SAMSEN WITTAYALAI SCHOOL
ENGLISH PROGRAM

COURSE OUTLINE

Subject: Mathematics (*MA32201*) **Course Classification**: ☐ Foundation ☑ Additional
Learning Period: 3 Periods/Week **Credit Unit**: 1.5
Grade Level: Mattayomsuksa 5 (Grade 11) **Semester** 1, **Academic Year** 2022
Learning Area: Mathematics **Samsenwittayalai School** English Program
Teacher: Dr. Phakaporn Lewchalermvongs

I. COURSE DESCRIPTION

Exponentials and Logarithms: Exponential functions, logarithms, exponential equations and logarithmic equations, exponential inequalities and logarithmic inequalities, applications. **Trigonometric Functions:** trigonometric functions, inverse trigonometric functions, compound angle formulas, double angle formulas, half angle formulas, trigonometric identities, The cosine rule and the sine rule, applications. Implanting logical and symmetric thinking, inspiring creativity, and analyzing of various situations precisely are most important skills. Mathematics plays an important role in developing all of these skills. It leads to accurate predictions, optimal problem solving and decision making in daily life. Moreover, mathematics is a fundamental skill for learning science and technology.

By using the scientific processes, searching data, discussion, analyzing, comparing, presentation, testing, prediction, investigation and experimenting.

For improving the scientific knowledge, thoughts and understanding so that the students can make use of the knowledge to make decision, use the 21st century skills in information technology, critical thinking and problem–solving, communicating. They can also use the knowledge in every day's life, leading to scientific mind, ethics, virtues and appropriate attitudes

II. 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. Learners are able to understand the graphs of exponential functions and logarithms, and solve problems using them.
4. Learners are able to solve exponential equations and inequalities, and logarithmic equations and inequalities.
5. Learners are able to understand trigonometric functions and their graphs.
6. Learners are able to apply the concepts of trigonometric functions to solve a problem.
7. Learners are able to solve trigonometric equations.
8. Learners are able to use the sine and cosine rules to solve a problem.

III. TENTATIVE COURSE OUTLINE

Week	Topics / Contents	Learning outcome	Period(s)
1.	**Exponentials and Logarithms**		3
2.		Exponentials	3
3.		Exponential properties	3
4.		Solving Exponential equations and inequalities	3
5.		Graphs of exponentials	3
6.		Logarithms	3
7.		Laws of logarithms	3
8.		Solving logarithmic equations and inequalities	3
9.		Graphs of logarithms	3
10.	**Midterm Examination**		
11.	**Trigonometric Functions**	Basic trigonometric functions	3
12.		Trigonometric Functions for angles of any size	3
13.		Graphs of trigonometric functions	3
14.		Inverse trigonometric Functions	3
15.		Trigonometric identities	3
16.		Compound angle formulas, double angle formulas, half angle formulas	3
17.		Solving trigonometric equations	3
18.		The cosine rule and the sine rule	3
19.		Applications	3
20.	**Final Examination**		

IV. TEACHING METHODS AND MANAGEMENT

- ☑ Lecture/Discussion
- ☑ Individual work

V. TEACHING MATERIALS/SUPPLEMENTS

- ☑ Handouts
- ☑ Worksheets
- ☑ Exercises

VI. ASSIGNMENT

No.	Assignment	Score (points)	Dead line	Type		Remark
				Individual	Group	
1.	Quiz	10	August	✓		
2.	homework/worksheet	5	Before Midterm Exam.	✓		
3.	Quiz	15	October	✓		
4.	homework/worksheet	5	August	✓		
Total		30				

VII. ASSESSMENT AND EVALUATION

Item	Percentage
Formative 1	**15**
Quiz	10
Homework/ worksheet	5
Mid-term Examination	**15**
Formative 2	**40**
Desirable Characteristics	10
Learner's Key Competencies	10
Quiz	15
Homework/ worksheet	5
Final Examination	**30**
Total	**100**