

## Equations and Identities (MATS2220)

### Introduction

Equations and identities are fundamental elements in algebra. In order to achieve further level in algebra and other fields of Mathematics (e.g. calculus), one must have solid background on these topics. Also, in our daily lives, many problems could be solved by equations. In this course, some basic techniques in handling identities and equations will be explored.

This is the first programme in the **Subject Core Series** which is comprised of four level 2 programmes. They are namely

1. Equations and Identities (MATS2220)
2. Handling Sequences and Series (MATS2410)
3. Plane Geometry (MATS2310)
4. Quadratic Functions and Standard Conics (MATS2610)

MATS2410 and MATS2310 will be held in Jul and Aug 2019 respectively while MATS2610 is scheduled to be held in Dec 2019. For details, please refer to the programme flyer to be posted in due course.

### Programme Type / Level

Algebra Course (Level 2) ([Token-required](#))

### Instructor(s)

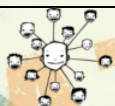
Mr Tse Siu On

### Pre-requisites

Students should have:

- Be able to perform basic algebraic manipulations such as addition and multiplication of polynomials, simplification of rational expressions, etc.;
- Have basic ideas on handling simple linear equations such as finding root and forming equation with given root;
- Know basic operations such as addition and multiplication of surds.

### Target Participants



- S1 – S3 HKAGE student members
- Class size: 50

### Medium of Instruction



Cantonese with English handouts

### Certificate



**E-Certificate** will be awarded to participants who have:

- ❖ Attended **AT LEAST 3** sessions AND
- ❖ Completed all assignments with satisfactory performance in the course tests

### Intended Learning Outcomes

#### Outcomes



Upon completion of the programme, participants should be able to:

1. Apply basic identities to solve related problems;
2. Determine critically which method to be used when solving a quadratic equation;
3. Analyse the nature of roots and relation between roots and coefficients for any given quadratic equations.

### Screening



Please answer the screening question in the online application form.

\*The screening question is designed to help the applicant understands the course level and the course content. The question must be answered by the student applicant and it can only be attempted once. The answer cannot be changed once the application is submitted. Selection is based on students' performance in answering the question. Only students who can demonstrate motivation and the basic knowledge of equations and identities in the screening question can be enrolled in the programme.

### Application Deadline

**29 Apr 2019, 12:00 n.n**

### Application Result Release Date

**10 May 2019**

If student members withdraw from the programme after the Application Deadline, the token will be deducted.

## Schedule



Session	Date	Time	Venue (HKAGE)
1	15 Jun	2:00 p.m. – 5:00 p.m.	Room 105
2	22 Jun		
3	29 Jun		
4	6 Jul		

### Remarks:

For any assessment to be held in the programme, no make-up will be arranged.

## Sample Example for the Programme

### Forming equation with given roots

Given  $\alpha$ ,  $\beta$  be the roots a quadratic equation

The quadratic equation is

$$(x-\alpha)(x-\beta) = 0$$

sum of roots

$$x^2 - (\alpha + \beta)x + \alpha\beta = 0$$

product of roots

The required equation is

$$x^2 - (\text{sum of roots})x + (\text{product of roots}) = 0$$

## Enquiries



For enquiries, please contact us at 3940 0101 after language selection, press "1".