Presentation |
| <input checked="" type="checkbox"/> Project | <input checked="" type="checkbox"/> Experience | <input checked="" type="checkbox"/> Local Wisdom based |

V. Teaching Materials/ Supplements

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| <input checked="" type="checkbox"/> Handouts | <input checked="" type="checkbox"/> Worksheets | <input checked="" type="checkbox"/> Teacher's text book |
| <input checked="" type="checkbox"/> Graphs/ Diagrams | <input checked="" type="checkbox"/> Pictures | <input checked="" type="checkbox"/> Commercial Text Book |
| <input checked="" type="checkbox"/> Samples/ Models | <input checked="" type="checkbox"/> Book Exercise/s | |
| <input checked="" type="checkbox"/> Website Khan Academy | | |
| <input checked="" type="checkbox"/> Application Software : Geometer's SketchPad , GeoGebra , Microsoft Office | | |

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	10				15	10	10	10	10	5		30
Learners' reading, analytical thinking						10						
Learners' desirable characteristics							10					
Use property of addition, subtraction, multiplication, and division with real numbers in square root	10				15							
Factor polynomials by completing the square and factor polynomials with degree higher than two having integer coefficient by completing the square and/or using factor theorem and remainder theorem.								10		2.5		15
Use property of addition, subtraction, multiplication, and division with real numbers in solving rational expressions.									10	2.5		15

VII. Assignment

SGSNo.	Score (points)	Assignment	Deadline	Type		
				Test	Individual	Group
1.	10	Quiz/homework/ worksheet/Unit Test	Week 7		✓	
Midterm	15	Midterm Exam	Week 9	✓		
10	10	Learners' reading, analytical thinking	Week 18		✓	
11	10	Learners' desirable characteristics	Week 18		✓	
12	10	Quiz/homework/ worksheet/ Unit Test	Week 15		✓	
13	10	Quiz/homework/ worksheet/ Unit Test	Week 17		✓	
14	5	Report/Project				✓
Final	30	Final Exam	Week 18	✓		

Note: The details in assessment and evaluation are tentative.