

## Course Outline

Department : Bilingual  
M32206

Name of Subject : Mathematics in English

Code :

Teacher's name :

Level ;

Primary \_\_\_\_

Secondary \_\_\_\_

1<sup>st</sup> - 2<sup>nd</sup> Semester / 2014

Subject :

Main Subject

Optional Subject

Development Activities for Students

Others

### I. COURSE DESCRIPTION:

My world of Math for Matheyom Level 5 is divided into 2 Chapters which are: Chapter 1- Series and Sequence; and Chapter 2- Probability. The Chapter 1 of the textbook covers the following sub-topics such as: a) definition of sequence; b) sequence as a function; c) infinite and finite sequence; d) arithmetic sequence; e) geometric sequence; f) definition of series; g) sum of the first n terms ( $S_n$ ); and h) arithmetic series.

Chapter 2 covers: a) tree diagram and fundamental principle of counting (F|PC); b) definition of probability; c) random experiments and sample spaces; d) definition of events; e) types of events; f) algebra of events; h) probability of an event; and i) theorem of probability. This 5<sup>th</sup> course designed by the Congregation of Montfort Brothers of Saint Gabriel also known as Saint Gabriel's Foundation for Secondary Mathematics aims to: a) build up

adeptness in Mathematical Skills; b) be more familiar with concepts and principles in Higher Mathematics; c) develop Higher-order Thinking Skills; and d) promote effective, self-developed and productive citizenry.

A variety of strategies are availed of in order to boost or strengthen the possibility of achieving the given goals:

1. Charts, figures, graphs and diagrams are provided for easy understanding of concepts and visualization of the ideas presented.
2. Illustrative examples are provided for easier grasp of principles studied.
3. Exercises are prepared for skill-building and for checking student's progress.
4. National test- Thailand O- Net 2005-2009 questions are prepared for assessment of students' progress and evaluation.

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## **II. GRADE- LEVEL INDICATORS**

- Have concepts of the real number system, absolute values of real numbers and real numbers expressed in radicals and in exponential notation with rational indices; can find estimates of real numbers expressed in radicals and exponents through appropriate calculation methods; and can apply properties of real numbers.
- Apply knowledge of trigonometric ratio for estimating distance and height, and can solve measurement problems.
- Have concept of sets and their operation; and can apply knowledge of Venn-Euler diagrams for problem-solving and checking validity of reasoning.
- Understand and can apply reasoning through induction and deduction.

- Have concepts of relation and function that can be applied for problem-solving in various situations.
  - Understand concepts of arithmetic sequence, geometric sequence and can find general terms; understand the concepts of the sums of the first  $n$  terms of arithmetic and geometric series, by using formulas that can be applied.
  - Know and understand the concept of solving equations and inequalities with one variable (degree not more than two); and can also use graphs of equations, inequalities or functions for problem-solving.
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### III. LEARNING OBJECTIVES

#### 1) Learning Objectives ( 1<sup>st</sup> Semester )

Indicators of Semester	In accordance with government curriculum
1. Construct the general term for a sequence;	YES
2. Perform problem solving of series of terms defined by given rules;	YES
3. Find the sum of the first $n$ terms of a given arithmetic and geometric series;	YES
4. Perform problem solving of sequence and series given by the National Test Thailand O-NET 2005 questions;	YES
5. Theorize fundamental principle of counting;	YES
6. Perform problem solving using the fundamental principle of counting;	YES
7. Theorize probability and even;	YES
8. Perform problem solving on probability of an event;	YES
9. Apply the theorem of probability; and	YES
10. Perform problem solving of probability and events given by the National Test Thailand O-NET 2009 questions.	YES

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## V. SUBJECT CONTENTS

### 1<sup>st</sup>-SEMESTER

Time Duration	Subject Contents
Beginning of the session-Midterm	a) definition of sequence; b) sequence as a function; c) infinite and finite sequence; d) arithmetic sequence;
Post Midterm – Final	e) geometric sequence; f) definition of series; g) sum of the first n terms ( $S_n$ ); and h) arithmetic series.

## EVALUATION

### 1. Average marks for evaluation.

Authentic Assessment: Written/Practical Exam = 60: 40

### 2. Evaluation of Learning Objectives

Semester	Learning Objectives (Items)
1	Items 1-4

### Authentic Assessment

\*\*\*Pre-test marks: 30

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
1	Class response and participation	10
1	Assignment/ Home work	10
2	Seatwork	10

### Written Exam

\*\*\*Midterm marks: 20

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
2	Multiple Choice	10
4	Problem Solving	10

### Authentic Assessment

\*\*\*Post-Test marks: 30

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
1	Homework, Quiz	10
2	Class Participation	10
3	Seatwork, Calculations	10

### Written Exam

\*\*\*Final marks: 20

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
4	Multiple Choices	10
4	Calculation, Problem Solving	10

## VII. SUBJECT CONTENTS

### 2<sup>nd</sup> SEMESTER

Time Duration	Subject Contents
Beginning of the session-Final	a) tree diagram and fundamental principle of counting (F PC); b) definition of probability; c) random experiments and sample spaces; d) definition of events;
Post Test – Final	e) types of events; f) algebra of events; h) probability of an event; and i) theorem of probability

## EVALUATION

### 1. Average marks for evaluation.

Authentic Assessment: Written/Practical Exam = 60: 40

### 2. Evaluation of Learning Objectives

Semester	Learning Objectives (Items)
2	Items 5-10

### Authentic Assessment

\*\*\*Pre-test marks: 30

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
5	Class response and participation	10
5	Assignment/ Home work	10
6	Seatwork	10

### Written Exam

\*\*\*Midterm marks: 20

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
6	Multiple Choice	10
6	Problem Solving	10

### Authentic Assessment

\*\*\*Post-Test marks: 30

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
7	Homework, Quiz	10
8	Class Participation	10
8	Seatwork, Calculations	10

### Written Exam

\*\*\*Final marks: 20

Learning Objectives (Items)	Criteria Followed for Assessment	Maximum marks
9	Multiple Choices	10
	Calculation, Problem Solving	10

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**Reference Books /Worksheets/Other Teaching Aids Used:**

- Bernabe, J.G (et.al.)(2003). Advance Algebra, Trigonometry and Statistics. 1281 Gregorio Araneta Avenue, Quezon City, Philippines: JTW Corporation.
- St. Gabriel Foundation (2013). My world of Math-Secondary 5. 160 Anna Salai, Chennai Bangkok, Thailand: Orient Blackswan Private Limited.